

**MADE IN GERMANTOWN:
PRODUCTION, WEAR, AND REPAIR
OF AMERICAN FRAME-KNIT STOCKINGS 1683-1830**

by
Emily Whitted

A thesis submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Master of Arts in American Material Culture

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ABSTRACT

Just north of Philadelphia, the community of Germantown produced distinctive knit stockings on machinery known as knitting frames. Founded in 1683 by German immigrants with focuses on textile production, Germantown was subsequently celebrated for the domestic manufacturing potential in the colony of Pennsylvania and later the newly formed American nation. Durable and warm, these frame-knit stockings were a recognizable article of clothing worn by numerous early Americans, and could be found on the feet of tradesmen, indentured servants, apprentices, enslaved men, sailors, and Revolutionary War soldiers. No identified pairs of Germantown stockings survive, and their production is shrouded in mythology. This thesis traces the production, wear, and repair of Germantown stockings from 1683 to 1830 through material evidence of extant knitting frames and comparative stockings, in addition to account books and runaway advertisements. This thesis ultimately argues that the analysis of eighteenth-century Germantown stocking as an industry and a brand renders visible male German immigrants, networks of women integrally contributing to the life cycle of stockings, and bound laborers whose bodies risked detection by wearing recognizable articles of clothing as they fled their masters.

INTRODUCTION

The summer of 1777 was a time of scarcity in the home of Peggy Muhlenberg. In Philadelphia, Peggy felt the troubling effects of the colonies' rebellion from Great Britain seep into her everyday life. Neighbors began to leave town in April in anticipation of possible British occupation, shops closed, and church services were almost empty as men hid to avoid jail time being tarred and feathered.¹ A series of letters between April and July to her sister Eva Elisabeth in Tulpehocken, Pennsylvania reveals her growing desperation for basic necessities not only for herself, but also for her sister's family, who usually relied on her to procure objects like fabric, wool cards, shoes and stockings from the variety of options an urban center like Philadelphia could provide. Stockings in particular were in short supply; Peggy wrote "my dear, there are none to be had for love or money."²

The scarcity of stockings in 1777 is not a surprising circumstance but would only worsen. In Germantown, Pennsylvania, less than 10 miles from the heart of Philadelphia, the colonies' largest frame-knit stocking industry concentrated fully on

¹ Peggy Mulhenberg. *Peggy Muhlenberg to Elizabeth Schwartz, July 11, 1777*. Letter. Col. 851, Downs Collections, Winterthur Museum, Library and Garden, *Muhlenberg Family Papers 1768-1895*.

² Peggy Mulhenberg. *Peggy Muhlenberg to Elizabeth Schwartz, April 24, 1777*. Letter. Col. 851, Downs Collections, Winterthur Museum, Library and Garden, *Muhlenberg Family Papers 1768-1895*.

knitting for the feet of Washington's army. They had sent 4000 pairs of stockings to Albany earlier that year, and likely would have sent more had not the Battle of Germantown on October 4th left the town under British occupation, forcing almost 100 "stocking weavers" (also known as frame knitters) out of work. Knitting frames sat idle in Germantown homes, vulnerable to British troops. In a letter written December 1777, Jacob Morgan Jr., Colonel of the Philadelphia militia's first battalion, wrote the Vice President of Pennsylvania, George Bryan, about the Germantown frame knitters' empty machinery. "Are they not objects worthy notice of Council[?]" Morgan asked. "Should the enemy determine to stay or leave Philad[elphia] this winter they will probably destroy them, which would be a great loss to the state."³

Germantown's early stocking industry is shrouded in mythology. Lauded by both William Penn and Francis Daniel Pastorius, Germantown's founder, as a shining beacon of successful early American production, these primarily German frame knitters were used before the Revolutionary War as a recruitment strategy for the Pennsylvania colony and after the Revolutionary War as an example of an industry that could equal and even surpass Great Britain's. The stockings they produced were so distinctive that runaway ads in the period, general store account books, and household receipts simply describe them as "Germantown stockings" without any need for further description. After 1830, the industry began to reorganize from cottage

³ Jacob Morgan, Jr.. *Jacob Morgan, Jr. to V.P Bryan, December 23, 1777*. Letter. Pennsylvania Archives, Series 1, Vol. VI. *Pennsylvania Archives 1777*. Accessed March 19, 2020. <https://www.fold3.com/image/898056>

industries to knitting mills, primarily due to an influx of English immigrants bearing English-made frames looking for work as Nottingham's saturated knit stocking industry began to decline. But prior to this restructuring, Germantown's (and by extension, Philadelphia and southern Pennsylvania's) frame-knit stocking production is an excellent case study to better understand one of the most important, and poorly understood, early American industries.

Whether in times of war or peace, early Americans *needed* stockings, and that need drove their creation, wear, and repair in early America. John Styles' *The Dress of the People* discusses at length how stockings were worn by all but the very poorest of society, serving as the most basic signifier of common, everyday dress. Stockings could certainly range in quality, but they were generally essential garments for all. Early Americans could wait for imported frame-knit stockings, hand-knit their own, or instigate their own cottage industries within their communities. Germantown's frame knitters did the latter, and the demand was high. While the knitting frame was an English invention, the technology diffused throughout Europe and machinery made it into America primarily in the hands of German immigrants, smuggled on ships to avoid England's restriction on their export. Once in America, German immigrants produced signature knit stockings under the Germantown brand and these stockings would primarily clothe the laboring class —indentured servants, enslaved individuals, soldiers, sailors, and apprentices—of the colonies.

Historiography of Stockings

To know a stocking well is to know the body of an early American well. Knit fabric encased the legs and feet of almost all early Americans, acting as an additional membrane between skin, shoe, and the outside world. Long before elastic was invented, knit fabric's ability to stretch due to its series of loops made knit garments more form-fitting and adaptable to size variation in bodies. Stockings outlined the shapes of calves, softening the legs under uniform fabric, and effectively masked all manner of sores, calluses, bunions and other colonial foot woes as listed in popular household guides like *The Prudent Housewife*.⁴ In lieu of bodies, stockings are the next best thing: material echoes.

Viewing them as garments, scholarship on stockings has focused mainly on what can be seen between the ankles and the knees. The fashion of stockings, most comprehensively covered in Jeremy Farrell's *Socks and Stockings*, encompasses their performative aspects, including color as well as embroidered details around the ankles, called clocking (figure 1). Written descriptions of stockings in eighteenth-century runaway advertisements reveal the variety of style, colors, and embellishments, with blue as the most popular stocking color in early America.⁵ The contents of these

⁴ Lydia Fisher. *The complete English cook, or Prudent Housewife: being a Collection of the newest and least expensive Recipes in Cookery...for the Cure of every Disorder*. (London: T. Sabine and Son, 1781), 116.

⁵ *The Pennsylvania Gazette*. "November 10, 1766." *The Pennsylvania Gazette*. November 13, 1766. Accessible Archives (accessed October 22, 2019).

sources reveal the untrustworthiness of visual culture when comparing documented variety of stockings with those depicted in paintings and prints. Generally, stockings were painted white, with depictions of clocking if the rendering was meant to signify a wealthier individual, as seen clearly in Charles Willson Peale's 1795 painting of Raphaëlle and Titian Ramsay Peale (figures 2-3). Any additional details, if out of sight, have remained out of mind.

Knit stockings, boxed up in collections, are notoriously difficult to date, and often go understudied if they lack provenance. At no fault of their own or their institutions, they tend to be neglected objects: generally out of public view, existing in a grey area of historic dress and flat textiles. Once analyzed, however, they allow for closer examination of the extremities, which in turn unlocks new clues to stocking creation, wear, and repair. Usually hidden inside shoes, the feet of stockings were devoted to comfort and durability, often sporting reinforced heels and darning to repair holes in the fabric. Flat seams along the back leg are the most obvious clue in differentiating between a frame-knit and a hand-knit stocking. Above the knee, the folded rims of stockings, known as welts, can betray maker's marks knit into the fabric itself, as well as owner's marks in the form of stitched initials. The material evidence found in stockings can provide a wealth of information that cannot be found in written or visual sources and signify a diverse cast of characters responsible for their creation and use.

In committing to understanding the impact of Germantown stockings in particular, I am at a distinct disadvantage. Echoing a common lament in the field of

material culture, I have had to broker an uneasy but necessary relationship with absence. The majority of early American stockings preserved in collections today are made of silk, produced across the Atlantic in England or France and imported. Finer things tend to live longer, and Germantown stockings, although certainly valued for their durability and warmth, would not have been considered fine. This reality, paired with the general lack of exposure knit stockings receive in collections, has made my hunt for surviving Germantown stockings, at the moment of this writing, fruitless.⁶ In the absence of confirmed Germantown stockings, I have committed to illustrating the industry itself, and working backwards using sources such as account books, material evidence from knitting frames, and newspaper advertisements to recreate their life cycle.

At the writing of this thesis, there is no definitive work on the history of early American stocking production. Given its public appeal and its nostalgic relation to female domestic industry, early American hand knitting has received the most attention, although that consists of tangential commentary as part of plain sewing education and needlework trades by Marla Miller in *The Needle's Eye* and more robust analysis in homespun mythology by Laurel Thatcher Ulrich in *The Age of Homespun*. Nonetheless, both Miller and Ulrich's texts have been essential to my understanding of the communities of women contributing to Germantown stockings' creation, wear, and

⁶ I am hopeful that a future researcher (perhaps even myself) will be able to recognize and study a pair of Germantown stockings if they have been preserved in a collection without certain provenance.

repair, and their methodologies in practice have been foundational. Previous scholarship on eighteenth-century frame knitting tends to prioritize the stocking industry in England, which was the most substantial and remains well-documented. Earlier works such as William Felkin's *History of the Machine-Wrought Hosiery and Lace Manufactures*, which provides a wealth of technical details towards understanding the frame's operation, and later works such as Stanley Chapman's *Hosiery and Knitwear*, which gives crucial insight into the structures of a frame knitter's cottage industry, are excellent resources for England's industry. Because of England's colonial relationship with early America and subsequent immigration of English frame knitters in the mid-nineteenth century, many assume that the industry in early America was either nonexistent or a series of small-scale stocking operations resembling that of nineteenth-century Nottingham or London. But that is not the case. Germantown's cottage industry does not look like England's industry, and is in need of a new framework for its analysis.

Overview of Chapters

To that end, much of my argument lies in the organization of my work, with explicit goals to examine Germantown's nascent stocking industry as holistically as possible out of the shadow of the English industry, and to view early American stockings as objects worthy of analysis past their initial creation point. This thesis

articulates the life cycle of an eighteenth-century American made stocking, using the frame knitting industry in Germantown, Pennsylvania as a case study. Chapter 1 focuses on the human networks of the Germantown frame knitting industry superimposed on the physical space of the community, relying primarily on genealogical records, period maps and probate inventories to provide more comprehensive data on labor and refocus the historic narrative on the industry's German identity. Chapter 2 provides detailed analysis of a Germantown stocking's creation, paying particular attention to the rhythms of a frame knitter's work and the embodied knowledge between user and machine.⁷ Chapter 3 discusses the public and private perception of Germantown stockings while in use, tracing their consumption, wear, and repair on the feet of early Americans, as well as the power of the Germantown brand. I argue that Germantown stockings were more than a socio-political tool for those with a vested interest in early American manufacturing. For groups of early Americans struggling with shifting experiences of identity and power, whether as a laborer whose work was not their own, a German immigrant self-defining his path to Americanization, or a woman whose contributions to the life cycle of a stocking existed in the grey area of domestic and professional realms and escaped archival records, Germantown stockings were objects that rendered their experiences

⁷ Technical analysis of frame knitting and traditional artifact analysis of Godfrey Miller's frame reside in the appendices.

visible. That visibility was split, as stockings were, by what was publicly viewed and privately executed.

Historiography of Germantown and Methodology

Germantown's long history of textile production has not gone entirely unnoticed by historians, although much more care and attention has been given to its industry after 1830. It has been consistently tucked inside larger conversations around Philadelphia's textile industry, including Philip Scranton's *Proprietary Capitalism*, which was nothing short of groundbreaking for its overview of the city's organized textile production from the early Republic to the mid-twentieth century. Before 1830, scholarship is sparse, primarily because frame knitting and weaving do not share the same technology. David J. Jeremy's *Transatlantic Industrial Revolution* avoids data collection on frame knitting altogether, despite mentioning its huge impact on Philadelphia's textile landscape. Adrian Hood's *The Weaver's Craft* does include frame knitting within her overview of Pennsylvania cloth production, but it begs more contextualization. Martha Crary Halpern's article "Germantown, Philadelphia: An Emigre Textile Settlement, 1680-1960" remains the only published work that includes the eighteenth-century Germantown stocking industry in more specific terms than patriotic reputation. Halpern's research confirmed that Germantown's early industry

could be investigated further, and I have infused her groundwork with new primary sources and object analysis.

Of only five existing eighteenth-century knitting frames in American museum collections known to date, a frame at Philadelphia University's Paley Design Center has confirmed Germantown provenance and a wealth of primary evidence from its prior owner and operator, Godfrey Miller, a German immigrant frame knitter who arrived in Germantown in 1763 with a French-made knitting frame. The Godfrey Miller Family Collection, located in the Winchester- Frederick Historical Society Archive, can trace Miller's every move from Germany to Germantown, and can even provide his hair color and height. A frame-knit waistcoat, which was most likely his guild masterpiece before departing Germany, survives as testament to his skill and capabilities on a frame. Within this thesis, I have the rare opportunity of producing scholarship from archival and material sources that can recreate the body of a framework knitter with incredible detail. To better understand frame knitting, Godfrey Miller's body is important material evidence. Joanna R. Sofaer's work *The Body as Material Culture* has approached this idea through the field of archaeology, and her arguments posit the materiality of the body as the materiality of process. To Sofaer, "the body is literally created by objects," and while I cannot contribute close analysis of Godfrey Miller's body to confirm this, I can use her theory for frame-work; that is, understanding how the frame shaped Miller's body and his body shaped the frame. This approach allows me access the embodied knowledge of an early American artisan.

I have also experienced firsthand the relationship between a knitting frame and its operator, having had the opportunity to work on a knitting frame myself. As part of the research for this work, I trained on operational knitting frames at the Framework Knitters Museum in Nottingham, England and produced stocking-gauge fabric and patterning. Sitting inside the confines of the wooden frame, squinting even in broad daylight at the minuscule loops of thread over bearded needles, I placed myself in the shoes of the men (and on occasion, women) who have worked these machines for long hours at a time.⁸ Scholarly precedent for “thinking through making” has been set by Tim Ingold, whose work *Making* served me well in validating the experience of frame knitting as a way of studying the body and the machine working in tandem. Together, Godfrey Miller and I contribute to new scholarship devoted to the eighteenth-century frame-knit stocking industry in America.

The gaps in the archive historians rely on for evidence is hard to fill, and while recognition of those gaps is an important act in itself, I cannot ask for retroactive reconstruction. Objects like Germantown stockings, worn by the eighteenth-century laboring class of Pennsylvania, experienced frequent use and were lost to time as they wore out, or never prioritized for collection due to their ephemeral nature. Their absence is one explanation for their neglect. But another is tied to the current day

⁸ An account book for Holly Farm in Derbyshire lists accounts for stocking frame rentals, which included a “gauge 24 worsted frame” operated by Mary Scarson of Rapplewick. If frames were operated by women in England, there is a possibility that women were also operating frames in the colonies as well. Adcock Shaw. *Account Book 1745-1888*. Account book. GB 0157 Nottinghamshire Archives DD/2023/1-2.

assumption that stockings are, above all else, private garments. They are mundane, but also illicit. Viewers find no connection to the bodies who wore them, or too much. If archival evidence proves anything, it is that Germantown stockings were also public facing, but not sexualized. Memories of them are captured in descriptions, a mental image of the everyday captured in hyper scrutiny, in the form of runaway advertisements or travelers' diaries visiting Germantown's stocking industry. This documentation was motivated by both patriotic sentiment and surveillance, but also general public observation. My primary goal is to return some of the most intimate objects relating to early American bodies back to the public eye, to rebalance what was both private and public in early America by making it public once again in the twenty-first century. Perhaps it will pass on an appreciation for the everyday, perhaps it will reteach us to notice the objects that walk with us.



Figure 1 Clocking, or embroidery on the ankle gusset area of stockings, was a common decoration for silk stockings in particular. Seen here on a pair of French frame-knit silk stockings belonging to Stephen Girard, the silk embroidery's horizontal lines cover each row of knitting. Stocking. France and Philadelphia; 1800-1831. Frame-knit, silk embroidered on silk. The Stephen Girard Artifact Collection. 0450 (1-2). *Courtesy of Girard History Collections, Philadelphia, PA. Photo by author.*

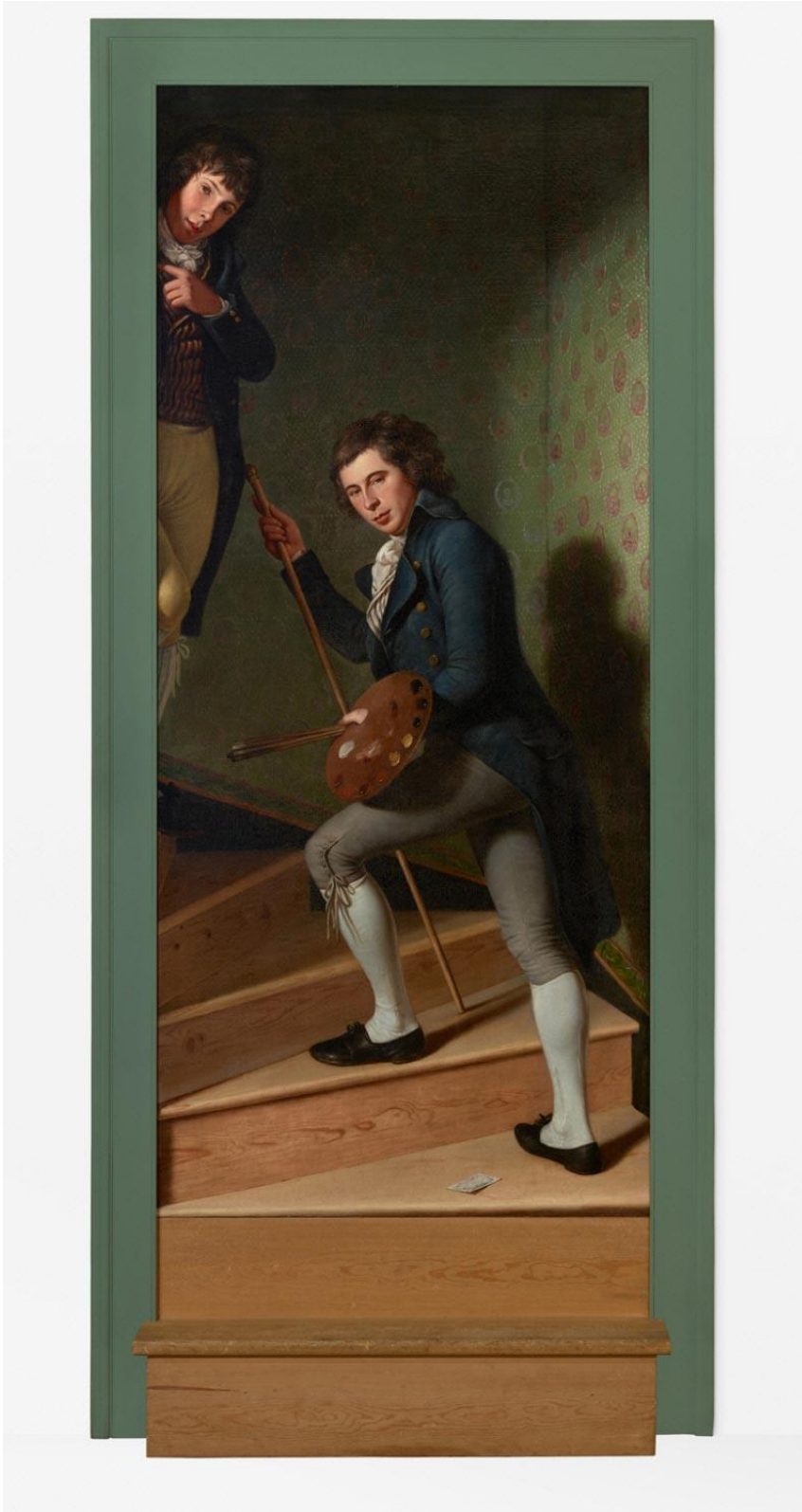


Figure 2 Charles Willson Peale's sons Raphaelle and Titian are depicted in traditional eighteenth-century men's clothing. *Staircase Group (Portrait of Raphaelle Peale and Titian Ramsay Peale I)*, 1795 Charles Willson Peale. Philadelphia, Pennsylvania, 1795. Oil on canvas. E1945-1-1. The George W. Elkins Collection, 1945. *Courtesy Philadelphia Museum of Art.*



Figure 3 Close up of the stockings worn by Raphaelle Peale. Peale painted them to be as realistic as possible, as his primary goal in this artwork was to trick the eye by its realism. These stockings clearly show the silk embroidery known as clocking along the ankle, as well as a recognizable seam along the back of the stocking leg. *Staircase Group (Portrait of Raphaelle Peale and Titian Ramsay Peale I)*, 1795 Charles Willson Peale. Philadelphia, Pennsylvania, 1795. Oil on canvas. E1945-1-1. The George W. Elkins Collection, 1945. *Courtesy Philadelphia Museum of Art.*

Chapter 1

DEITSCHESCHTEDDEL OR GERMANTOWN?: THE HUMAN NETWORKS OF THE GERMANTOWN STOCKING INDUSTRY

“Cheerful we mount, and while the sun ascends,
Reach the high hills where Germantown extends;
Here, various tasks, mechanic Arts assume,
And growing Stockings twirl along the loom.”
-A Journey from Philadelphia to Bethlehem, June 1753

Atop a rocky hill less than 10 miles north of Philadelphia stretched not quite a village, not quite a city, made of stone. To reach it, as Peter (Pehr) Kalm, Swedish botanist and newcomer to Pennsylvania colony wished to do in 1748, one took the Great Road, a notoriously rough route superimposed upon an old path worn down by Indigenous Peoples many years prior. Passing oak and black walnut trees, and few estates save Stenton, the country seat of James Logan, at least the scenery was pleasant, if not the journey itself.⁹ Up the steep incline sat a glimmering settlement with only one street, straddling either side of the Great Road for almost two English miles (figure 4). Roughly 100 two-and-three-story houses made of Pennsylvania’s

⁹ Naaman H. Keyser, C. Henry Kain, John Palmer Garber and Horace F. McCann. *History of Old Germantown: With a Description of its Settlement and Some Account of its Important Persons, Buildings and Places Connected with its Development* (Germantown: Horace F. McCann, 1907), 111.

distinctive Wissahickon schist roofed in white cedar shingles formed Germantown, Pennsylvania's gateway to the west and beacon of German immigration to the east.

Led by Francis Daniel Pastorius in 1683, the first European residents were thirteen Mennonite families from Krefeld, Germany who specialized in linen weaving and had been recruited especially by William Penn to establish a strong, textile-centric community.¹⁰ Out of caves they chose lots for plots and established their community around their only street, with dwellings flush against the edges of the Great Road and farmland and gardens stretching behind them (figure 5). The first families were relatively inept farmers, through no fault of their own; the rocky, steep land made organized agriculture difficult. However, flax was grown successfully, providing raw material for their linen industry. As more immigrating German families joined the settlement, many of whom were skilled craftsmen, Germantown's presence in Pennsylvania colony grew in size and importance. Germantown's proximity to water power on the Wissahickon Creek encouraged the launching of mills, which included the first paper mill in the colonies and the first grist mill in Pennsylvania.¹¹

It was here that Christopher Sauer printed and published the first German-language Bible in North America, and his newspaper with distinctive German type face provided a crucial print source of information for Germans in Pennsylvania and

¹⁰ Ward, Townsend and Pl. Caduche. "Germantown Road and its Associations" *The Pennsylvania Magazine of History and Biography* Vol. 5, No. 2 (1881): 121-140, <https://www.jstor.org/stable/20084498>.

¹¹ Ward and Caduche, "Germantown Road and its Associations," 121-140.

abroad. Religious places of worship included a Quaker meetinghouse, Mennonite meetinghouse, Reformed church, and Lutheran church, the latter being a most impressive stone structure, complete with a bell tower and organ (one of only six in the entire colony in 1752).¹² Germantown's new "glimmer stone" houses and skilled workers lent a cosmopolitan air to the single-street community with its odd mix of small town size, metropolitan mobility and a robust economic system, exuding what Stephanie Grauman Wolf describes as an "urban village."¹³ Besides linen weaving, notable Germantown trades included tanning, shoemaking, coach building and, of course, the frame knitting of stockings. It is on the last and most significant of these trades that this chapter focuses, discussing the fluidity of German-American identity present in Germantown and its impact on the human networks of the Germantown stocking industry.

Visitors to Germantown

Despite Germantown's relatively straightforward name, the majority of its history has been told by decidedly-non German populations. Many of the loudest voices describing early life in Germantown were temporary English residents.

¹² Stephanie Grauman Wolf. *Urban Village: Population, Community, and Family Structure in Germantown, Pennsylvania, 1683-1800*. (Princeton: Princeton University Press, 1976), 33.

¹³ Wolf, *Urban Village*, 17.

Germantown hosted an increasingly large number of seasonal occupants in the eighteenth century, especially in the summer months. Its higher elevation and cool breezes made for pleasanter summer quarters for many wealthier Philadelphians, the majority of whom were English, and many a country estate sprung up to accommodate them. Reflecting this growth, Germantown grew from 100 to 350 houses between 1745-1758.¹⁴ In times of urban trouble, such as the yellow fever epidemics, many families fled up the Great Road to escape disease's deadly reach. Eventually summer residents would have larger political impact, enacting a turnpike bill in 1798 that effectively resigned Germantown to becoming little more than a suburb of Philadelphia.¹⁵ These primarily wealthier, English-speaking Philadelphians have little to contribute to the history of manufacturing within their temporary residence, focusing more on their networks of summer residents and their proximity to the city they had temporarily left.

International visitors to Germantown, however, were eager to witness for themselves the quality of craft and life in this urban village. When Peter Kalm visited in 1748, he observed that the tradesmen "make everything in such quantity and perfect that in a short time this province will want very little from England, its mother country." He was not the only visitor keenly observant of Germantown's industry, and thankfully, for it is partially through the vast number of travelers' descriptions that the

¹⁴ Wolf, *Urban Village*, 14.

¹⁵ Wolf, *Urban Village*, 14.

scale and reputation of the knit stocking industry becomes obvious. In 1751 James Birket described “a very great Trade in making stockings both of thread and woolen yarns which is milled and thereby very warm and suitable to their weather.”¹⁶ When Andrew Burnaby visited Philadelphia in 1759, he noted “the Germantown thread-stockings are in high estimation; and in the year before last, I have been credibly informed, there were manufactured in that town alone above 60,000 dozen pair.”¹⁷ Silas Deane, riding through Germantown in 1775, mentions that the town is “famous for stocking manufacture,” just before the industry’s forced hiatus during the Revolutionary War. But by 1811 Germantown’s industry had rebuilt, for James Mease mentions that within Germantown “there are to be had the well known woolen hosiery, which bear the name of the town, manufactured in the families of the German settlers.”¹⁸ These travelers’ words certainly establish the reputation of the frame-knit stocking industry in Germantown, yet they as well as seasonal Philadelphians are continuously referenced first and foremost before German residents in previous

¹⁶ James Birket. *Some Cursory Remarks Made by James Birket in his Voyage to North America 1750-1751*. (New Haven: Yale University Press, 1916), 68.

<https://tinyurl.com/vytwnll>

¹⁷ Andrew Burnaby. *Burnaby’s Travels Through North America*. Reprinted from the 3rd edition of 1798. (New York: A. Wessels Company, 1904), 93.

<https://tinyurl.com/u4ujb8o>

¹⁸ James Mease. *The Picture of Philadelphia: giving an account of its origin, increase, and improvements in arts, sciences, and manufactures, commerce and revenue. With a compendious view of its societies*. (Philadelphia: B & T Kite, 1811), 351.

<https://babel.hathitrust.org/cgi/pt?id=nnc1.50182016&view=1up&seq=369>

scholarship. Among the four areas where “silences enter the process of historical production” as identified by Michel-Rolph Trouillot in *Silencing the Past*, the historical narratives of Germantown have been most susceptible to limited fact assembly and fact retrieval.¹⁹ To rectify this and ultimately gain a more intimate understanding of Germantown’s eighteenth century stocking industry, look to the Germans.

The Germans of Germantown

The Germans of Germantown are a slippery group to identify. Firstly, “German” is an inadequate descriptor to fully encapsulate the diverse group of immigrants migrating from the multiple German-speaking states of Europe, bringing with them a wide set of beliefs and religious practices.²⁰ Within Germantown alone, German immigrants could be Quakers, Mennonites, Dunkards (also known as German Baptists or Schwarzenau Brethren), Lutherans, or Reformed Church members, with each religion possessing its own set of individual principles and unique characteristics of life, the most obvious being clothing. With that in mind, shared language, both

¹⁹ Michel-Rolph Trouillot. *Silencing the Past: Power and the Production of History* (Boston: Beacon Press, 1995), 26.

²⁰ Even in Europe, the vastly diverse German states did not formally unify until 1871, and their differences are still noticeable in different regions of Germany today.

written and spoken, is the tie that binds this ethnicity together most strongly under the term “German.”

The power of the German language was largely responsible for Germantown’s continued wave of immigration in the eighteenth century. William Penn embarked on three preaching tours of the Quaker faith in German states, specifically recruiting for a settlement in Pennsylvania.²¹ After his first successful campaign, Germantown’s reputation of success and religious tolerance was encouraged and exalted along German-speaking networks, lent legitimacy by the presence of Christopher Sauer’s newspaper and printshop.²² Germantown became the focal point for German immigration to Pennsylvania colony, and almost 70,000 immigrants entered Philadelphia prior to the Revolution, at a rate that concerned both German governments back in Europe and local government in the colony.²³ Trends in German settlement in the colonies show that Germans gravitated towards land among fellow Germans, rather than random westward expansion.²⁴ Before ever crossing the Atlantic, German immigrants to Pennsylvania set their sights not on Philadelphia, but on Germantown, to join communities who spoke like them and to them.

²¹ Keyser, *History of Old Germantown*, 27.

²² Wolf, *Urban Village*, 13.

²³ Keyser, *History of Old Germantown*, 23. Steven M. Nolt *Foreigners in Their Own Land: Pennsylvania Germans in the Early Republic*. (University Park: Pennsylvania State University Press, 2002), 12.

²⁴ Wolf, *Urban Village*, 14.

Besides a shared language and ethnic experience, eighteenth-century Germans in Germantown simultaneously benefited from cosmopolitan proximity as well as connection to the German networks that stretched further west into Pennsylvania and down the Great Wagon Road into Maryland and Virginia. Urban proximity was physically apparent; from the center of Germantown, Elizabeth Drinker notes watching a fire rage in the city below in 1791, and eighteenth-century Germantown real estate advertisements boasted “an extensive view of the Jerseys and part of the City of Philadelphia.”²⁵ Even with poor roads, Philadelphia was not too far off. Facing the east, rural German communities as well as larger communities like Lancaster and Reading would commonly bring their business and raw materials only as far as Germantown to avoid the last few miles of rough road. Large general stores sprung up in Germantown to accommodate this, and commercial activity grew.²⁶ For a short period of time, German residents had the best of both worlds.

This was not to last. Germantown flooded with wealthier Philadelphians and businesses catering to at first seasonal, then permanent residents looking to preserve the natural landscape that initially attracted them to the area. Preservation meant political interference. Benjamin Chew, a wealthy English Quaker and transplant to the community, was President of the Germantown and Perkiomen Turnpike Road Company. The 1798 turnpike bill transformed the rough dirt road through

²⁵ Wolf, *Urban Village*, 182.

²⁶ Wolf, *Urban Village*, 24.

Germantown into a passable (and profitable) stone-covered turnpike for year-round travel, with the majority of subscribers to the company Philadelphians.²⁷ The new turnpike succeeded in strengthening the route between Germantown and Philadelphia to encourage daily commutes, but the allure of larger marketplaces in Philadelphia coaxed wagons laden with raw materials from western Pennsylvania to pass through Germantown without stopping on the new road. The commercial hub Germans had enjoyed in Germantown disappeared, albeit not without complaint. German tradesmen expressed their dissent when the bill was introduced to state legislature, well aware of the impact the bill would make on their businesses, to no avail. General stores dwindled, and German residents concentrated more on craft and manufacturing from that point forward.²⁸ The new Germantown Turnpike changed the monetary value of German networks, and the Germantown stocking industry noticeably shifted to cater to an English-speaking business network. This is not to say that German networks were abandoned; rather, they were reprioritized. English-speaking networks became the more public-facing, legal, and formal face of the industry, while private, informal, and internal industry networks remained German.

²⁷ The act did specify advertising in a German language newspaper in addition to the English ones, but subscriptions held by Germans were almost nonexistent. James T. Mitchell and Henry Flanders. *The Statutes at Large of Pennsylvania from 1682-1801*, Vol. XVI, 1798-1801. (Harrisburg: Clarence M. Bush, 1896), 71.
<https://tinyurl.com/tmmcabk>

²⁸ Wolf, *Urban Village*, 15.

To many, the circumstance of German immigrants' redirected focus on the English-speaking networks of economy reads as a concession for assimilation. Germans in Germantown were not victims, per se, in this situation, but neither did they go peacefully, as Wolf argues in *Urban Village*.²⁹ In her data collection, assimilation was hard for Wolf to measure, partially because the diversity of German-speaking citizens in Germantown is so extensive that patterns of national or ethnic resistance are difficult to trace. Their heterogeneity is also reinforced by the fact that Germantown never retained an explicitly "German" neighborhood of the community; their homesteads were evenly mixed with other ethnicities and their businesses. In *Foreigners in Their Own Land*, Steven M. Nolt analyzes Pennsylvania German identity in the Early Republic to better understand the characteristics of German immigrants once they arrived in America. Early America's first group of German immigrants, unlike later groups from Germany in the late nineteenth century, self-identified as Americans, rather than German-Americans.³⁰ Nolt argues that "in the process of negotiating their place in national political culture, Pennsylvania Germans were not maintaining a distant heritage so much as formulating new means of defining their distinction."³¹ From Wolf and Nolt's data, in addition to the evidence Germantown's stocking industry left behind, dual usage of English speaking and

²⁹ Wolf, *Urban Village*, 127-154.

³⁰ Nolt, *Foreigners in Their Own Land*, 2.

³¹ Nolt, *Foreigners in Their Own Land*, 43.

German speaking networks became a quality of identity, not a consequence of integration. For Germans in Pennsylvania, “creating an ethnic identity and becoming American are integrally related processes,” and a core facet of this American identity was versatility of language.³²

The German Language and American Duality

Evidence for the private and public nature of German and English networks in the Germantown stocking industry is ample, although they must be cautiously evaluated for the amount of agency behind them. Minority documents are notoriously anglicized by the systems of power that produce them, including tax lists, wills and probate inventories, census records, and marriage records. In James C Scott’s *Seeing Like a State*, he investigated the history of names as a governing system meant to categorize, measure, and ultimately control its citizens through data collection. The invention of the surname correlates with the development of written official documents and is the first document for identity before photographs.³³ But legal names are not the only name a person possesses, and having multiple names or changing a name can signify a particular social setting, speaker, or moment in time.

³² Nolt, *Foreigners in Their Own Land*, 3.

³³ James C. Scott. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1999), 71.

Scott emphasizes that names are “key navigational aids,” and in the circumstances of my research around the human actors involved the Germantown stocking industry, names were a crucial, historically underestimated form of data. For example, a frame knitter residing in Germantown was named “John Dedier” in a tax list and “Johann Detier” on his probate inventory. The anglicization of his name from Johann to John masks his Germanness, but also reflects a division of a public-facing English network and the more private German network.³⁴ Whether Johann Detier had the agency to choose his name for each instance is up for debate, but regardless the alternating German and English versions of names of a single Germantown frame knitter require heightened scrutiny of these primary sources. I suspect the presence of anglicized names also contributed to prior scholarship that closely correlates the Germantown stocking industry to the English stocking industry, assuming that frame operators with names like John must be English.

For other evidence, like the account book of Abraham Gehman, a German frame knitter based in Douglass Township, the conscious use of languages betrays the versatility of his identity. The accounts in the beginning years of his business are all written in German, as he works primarily with German-speaking customers and general stores, and German networks for supply of frame parts and stocking thread.³⁵

³⁵ Abraham Gehman. *Account book 1845-1868*. Account book. Douglas Township, Pennsylvania. Private Collection.

But after a change in his business structure in the latter half of his account book, with stores closer to Philadelphia and new customer networks, his account book's script abruptly changes to English (figure 6). The startling change in language, and the ease in which Gehman changed his network, lends to the fluidity of bilingual German frame knitters as they adapted to whatever new business setting in which they were operating. In the words of Bernard Herman in his work analyzing grave markers, "being German in British America was a selective engagement."³⁶ With a sensitivity to overlapping archival sources due to anglicized names and a commitment to exploring both German and English networks for evidence, I have gathered my data on the humans involved in the Germantown stocking industry. This data identifies many of the trade's human actors, their organization, and their presence on the landscape of Germantown.

Industry on the Eighteenth-Century Landscape

The Germantown stocking industry was easily the earliest, largest, and most organized group of frame knitters in the colonies, although a single frame knitter cannot definitively claim to be among the first practicing in early America. It is generally agreed that John Camm, an Irish frame knitter in the Philadelphia area who

³⁶ Bernard L. Herman "On Being German in British America: Gravestones and the Inscription of Identity" *Winterthur Portfolio* Vol. 45, No. 2/3 (Summer/Autumn 2011), 195-208.

advertised in *The American Weekly Mercury* in 1723 may have been the first, although the nature of his advertisement suggests a history of earlier work. Camm claims that “Mathew Burne of Chester County served...two years (that is 10 or 12 months at Stocking Weaving) and the rest at other work, during which time John Camm’s Stockings bore many reflections and now the said Mathew Burne goes a bout selling Stocking in John Camm’s Name as though they were his make, which is false and not true.”³⁷ Burne could have been mimicking the style or pattern of his stockings, even forging Camm’s maker’s mark on the stocking welts, but regardless the advertisement confirms that a stocking weaver in the Philadelphia area was operating and taking apprentices as early as 1721. Camm’s Irish identity is unsurprising but also not a definitive characteristic of his work. While Ireland did have a frame knitting industry, as did many other European countries, Irish frame knitters were not congregating together after their immigration to North America. Individual frame knitters in new communities would have been more common, especially in the colony of Pennsylvania, and frame knitters were especially sought out. For example, an advertisement of land for sale with a stone shop on the premises in Hatborough, Pennsylvania includes a note that “a stocking weaver, taylor, and shoemaker are very

³⁷ John Camm. “Whereas Mathew Burne of Chester County.” *American Weekly Mercury* no. 212 Philadelphia, Pennsylvania, December 31, 1722-January 7, 1723. Hathi Trust Digital Library.

much wanted in this town.”³⁸ Given this, many smaller communities might have had one or two frame knitters among them, but Germantown’s numerous population of stocking weavers remains completely unique.

The exact beginnings of Germantown’s industry remain hazy. In a 1724 letter, Christopher Sauer wrote back to his friends and family that “there are no stocking weavers at all in this country. Stockings are therefore dear. A Thaler is paid to knit a pair of stockings and the knitters have plenty to do.”³⁹ Sauer’s words served as sufficient persuasion for German immigrants with these skill sets to cross the Atlantic at some point between 1724-1750. The earliest Germantown frame knitter known by name was Johann Detier (John Dedier), who advertised in Christopher Sauer’s newspaper *Die Germantäuner Zeitung* in 1752, noting that his eighteen-year-old apprentice, Zacharias Jordan, had run away.⁴⁰ But there were certainly frame-knitters years prior to Detier operating in Germantown before that advertisement who had built up the industry, as travelers arriving to Germantown as early as 1748 mention Germantown’s established reputation. While the most available data could be procured

³⁸ Advertisement, *The Pennsylvania Gazette*. December 23, 1762. Accessible Archives.

³⁹ Christopher Sauer. “An Early Description of Pennsylvania; Letter of Christopher Sauer Written in 1724” *Pennsylvania Magazine of History of Biography* Vol. 45, No. 3 (1921), 243-254.

⁴⁰ Edward W. Hocker. *Genealogical Data Relating to the German Settlers of Pennsylvania and Adjacent Territory From Advertisements in German Newspapers Published in Philadelphia and Germantown, 1743-1800*. (Baltimore: Genealogical Publishing Co., 1980), 32.

post-1750, the credit for the birth of an industry resides with those unnamed German frame knitters who took a chance on new life and work in Pennsylvania colony with their frames in tow.

Table 1 Identified Germantown Frame Knitters Operating in the 18th Century

<i>Name</i>	<i>Dates Active in Record</i>	<i>Family Members/Apprentices</i>
Johann Detier (1712-1789)	1752-1787	Wife, Apprentice Zacharias Jordan
Alexander Mack (1712-1803)	1758-1801	Wife Elizabeth, 6 sons, 2 daughters, Apprentice Wilhelm DiSchong
Godfried (Godfrey) Miller (1730-1803)	1763-1766	2 brothers, Samuel and Gottlob
Philip Kerner	1761-?	Unknown
Isaac Roushe	1769-1804	Unknown
Mathias Haas (Hess)	1769-1790	1 Wife, 2 sons, 2 white men
Martin Beck (?-1785)	1769-1785	Unknown
Casper Windish	1769-1787	Single
Herman Gisle (Geisle)	1769-1787	1 wife, 1 white woman
Christopher Jacoby	1769-1780	Unknown
Johannes Godfrey Bockius (1727-1780)	1769-1780	1 wife, 4 sons, 1 daughter
Daniel Rees	1769-1786	Unknown
Jacob Rees(e)	1774	Unknown
Lawrence Rees	1774	Unknown
Peter Dedier (Detier)	1774-1790	1 wife, 1 white woman, 2 white boys
John Lamb	1774-1790	1 wife, 1 white man, 1 white woman
John Dolisang/ Dulison	1774-1780	Unknown
Bernard Mathias	1779-1787	Unknown
Francis Bockius (1754-1827)	1780-1827	1 wife, 4 sons, 3 daughters
Frederick Colly	1780-1790	1 wife, 1 white woman
George Smith	1780-1790	1 wife, 1 white woman , 1 white boy
Philip Somerlat (?-1811)	1780-1790	1 wife, 2 white women
William Clepper (Klepper)	1780-1790	1 white woman
Elias Rickert (Recker)	1780-1790	6 white women, 2 white boys
Jacob Kline	1780-1790	3 white women
Andrew Reyman	1782-?	Unknown
Jacob Beck	1782-?	Unknown
Frederick Haas	1782-1790	1 white man, 3 white boys, 2 white women
Henry Simon	1786-1787	Unknown
George Brentel	1786-1787	Unknown
Philip Smith	1787-1790	1 wife, 4 white boys
Conrad Philips	1787-1807	1 wife, 1 white women, 2 white boys
Total male Stocking weavers: 32		Family members/Apprentices: 77
Germantown Industry Contributors:109		Women/daughters: 39

		Men/boys: 38
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Table 1 displays all confirmed Germantown male frame knitters producing in the eighteenth century, numbering 32 in total. Wolf and Halpern have both compiled less-complete data around eighteenth-century occupations in Germantown, with Halpern focused more explicitly on frame knitting. Germantown was incidentally the only area of Philadelphia County outside the city to list its residents by occupation on tax lists, making this data relatively easier to procure than from other geographic areas.⁴¹ But to understand the scale of production in this cottage industry, more holistic gathering and understanding of this data was needed, which I have attempted to provide in light of several important qualities of the industry itself. First, frame knitting was not usually a life-long occupation, nor was it a sole way of providing income. Thus, many Germantown stocking weavers might still advertise that livelihood but on tax records identify themselves in other occupations, such as general storekeepers or apothecaries, for example. Secondly, the frame knitting industry developed integrally with the linen weaving industry in Pennsylvania; systems already existing to process raw materials, dye, and spin would have been logical for a frame knitter to operate alongside, and many of frame knitters also did some spinning and dyeing of their own. Martin Beck, for example, was listed as a Germantown dyer on tax lists for the majority of the eighteenth century, but his probate inventory reveals all

⁴¹ Wolf, *Urban Village*, 10.

the implements of a frame knitter.⁴² Others were more incorrectly conflated; Peter Dedier was listed as “stocking weaver” in 1780, then “weaver” in 1782, perhaps due to an unfamiliarity with the differences between a knitting frame and a loom on the part of the person compiling that data. The two industries were often conflated in the eyes of consumers as well; linen weavers and frame knitters would often travel together to Philadelphia to sell their products on the northern street corner of Second and Market.⁴³ Regardless, the industry is entangled with all other textile production in the community, and difficult to delineate. Finally, the business of frame knitting was a family affair. As I will expand upon in subsequent chapters, wives and children all had crucial roles to play in the cottage industry, and their work has never been recorded. Germantown consistently had a balanced population of men and women, and children generally numbered the amount of adults.⁴⁴ Through a combination of the 1790 census and genealogical research, I have been able to identify many of the family groupings where these stockings were created, which drastically expands our understanding of the industry’s scale.

The account book of Alexander Mack, Jr., a frame knitter and co-minister of Germantown’s Brethren congregation from 1758 to 1803 reflects many of these

⁴² Martin Beck. “Probate Inventory of Martin Beck.” Philadelphia Register of Wills #267 of 1785.

⁴³ Ward and Caduche. “Germantown Road and its Associations,” 121-140.

⁴⁴ Wolf, *Urban Village*, 45.

trends.⁴⁵ Mack's occupation was unlisted on every Germantown tax list in which he appeared, yet his account book undisputedly proves that the bulk of his income was made by frame knitting, in addition to some dyeing work. His list of direct customers is overwhelmingly German, including German Brethren and German general store owners in New Jersey and western Pennsylvania.⁴⁶ Mack and his wife Elizabeth, married in 1749, raised two sons and six daughters in their household who most certainly contributed to his frame knitting work in explicit roles and supportive domestic labor. Mack also had a short-term apprentice, named Wilhelm DiSchong, who only worked about two years before moving on to Ephrata, Pennsylvania. Mack's will even specified that DiSchong could have first choice of his knitting frame if he desired after his death and that "he may pay whatever he sees fit."⁴⁷ Mack's account book, the contents of which are further analyzed in Chapter 2, is the only known extant account book of a Germantown frame knitter, although misclassification might

⁴⁵ Immigrating to Philadelphia in 1729 and heading directly to Germantown, Mack continued along the Great Road to join Ephrata Cloister and spent much of his earlier years there until the Eckerlin Brothers exited over Conrad Beissel's abrasive leadership. The Eckerlin settlement in Virginia was not to his liking and he claims to have foreseen an impending Native American raid on the group in a dream, so he returned to Germantown for good in 1747.

⁴⁶ Donald F. Durnbaugh and Edward E. Quinter, editors. *The Day Book/Account Book of Alexander Mack, Jr. (1712-1803)*. (Kutztown: The Pennsylvania German Society, 2004), 125.

⁴⁷ Durnbaugh and Quinter, editors. *The Day Book/Account Book of Alexander Mack, Jr. (1712-1803)*, 177.

be to blame.⁴⁸In 1774, Mack's family of ten occupied a stone dwelling on five acres in the northeastern corner of Germantown Township where Germantown Turnpike and Bethlehem Turnpike intersected. The size and location of their home is larger than others as the majority of frame knitters in Germantown were paying ground rent and residing in rented dwellings before the Revolutionary War.

Johannes Godfried (Godfry) Bockius occupied and operated a general store on the southern end of the township, with a storefront facing out onto the street of Germantown Turnpike. He similarly was never listed as a frame knitter on any tax lists, but his probate inventory and wills reveal the equipment necessary to be one, even specifying that his oldest son Frances could choose from any of his stocking frames after his death.⁴⁹ His wife Philypine and his five children Mary, Jacob, Godfried, John and certainly Francis assisted in stocking production on his multiple frames, with Francis continuing the business after his father's death in 1780.⁵⁰ Bockius' commercial networks would have only bolstered the reach of his stockings

⁴⁸ The Day Book/Account Book of Alexander Mack, Jr., translated and published by the Pennsylvania Historical Society, categorizes Mack's occupation as a weaver, which is the same confusion displayed in period sources. Contemporary confusion around weaving and frame knitting makes archival evidence difficult to trace.

⁴⁹ Godfried Bockius. "Will of Godfried Bockius." Philadelphia Register of Wills #275 of 1780.

⁵⁰ Given that there is archival evidence in England to support women operating knitting frames, even though it would be rare, it is not out of the realm of possibility that women in the families of Germantown frame knitters also operated frames but escape archival record.

for sale. Both Mack and Bockius' stocking weaving careers were substantial but escaped prior notice due to their other documented occupations.

Germantown's stocking production is a curiously invisible operation on the landscape, despite the spotlight of spectacle the industry received. Land ownership and ground rent information included on tax lists gives more clarity to where this industry was actually located, and the types of structures in which frame knitters were living and working. Given the unusual single street layout of the community, as well as the reality of land ownership, there is no obvious cluster of frame knitters physically working alongside each other. The landscape of the Germantown stocking industry by 1777 was relatively intermixed among the township, with the majority of the knitters renting or owning less than two acres of land in total over the course of their careers (fig. 4). The eighteenth-century Germantown stocking industry, primarily a cottage industry, would have been primarily done behind closed doors, in the homes of the frame operators. A frame knitter needed sunlight to operate, so likely would have placed his frame on the first floor of his home, by a window. The division between public and private space might have only been a window pane. Through these panes, their work garnered attention; the sheer number of travelers coming to Germantown to see the stocking industry guaranteed some form of public scrutiny. Although the frame's mechanical technology had existed for well over a hundred years, not everyone had been exposed to the novelty of the knitting frame's mechanic. Rev. Ezra Stiles, visiting Philadelphia in 1754, went to view a 'stocking frame knitting

machine,” calling it a “most curious invention!” and was so taken with the experience that he went back two days later to buy a pair of stockings from its operator.⁵¹

Post-War Industry and the Rise of Germantown Hose

After the industry’s forced hiatus due to the Battle of Germantown, frame knitting in Germantown was slower to recover than advocates of new domestic enterprises in the Early Republic preferred. To those with vested interest in the manufacturing health of the new nation, such as Tench Coxe and George Logan, the earlier success of Germantown stockings was the prime example of superior American manufacturing. The obvious scapegoat was overseas competition; Logan blamed the late eighteenth-century decline on imported stockings and Coxe used rhetorical tactics aimed at shaming new Americans into loyalty to their industry.⁵²

⁵¹ Ezra Stiles. “September 28-30th 1754.” *Proceedings of the Massachusetts Historical Society*. Second Series, Vol. VII. (Boston: The Society, 1891-1982), 341.

⁵² For example, in 1804 Tench Coxe describes the Germantown stocking making industry: “There is yet no other market for the Germantown hosiery, but what is brought in three or four baskets to the gutter at the corner of Second Street. Formerly, an eligible stand was assigned them; but the trade getting every year more and more insignificant, they were obliged to abandon that situation, and give way to the vendors of gingerbread, confectionaries &c manufactories which minister more immediately to the wants of agriculture. In short, if it had not been that the present administration have purchased these stockings for the use of the army, half of the frames in Germantown must have been unemployed. Our information on this business is so correct as to enable us boldly to pronounce, that if no further encouragement be given to the Germantown stocking business, it will die away with the old Dutchmen that are

The reality, I argue, is actually focused on the dramatic shifting of the industry's organization.⁵³ By 1800, almost half of the original German frame knitters had died, seriously reducing the number of skilled workers left in the community who exercised German networks (although Tench specifically mentions Isaac Roushe as one of the remaining Germans still supplying western Pennsylvania with Germantown stockings).⁵⁴ Recruitment from Germany decreased and was replaced by a wave of English immigrant frame knitters from saturated stocking industries in Nottingham

employed in it...Isaac Roushe, indeed, still sends a few goods up the country, but not one tenth part of what he formerly did. It is but lately that two men, one a frame-smith; the other a sinker maker, hearing of the far-famed Germantown hosiery, and imagining that it was a place like Nottingham or Leicester, which contain each of them, 10,000 stocking frames, laid out all their little stock, and left their families and friends to go and work their own trades in a land of liberty. When they arrived on the Atlantic shores, still they were not undeceived; everybody told them that Germantown was the only place in America for the hosiery business. This was true, and yet when they came there, what must be their astonishment, when they found that all the frames in the place, or even in all Pennsylvania, would not be sufficient for the stock of one respectable hosier in the town of Nottingham, and that both masters and journeymen were in better circumstances in England than they were in here." Tench Cox. *An Essay on the Manufacturing Interests of the United States* (Philadelphia, 1804), 28.

⁵³ Germantown's number of eighteenth-century frame-knitters may seem low compared to quoted yearly outputs of stockings, especially during the Revolutionary War: 100 frames were documented in Germantown during British occupation to roughly 34 frame knitters (although the sons of those men would certainly have operated some of these, and it was not uncommon for frame knitters to own multiple frames). A smaller concentration of Philadelphia-based frame knitters (12 in total in 1785) based in Mulberry Ward, north of the city, may also have lent their labor and frames to the Continental Army's cause. But it may also prove true that the number of idle frames suggest even more Germantown frame knitters that escape public record altogether.

⁵⁴ Coxe, *An Essay on the Manufacturing Interests of the United States*, 28.

and London, lured by the promise of an equivalent American industry awaiting them in Germantown. They would find they were sorely mistaken, but nonetheless they set up their businesses. The technology behind the industry was also poised for change. Between 1790-1830, Philadelphia's textile industries in general eyed new technology from England and implemented as they were able.⁵⁵

Germantown's new technology came in the form of English made knitting frames brought by English immigrants, and with them came an alternative organizational approach to the industry. The first knitting mill in America, instigated by Thomas Fisher in 1827, brought existing German frame knitters and new English frame knitters under the same roof, with mills more firmly established by 1830. That organizational change is most notably recognized in the change of terminology, from "stockings" and "stocking weavers" to "hose" and "hosiers," and launched a different era for the Germantown brand.⁵⁶ Fundamental differences in English and German frames, most notably the number of foot pedals and the circular mechanism to which they were connected, would have made the technological execution and outputs of Fisher's knitting mill difficult to homogenize (figure 7).⁵⁷ Fisher's solution was to

⁵⁵ For data on general textile technological diffusion (excluding data on frame-knitting technology) for Philadelphia between 1790-1830, consult David Jeremy's *Transatlantic Industrial Revolution: The Diffusion of Textile Technologies between Britain and America, 1790-1830s*.

⁵⁶ More explanation on this transition resides in Chapter 3 of this thesis.

⁵⁷ Chapter 2 of this thesis focuses on the technology of the knitting frame in detail, and more technical analysis resides in the appendices.

purchase more English frames which he controlled, resulting in a system of production most similar to the stocking industry in England after 1830.⁵⁸ In doing so, Fisher put in motion the same erasure that Germans in Germantown have received in general from historical scholarship by focusing more on English networks. By 1860 many Germantown knitting mills had converted to steam power, but the transitional period from an industry run primarily by German frame knitters inside their homes to a combination of German and English frame knitters with varying qualities of machinery under one roof was, most assuredly, far from smooth.

For eighteenth-century Germans in Pennsylvania, their selective engagement with German identity and English-speaking networks does not detract from the fact that they viewed their life in the colony as something entirely new, “neither English or German,” which developed into an American identity shortly after the Revolutionary War.⁵⁹ A Germantown-made stocking was an American-made stocking, before their government made it an example of successful domestic manufacture. That identity shapes our understanding of the Germantown stockings’ creation and their movement onto the feet of early Americans, both English and German.

⁵⁸ John J. Macfarlane. *Manufacturing in Philadelphia 1683-1912*. (Philadelphia: Philadelphia Commercial Museum, 1912), 16.

⁵⁹ Cooper, Wendy A. and Lisa Minardi. *Paint, Pattern, and People: Furniture of Southeastern Pennsylvania, 1725-1850*. Philadelphia: University of Pennsylvania Press, 2011), 28.

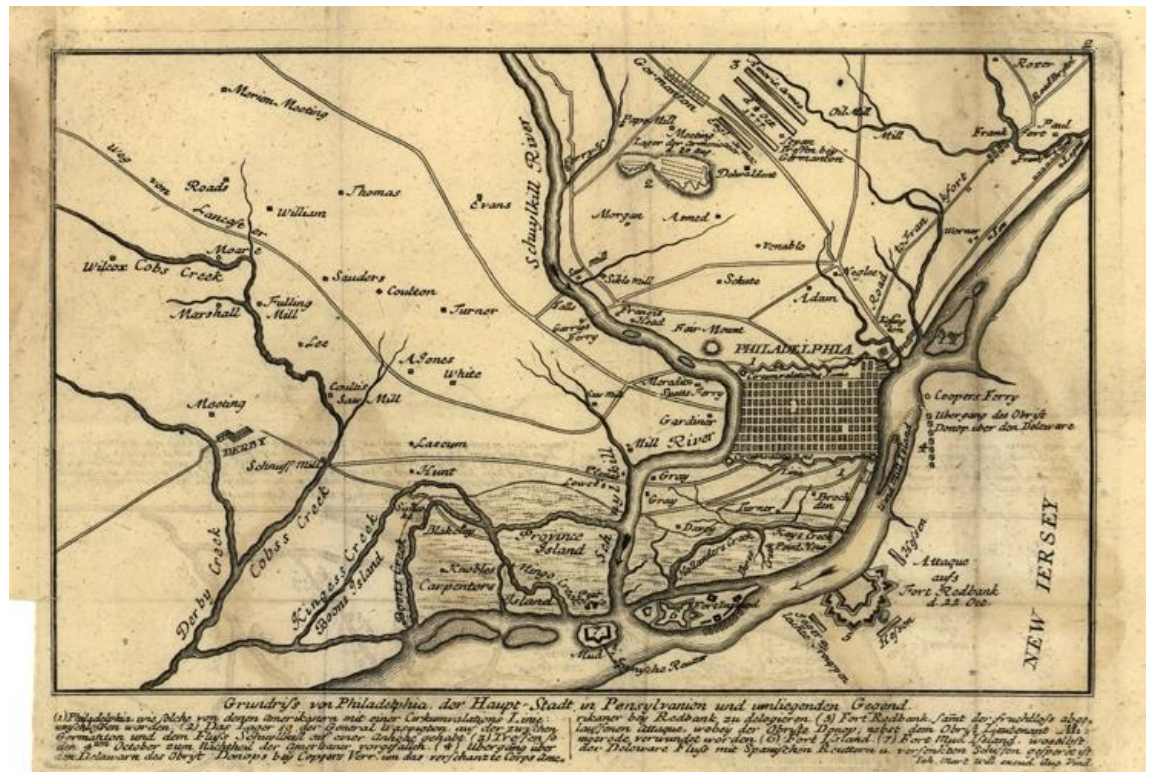


Figure 4 This map shows the close proximity of Germantown to the growing city of Philadelphia and the main route of travel along the Great Road, which ran directly through the town. Will, Johann Martin. *Zehn Karten und Ansichten den Schlachtfelden des amerikanischen Unabhängigkeitskrieges in den Staaten Pennsylvanien und New York*. (Augsburg, Germany: c. 1777.). Map. <https://www.loc.gov/item/2003630399>. Courtesy of Library of Congress, Geography and Map Division.

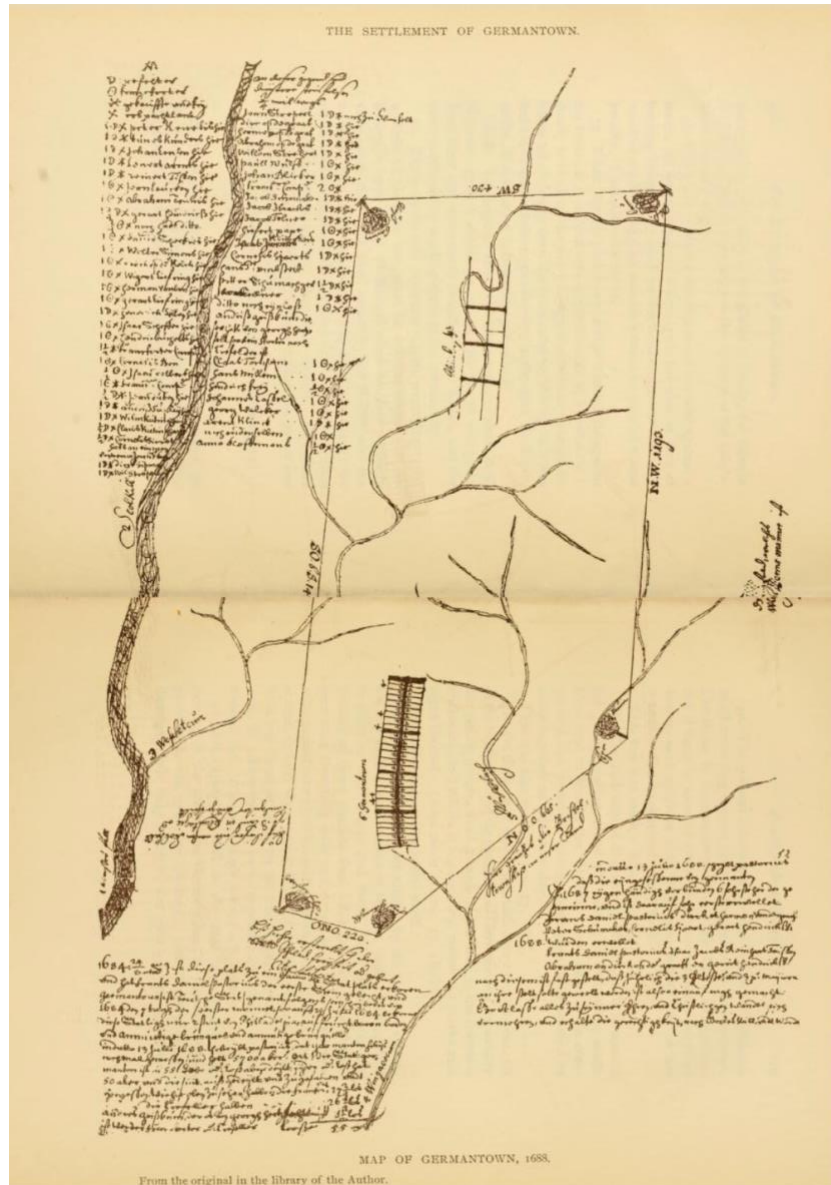


Figure 5 This map, drawn by Germantown founder Francis Daniel Pastorius in 1688, depicts the original settlement's boundaries and plots. Each corner of the settlement is marked by a tree, and the first settlers' plots are laid out alongside a Lenni Lenape trail that would one day become Germantown Turnpike. Pastorius, Francis Daniel. *Germantown Original Settlement Map*. 1688. From Pennypacker, Samuel W. *The Settlement of Germantown, Pennsylvania, and the beginning of German emigration to North America* (Philadelphia, University of Pennsylvania Libraries, 1899), 278. This image is in the public domain.

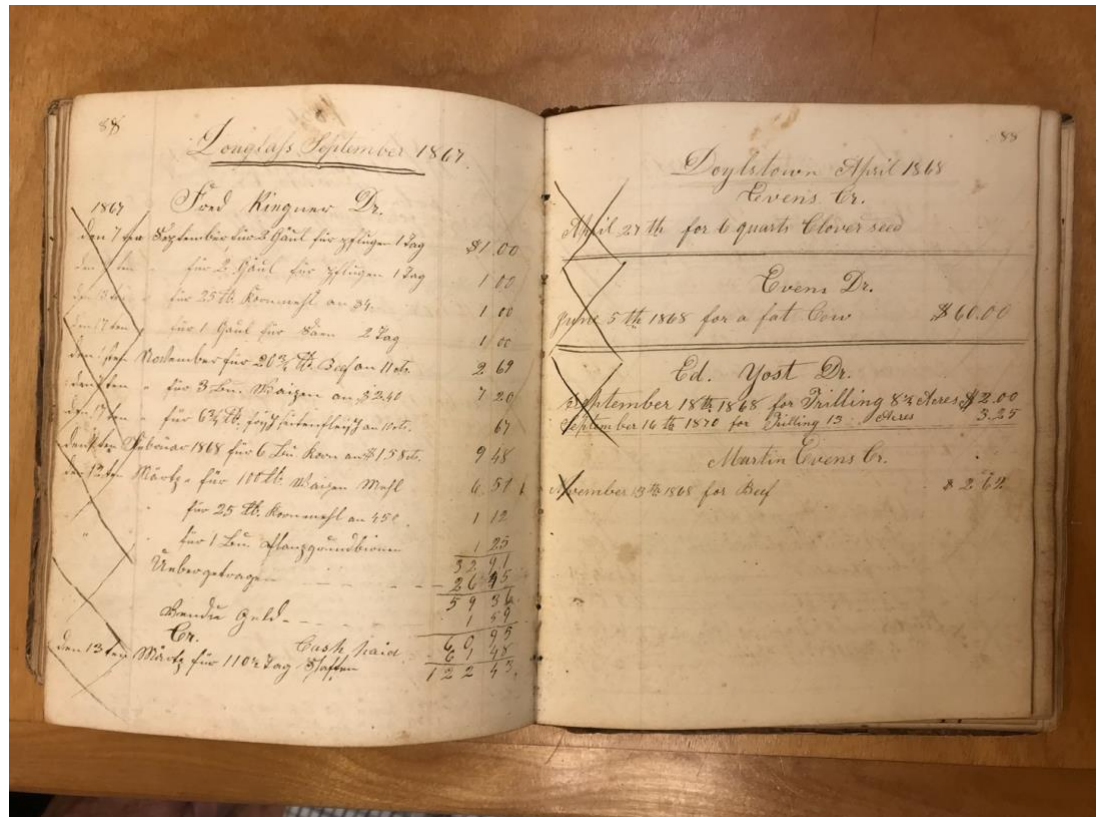


Figure 6 The account book of Abraham Gehman, a frame knitter operating in Douglass Township and then Doylestown between 1845-1868. The left page is his business records in Douglass Township, written in German, but the right page is written in English after moving to Doylestown. Account book. Courtesy of Alan Keyser. Photo by the author.

1777 Map of
Germantown
Frame Knitters'
Residences

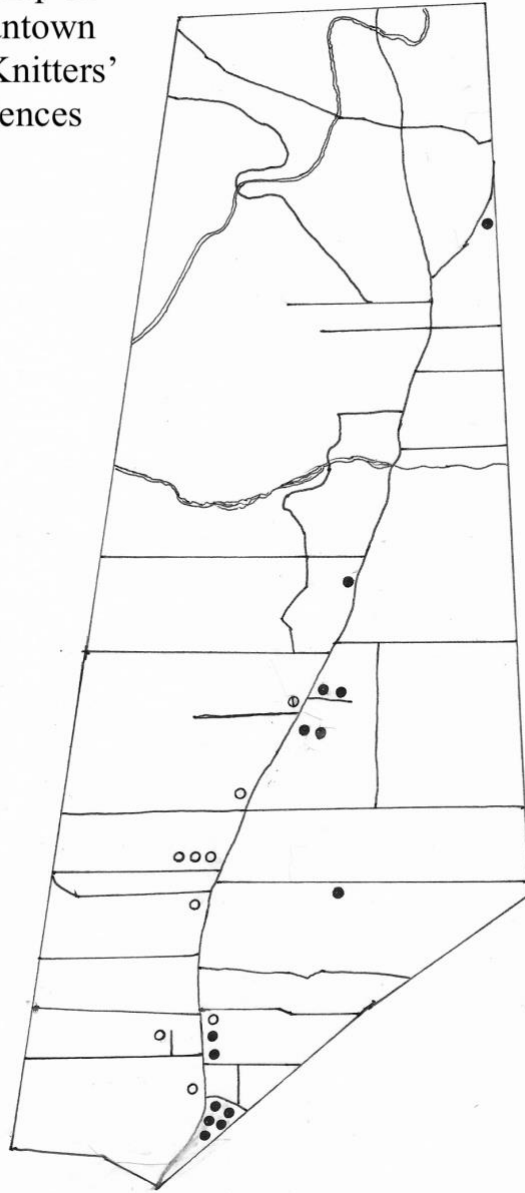


Figure 7 The map above displays the location of active Germantown frame knitters in Germantown Township as it looked in 1777. For those who were traceable, their scattered presence on physical landscape shows that they were not living closely in a specific area of the community and producing stockings. They were also almost evenly split between those who owned their own land and those who paid ground rent, depicted by black and white markers, respectively. "Germantown Frame Knitters in 1777." *Map drawn by author.*

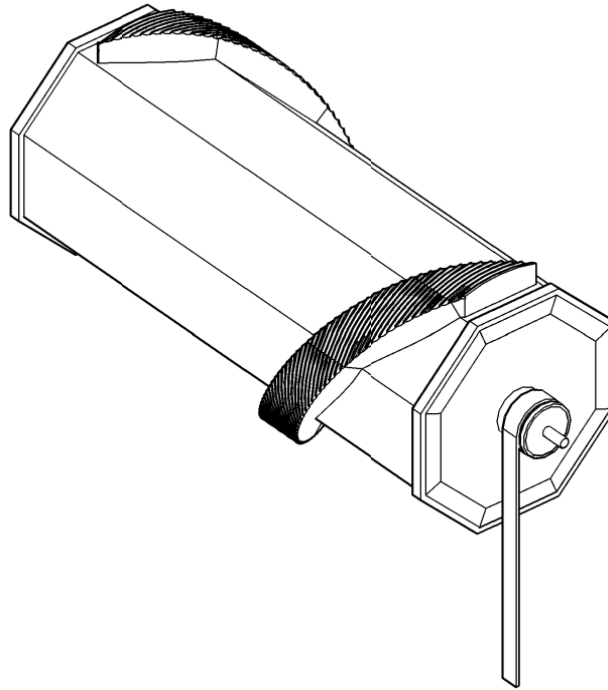


Figure 8 The above diagram illustrates a major difference in the mechanisms of German frames and English knitting frames. German frames have a cylindrical component directly under the knitting frame carcass which is controlled by the foot pedals, and has thin grooves along the curved wooden strip wrapped around the base. These grooves correspond with thin wooden pieces called jack sinkers. When a frame knitter wished to place a new row of thread along the needles from one side of the frame to the other, he would also press down on the corresponding foot pedal. This pedal would rotate the cylinder, pressing each groove into the jack sinker above them, which forced the sinkers to tip forward and interlock the fabric around each needle. This mechanism has never been illustrated prior; Diderot and others illustrated English frames instead. “Mechanical Differences of Germantown Frames from English Frames.” *Courtesy of James Kelleher.*

Chapter 2

FROM FRAME TO FEET: CREATION OF A GERMANTOWN STOCKING

When 33-year-old frame knitter Godfrey (Gottfried) Miller first laid eyes on Philadelphia while onboard *The Chance* in 1763, his thoughts were likely preoccupied with two large crates below deck. Within them rested two illegally transported knitting frames, which, if safely unloaded and passed through customs inspection without detection, would ensure he could continue practicing his trade in the colonies. Godfrey was no stranger to the logistics of immigration; he had spent the last fourteen years of his life on the move, trying to make a living by frame knitting. His initial training had taken him from the knitting frame of his father in Gruna, Germany, to an eight month, guild-approved apprenticeship in Eckartsberga, where he was found to be “true, industrious, and honest.”⁶⁰ He had traveled to Bern, Switzerland, then Lyon, France, and finally London to meet his two brothers Samuel and Gottlob, who had joined the Company of Framework Knitters. While in Lyon, Godfrey had purchased two knitting frames, and those two frames made it onboard along with the three brothers on *The Chance* sailing from Cowes, England. England zealously protected their stocking industry’s superior technology and banned the export of any knitting frames from the country; the punishment, if caught, was a fine up to £500. Their risk paid off. The Miller brothers arrived in Philadelphia with the machinery necessary to begin their trades anew, where demand for stockings was high, but the workforce was less

⁶⁰ “Godfrey Miller Eckartsberga Guild certification, 1749.” Godfrey Miller Family Collection. Winchester-Frederick County Historical Archives.

saturated than Europe's. Before embarking, Godfrey Miller signed an oath of abjuration on behalf of the family, shedding any allegiances to their German past in the eyes of the law.⁶¹ Next stop: Germantown.

Written oaths notwithstanding, the Miller brothers were German, and they did not forget this once they arrived in Philadelphia. Just ten miles from the city's center, Germantown shone like a beacon to German immigrants entering Philadelphia, especially to those who could knit stockings. Due to a wildly-successful marketing campaign by William Penn and Francis Daniel Pastorius, Germantown was often the destination German immigrants aimed for when they first arrived.⁶² The Miller brothers likely went there because Germantown presented not only immediate work, but also a community of established German immigrants who could offer familiarity, a shared language, a religious community, and guidance for their next steps.

Godfrey Miller stayed in Germantown for three years, before moving one final time to Winchester, Virginia, establishing a family and continuing to practice his frame knitting trade until he died.⁶³ His knit waistcoat, currently in the Winchester-Frederick Historical Society, was likely frame knit for himself to conclude his two

⁶¹ Ralph Beaver Strassburger. *Pennsylvania German Pioneers Vol. 1 1727-1775*. (Kutztown: Pennsylvania German Society, 1934).

⁶² Martha Crary Halpern. *Germantown Goods: A History of the Textile Industry in Germantown*. (Germantown: Germantown Historical Society, 1984).

⁶³ Godfrey Miller began an apothecary shop in Winchester but still frame knit stockings. When he died in December 12, 1803, his frame was passed on to his son, Godfrey Jr., who was instructed to work on the frame until he came of age. Godfrey Miller Will. Godfrey Miller Family Collection. Winchester-Frederick County Historical Archives.

year, four month apprenticeship in Berne in 1752 (figure 9). Knit in two colors of cotton thread with a gauge of 22 stitches per inch, this waistcoat is an excellent example of Miller's frame knitting capabilities and knowledge of the nature of knit fabric. The waistcoat consists of a white linen lining joined to the patterned knit fabric, with twelve paste jewel fastenings secured to the fabric through a single strand of woven tape (figure 10). The tight gauge of the colorwork knitting produced a heavier weight of fabric, as a more decorative brocade might have done, which betrays Miller's intuitive understanding of the properties of knit fabric when he needed it to behave more like woven fabric. The waistcoat remains as material evidence of the body who made and wore it, and Godfrey Miller's body is of utmost importance to understanding the frame he operated.

One of his knitting frames was preserved by his descendants, and has now returned to the Germantown area, residing in the Paley Design Center at Jefferson University (figure 11). Godfrey Miller's extant knitting frame and the Miller family archive offer an unprecedented wealth of evidence for the Germantown frame knitting industry's processes, tools, technology, and labor, even including the embodied knowledge of the frame knitter himself. Godfrey Miller's knitting frame was a machine in symbiotic harmony with his body, and the machine only works as well as the hands that guide it. Thus, Miller's machine and his body must be analyzed in tandem. This chapter provides detailed analysis of the Germantown stocking industry's processes in every step of stocking creation, including repair and maintenance of the frame itself.

History of the Knitting Frame's Technological Diffusion

But first, some explanation of the knitting frame's technological diffusion is needed. Much has already been written about the invention of the knitting frame near Nottingham by William Lee in 1589.⁶⁴ His technology, initially rejected by the crown, was taken to France. By the time the British monarchy felt open to granting a patent for this machine, France had developed a competing industry. As England's stocking industry increased in industrial centers like Nottingham and London, so did France's, in areas like Paris and Lyon. Sophisticated metalworking skills in England allowed for new developments in knitting frames and highly skilled positions such as frame smiths, sinker makers, and needle makers. To protect those mechanical advancements, England banned the exportation of knitting frames in 1696.⁶⁵ France countered by improving on an early seventeenth-century model, combining expertise from existing trades to create new frames. Locksmiths and clockmakers provided metal parts while joiners and wheelwrights contributed the wooden components.⁶⁶ As a result, English frames in the period are constructed primarily of metal, while French frames are primarily of wood (figure 12-13). In the eighteenth century, England undisputedly had the best frames in the business, but their import was prohibited.

⁶⁴ The British hosiery industry is documented extensively. Notable works include *The British Hosiery and Knitwear Industry* by F.A. Wells, *Hosiery and Knitwear: Four Centuries of Small-Scale Industry in Britain* by Stanley Chapman, which are most comprehensive.

⁶⁵ F.A. Wells. *The British Hosiery and Knitwear Industry*. (Great Britain: George Allen & Unwin Ltd, 1935), 93.

⁶⁶ Stanley Chapman. *Hosiery and Knitwear: Four Centuries of Small-Scale Industry in Britain*. (Oxford: Oxford University Press, 2002), 27.

French frames spread more easily across borders, most commonly along routes that French Huguenots took fleeing persecution in the seventeenth century. They are the most likely source of the knitting frame technology that made its way into what is now present-day Germany. William Penn recruited Germantown's original settlers from Krefeld, Germany specifically for their textile skill. His vision was to create a settlement with thriving urban industry that could produce for the colony. While linen weaving was the original settlers' initial focus and even became part of Germantown's seal, stocking frames were certainly present as well and quickly supplanted linen weaving as the formative industry.⁶⁷ In areas of Germany like Gruna, frame knitting was the main industry well into the end of the nineteenth century, and immigrants from these areas, like the Millers, were able to directly apply their skill set once they arrived in Germantown. Participation in the industry was more lucrative if the frame knitter owned their frame.

Early American frame knitting organized without two crucial aspects of the English industry: there were no guilds, and no formalized system of frame rental. Without guilds, the industry had more freedom (apprentices could be taken at the frame knitter's discretion), but less visible structure or quality standards. Before 1830, Germantown's knit stocking production was structured as a cottage industry, and frames were kept in the home. By contrast, England had a well-established system of frame renting: one owner of multiple frames would charge by the month a flat fee. This was more painful in times of low production because it meant that a frame knitter paid the same for the cost of using the frame even if they weren't producing as many

⁶⁷ Halpern, *Germantown Goods*.

stockings. There is no evidence of this frame renting structure existing in Germantown; instead, time on a frame was negotiated laterally between multiple frame knitters because the machines were harder to come by than trained workers themselves. Many immigrants trained as frame knitters who sailed over without their own machinery or were unable to afford frames upon arrival could not practice their trade and entered indentured servitude instead. Throughout the eighteenth century *The Pennsylvania Gazette* advertised for shiploads of immigrant workers ready for servitude, including frame knitters.⁶⁸ As such, there were multiple runaway ads for indentured servants who had been trained as frame knitters. In 1767, 29-year-old Thomas Lamphrey, trained as a frame knitter, fled from his master Nathan Farrows in Queen Ann County, Maryland. Farrows specifically mentioned in the ad that Thomas had “often time importuned his master to sell him in Germantown, or thereabouts, so as he might be at his trade.”⁶⁹ But by having his own frame, Godfrey Miller was already one step ahead of his fellow frame knitting immigrants.

Miller’s Frame, Miller’s Body

Elegant woodwork, molded supports, and well-crafted wooden mechanical components of Miller’s knitting frame such as screws and trucks (wooden wheels that

⁶⁸ “Philadelphia, December 5, 1774.” *The Pennsylvania Gazette*. Accessible Archives. Accessed January 1, 2020.

⁶⁹ “Philadelphia, July 16, 1767.” *The Pennsylvania Gazette*. Accessible Archives. Accessed January 1, 2020.

allow the metal machinery, known as the carcase, to slide forwards and backwards) speak to the high quality of the French joinery (figure 14). Gauge for knitting frames is partially determined by the concentration of bearded needles per 3 inches, and Miller's frame is a 26-gauge frame. Gauges in the time period could range from as low as 16-gauge apprentice frames and as fine as 36-gauge silk frames, so Miller's frame would have been a relatively versatile but average machine.⁷⁰ The curved metal spring, centered on this frame and clunkily installed, provides us with a snapshot of a technological puzzle that the French had yet to work around but the English had solved by placing their springs on the sides of the machine (figure 15). This serves as a reminder that for all its wooden elegance, Miller's frame was thoroughly average. That averageness was well suited for early America. The French way of producing frames primarily of wooden parts and using combinations of locksmiths and joiners to construct and repair them would have been much more adaptable to the early American trades in practice in the eighteenth century.⁷¹ Finding a locksmith or even a blacksmith was easier than finding a frame smith, who would have needed a much higher volume of frames to repair in order to make a living. Built in Lyon around

⁷⁰ John Quilter and James Henry Chamberlain. *Framework Knitting and Hosiery Manufacture: a practical work on all branches of the knitting industry* Vol 1. (Leicester: Hosiery Trade Journal Office, 1911), 139-142.

⁷¹ In fact, Alexander Mack, a Germantown frame knitter, records buying a new frame from a local locksmith in 1773. Durnbaugh, Donald F. and Edward E. Quinter, editors *The Day Book/Account Book of Alexander Mack, Jr. (1712-1803)*. (Kutztown: The Pennsylvania German Society, 2004), 262. Chapman, Stanley. *Hosiery and Knitwear: Four Centuries of Small-Scale Industry in Britain*. (Oxford: Oxford University Press, 2002), 27.

1752, the oak frame was in consistent use until at least 1850.⁷² It retains clues to its use during that time: its creation, customization, daily operation, and repair by the man who operated it.

The knitting frame was highly customized to Miller's body; after all, Germantown frame knitters could spend upwards up of 16 hours at a time in front of their frame, producing on average three stockings a day.⁷³ Confined to a mere 26-inch space from side rail to side rail, Godfrey Miller tried to make his workspace as comfortable as he could. The flat wooden seat of this knitting frame was replaced at least once in the eighteenth or early nineteenth century and is easily detached from the frame itself.⁷⁴ Frame seats were commonly tailored to the frame knitter, and usually incorporated a cut circle in the center with thick leather straps overlapping the opening. Even within knitting mills of the later nineteenth century where workers might have to switch their knit fabric to other machines in order to execute a certain stitch technique, they would bring their seats with them. The back footrail has intentionally-gouged indentions to comfortably hold two feet while the machine is at rest, perhaps while Miller leaned forward to repair an error in the fabric, a bent needle, or execute a particular stitch technique with a thin long hook.

⁷² Wrought nails and wire nails are simultaneously present on this frame, suggesting repair and continued use until 1850 at least. Family evidence from the Miller archive also suggests that Miller's sons carried on the trade after his father's passing. Lee H. Nelson. "Nail Chronology." *Technical Leaflet 48*. (Nashville: American Association for State and Local History, 1968).

⁷³ "June 23, 1788." *The Pennsylvania Gazette*. Accessible Archives. Accessed January 1, 2020.

⁷⁴ Nelson, "Nail Chronology."

Wood betrays use more readily than metal on this machine; as movable wooden parts wore down, gaps were filled with layers of leather bearings. Extensive wear marks on the foot pedals express the years of constant use, as well as the order of footwork executed for the machine to function. The organization of the drawers, hooks and designated spaces for spare parts is intuitive and logically placed for ease of access. Scratches of Xs, Vs, and Is on the front of the machine could simply be accidental, but may have been a way to keep track of rows when Miller was first learning a pattern so he could shape his stockings at regular intervals with decreases and increases (figure 16). Use is personal but not always practical; a bit of whimsy in the form of a daisy wheel peeks out from the left arm of the carcass.

Perhaps the most illuminating feature of Godfrey Miller's frame is the system of organizing his parts when repairing the knitting frame, evidence of which is embedded into the material itself. Whether repairing a broken needle or something more complicated like wooden jacks (a series of long thin wooden slats that attach to the jack sinkers, which sink the thread into the bearded needles), sequence is extremely important. None of the parts are interchangeable, and all wear uniquely. This required Miller to replace each individual screw, bolt, jack sinker, or needle case in the exact position it was before deinstallation. To keep track, Miller may have been the individual to carve Roman numerals into every single wooden jack sinker, as well as the long bolts that hold down the plates around the needle cases (figures 17-18)⁷⁵.

⁷⁵ I should note that the Roman numerals on the jack sinkers could also have been placed by the manufacturer to aid the future buyer, but it is my belief that they were placed by Miller himself so that he could keep track of replacement parts as he needed to. In other words, Miller's system was by personal design from the frame knitter, rather than widespread practice by knitting frame manufacturers. But with few

He notched the molded edges of the front plates to correspond with each of their respective wooden bolts. From this system, we can better understand Miller's body at work during instances of repair, how he moved and what parts he kept monitored. When time is money, quick but correct repair is critical for a framework knitter.

Evidence gives us a glimpse of Godfrey Miller's workspace as it might have been. By the light of a frame knitter's lamp, Godfrey Miller's 5'5" frame is illuminated as he sits, slightly hunched over the bearded needles (figures 19-20).⁷⁶ His left foot is placed firmly on the furthest pedal to the left, while his right alternates between the two pedals that control the jack sinkers. His right foot comes down in time with his left hand as he lays the yarn across the needles, and the jack sinkers immediately push the yarn around the hooks. The noise is distinctive; a *chchch* sound echoes every time a row is knit. Two hands push the carcass up and around the needles while the right foot pushes the central pedal, and down comes the presser bar, a thin wooden rail that closes the bearded needles around the new row of knit stitches. The carcass is then pulled forward, pushing the old stitches off the needles. Repeat. Another row of knit fabric is added to the growing flat stocking shape coiled around a ratcheted metal bar directly underneath. His maker's mark, likely one of his initials but possibly a distinctive stitch shape, is worked into the beginning of his knit piece.⁷⁷

comparative objects available to confirm, this claim must remain open-ended for the present.

⁷⁶ The frame knitter's lamp was a glass orb filled with water and iron filament, so that it glowed blue as sunlight or candlelight reflected through it, magnifying the available light in the space. The Framework Knitters Museum has recreated one for their historic site from archival descriptions and it can be seen in Figure 19.

⁷⁷ During my research for this thesis I have compiled data on the variety of maker's marks on stockings in relation to the time period and degree of organized production.

Perhaps Godfrey feels a foreign tension in the pedal, which could signal a bent needle. He pauses, brushes his brown hair out of his eyes, grabs pliers hanging from a nail right below where his hands normally rest on the machine.⁷⁸ The embodied knowledge he possesses helps him avoid a more costly repair should the needle have broken. A quick tweak of the needle, and he is on his way again. Does he rest, adjusting his body in attempts to shake a dull ache from the space between his shoulder blades?⁷⁹ To check his progress, or execute some meticulous stitch pattern? We are privy to some, but not all, of Godfrey Miller's daily rhythms as a frame knitter, and that is a start towards understanding the rhythms of the stocking industry in Germantown.

Material

As the knit stocking on Godfrey Miller's frame grows, I look beyond the frame for evidence in the form of account books and newspaper advertisements to situate the

This data, along with photographs of specific examples, can be found in the appendices of this thesis.

⁷⁸ Guild papers for Miller described his physical appearance, noting that he was of average height, with brown hair. Thanks to a knitted vest Miller knit for himself which remains in the Winchester-Frederick County Historical Society, I can confirm that his height was roughly 5 feet 5 inches. "Godfrey Miller Eckartsberga Guild certification, 1749." Godfrey Miller Family Collection. Winchester-Frederick County Historical Archives.

⁷⁹ The author can attest to this discomfort having worked on a 18th century knitting frame herself.

developing stocking within to the Germantown industry's cast of characters from the previous chapter. Prior scholarship that provides detailed steps of early American frame knitting is nonexistent, and general overviews have been inadequately absorbed within scholarship on weaving. The confusion is understandable; until the nineteenth century in America, frame knitting machinery and their operators were referred to as stocking looms and stocking weavers, respectively. As such, any references to stocking production in Germantown and greater Pennsylvania are usually tangled within the historiography of weaving, and archival sources are more difficult to trace because of improper categorization. Contributing to the confusion, eighteenth-century stockings are rare survivals in collections and especially difficult objects for which to establish provenance. At the moment of this writing, there are no positively identified eighteenth-century Germantown stockings in American collections, which prevents me from providing definitive material evidence, but absence should not deter scholarship.⁸⁰ From the beginning of their production, Germantown stockings were distinctive; so distinctive, in fact, that documents from the period use 'Germantown' as sufficient-enough descriptor to be recognized in at least Pennsylvania in the eighteenth century and into further reaches of America by the early nineteenth century.⁸¹ Recreation of the steps behind Germantown stockings' construction is the closest one can currently come to this distinctive article of early American clothing,

⁸⁰ Because of difficulty in assigning provenance to everyday objects like stockings, Germantown stockings could certainly survive in a collection without any identification, unknown to me or to their curators.

⁸¹ "Barr & Campbell classified ad." *The Supporter and Scioto Gazette*. Issue 42. Chillicothe, Ohio. Thursday, December 1, 1825. Gale Primary Sources: Nineteenth Century Newspapers. Accessed January 1, 2020.

and it is my hope that this will aid in future discovery of a Germantown stocking languishing unidentified in a private or public collection.

Godfrey Miller's frame could have handled linen, wool, and cotton; those three materials are well-documented in descriptions of Germantown stockings, progressing to almost exclusively wool by 1830.⁸² The succession of these materials parallels the fibers in use in woven cloth production in Pennsylvania, and they were sourced from the same cottage-industry spinners.⁸³ Martha Crary Halpern's 1998 article "Germantown, Pennsylvania: an Émigré Textile Settlement," the only definitive scholarly work written about Germantown's stocking industry, explains the industry's transition of materials through reliance of secondhand accounts of the industry.⁸⁴ Germantown's stocking industry was a much mythologized spectacle; consequently,

⁸² There was one instance of silk stockings being made in Germantown during the eighteenth century, published in Boston on November 2nd and republished in the *Pennsylvania Gazette* on November 16, 1769. The advertisement reads "A gentlemen has shewn [sic] us this Week a Pair of Silk Stockings that were manufactured here, and wove by Mr. Etter of Germantown: They appeared to be fine and very strong: Several other Pair, we hear, are weaving of silk made here." Germantown, like many other east coast communities, attempted to launch a silk industry in the 19th century but it failed. This referenced pair of silk stockings would have been created with provided silk thread, and the enterprise in its entirety should be taken as an anomaly rather than a reflection of the types of common stockings made in Germantown during this time. Ultimately, the market for silk stockings was controlled entirely by England and France, without any competition from domestic manufacturing. *Pennsylvania Gazette*. "Boston, November 2." *Pennsylvania Gazette* November 16, 1769. Accessible Archives.

⁸³ Adrienne D. Hood *The Weaver's Craft: Cloth, Commerce, and Industry in Early Pennsylvania*. (Philadelphia: University of Pennsylvania Press, 2003), 67-84.

⁸⁴ Martha C. Halpern. "Germantown, Philadelphia: An Émigré Textile Settlement c.1680-1960." *Textile History* 29:2. (Leeds: Maney Publishing, 1998), 157-176.

visitors to Pennsylvania often wrote about their firsthand experiences or secondhand knowledge of the industry as *the* distinguishing fact about Germantown as a geographic location. The 1758-1802 day book and account book of Germantown frame knitter and German Baptist Brethren minister Alexander (Sander) Mack, Jr. (1712-1803) is able to confirm many of these secondhand accounts, and provides crucial archival evidence formally unused by past scholarship on the Germantown stocking industry.⁸⁵

Secondhand accounts and Mack's documented frame knitting activity confirm that linen, wool, and cotton were used simultaneously during the eighteenth century. Linen, the foremost fiber of Germantown's early settlers, was likely used in the first stockings, often known in the period as thread stockings.⁸⁶ Wool, while notably in high demand in early America throughout the eighteenth century, was the most common material for Germantown stockings. German botanist, Johann David Schoepf, visited Germantown in 1783 as the industry struggled to recover after the Revolutionary War, and wrote "in particular a good quantity of common woolen stockings was at one time made here, but by no means enough to supply a fourth part

⁸⁵ Mack Jr was a long-standing leader within the German religious group Schwarzenau Brethren, colloquially known as "Dunkers" when they immigrated to Pennsylvania in 1729. In his earlier years he lived in Ephrata, a German monastic institution in Lancaster County with close ties to Germantown. He exited the cloister with the Eckerlin brothers after a power struggle with charismatic but mercurial leader Conrad Beissel and briefly lived in their new Virginia settlement before returning to the Germantown area; he would live out his days as a frame knitter and minister. He had a close friendship with Christopher Sauer II, and regularly made stockings for his family. Durnbaugh and Quinter, editors. *The Day Book/Account Book of Alexander Mack, Jr. (1712-1803)*.

⁸⁶ Jeremy Farrell. *Socks and Stockings*. (London: B.T. Batsford Limited, 1992), 94.

of the country. It is asserted that America does not yet produce wool enough to furnish each inhabitant so much as one pair of stockings.”⁸⁷ Cotton, initially a harder and more expensive material to come by, was introduced into the industry in the mid-eighteenth century. Between 1766-1776 Mack Jr. produced linen, wool, and cotton stockings, as well as caps and gloves depending on his clients’ preferences.⁸⁸ Materials were typically selected by the clients and given to Mack, although he occasionally sourced his own stocking yarn. The variation in product speaks to the customization potential of a cottage industry, and makes a clear distinction between Germantown’s stocking production before 1830 as opposed to after; despite the rather grandiose term “industry,” early stocking production in Germantown was decentralized and varied, with multiple supply chains.

Out of all stocking materials found in Germantown, cotton in particular was most likely to stabilize as a supply chain and encourage the use of new processing machinery. As the new nation rallied behind American manufacturing, the Germantown stocking industry exemplified the potential of Southern-grown cotton and new spinning technology. A June 23, 1788 editorial in the *Pennsylvania Gazette* advocating for American manufacturing describes the Germantown stocking industry in detail:

⁸⁷ *Pennsylvania Gazette*, II June 1788 (in C.F. Jenkins, Comp. ‘Newspaper Items Relating to Germantown, 1727-1807’ (typescript in Germantown Historical Society Library and Archives.)

⁸⁸ Frame-knit gloves and caps were also common knit items in early America, and Germantown caps were also a recognized item in runaway advertisements, although decidedly less frequent than Germantown stockings. Durnbaugh and Quinter, editors. *The Day Book/Account Book of Alexander Mack, Jr. (1712-1803)*.

“There are now about 250 stocking looms in the different parts of the city and state, each of which makes, on a medium, one pair and a half of stockings every day. These, deducting Sundays, will amount to 117,375 pair per annum...the increase of wool and flax, the reduction of labor, provisions and rents, the cultivation of cotton in the southern states, and, above all, the use of machines to card, spin and twist cotton thread, will greatly promote this article, of which, at two pair to each person annually, the United States require *a yearly supply* of near six millions of pairs.”

The editorial aims to convince audiences of the *potential* of an interconnected American textile industry and, aside from the statistics, may not give an exact rendering of the supply chain for Germantown’s cotton stockings. Regardless, its printed presence is enough to speculate an eventual connection between the Germantown stocking industry and southern cotton grown with enslaved labor. The editorial was likely inspired by the presence of new technology in the city that year; Philadelphia’s Manufacturing Society had procured “two complete machines for carding and spinning cotton” which they believed would provide “immediate employment to our stocking-weavers in Mulberry ward and Germantown” whose industry had been “suspended for want of cotton yarn.”⁸⁹ Given the high duty on imported hosiery, the rise of cotton as a desirable material, and the decline in price of crops like tobacco, rice, and wheat, the Society rightfully believed that planters in Maryland, Virginia, the Carolinas and Georgia would soon switch to raising cotton instead.

⁸⁹ “The manufacturing society of this town.” *The Pennsylvania Gazette*. Philadelphia, March 19, 1788. Accessible Archives. Accessed January 1, 2020.

However popular cotton grew to be, wool's steadfastness, absorption, and durability as a material likely contributed to its continued presence in Germantown stockings. William Felkin's 1867 book *A History of the Machine-wrought Hosiery and Lace Manufacturers* serves as the first text devoted to the history of Britain's dominating knit stocking industry, but Felkin notes Germantown as a competing American stocking industry making "nearly all woolen [hosiery], similar to those made by Harris of Leicester."⁹⁰ Cotton and wool became signature materials for the Germantown brand after the Revolutionary War, but the industry focused primarily on wool in the remainder of the nineteenth century.⁹¹

Whether cotton, linen, or wool, the growing stocking on Godfrey Miller's frame would have been aided by several historically uncredited female actors. In Geraldine Sheridan's book *Louder Than Words: Ways of Seeing Women Workers in Eighteenth-Century France*, images of women engaged in various artisan workshops prove the existence of their labor in the frame knitting industry where written archival evidence fails to document them, such as spinning yarn for a frame knitter or making bearded needles for the frame itself (figure 21-22).⁹² But even images captured by

⁹⁰ Felkin, William. *A History of the Machine-Wrought Hosiery and Lace Manufactures*. (London: Longmans, Green, and Co., 1867), 542.

⁹¹ Advertisements for Germantown stockings in the 19th century overwhelmingly describe them as woolen hose.

⁹² I can't confirm (nor do I find it likely) that the frame-making industry was organized enough in Pennsylvania for women to make their living producing bearded needles, like this image might suggest, but if the needles were imported they could have been made by women abroad. Geraldine Sheridan. *Louder Than Words: Ways of Seeing Women Workers in Eighteenth-Century France (Fashioning the Eighteenth Century)*. (Lubbock: Texas Tech University Press, 2009), 134-161.

Diderot and others are subject to gendered expectations of women's contributions, all but ensuring that women were engaging in some traditionally male laboring tasks in addition to those visually documented. Noting the female anomalies in male-dominated trades has long been a means of including women in conversations of early American artisans and tradespeople, but the technique fails women who are already there. How do you measure time for a woman whose domestic rhythms are not a linear progression of task-specific production? While not always explicit in archival sources, the stocking yarn provided for Miller, Mack Jr., and other Germantown frame knitters was spun by women, whether as an unpaid part of their domestic role or as formal income. Frame knitters' wives, the wives of their customers, and women in the community spinning expressly for pay were responsible with producing even, strong 2-and-3-ply fine stocking yarn fit for a knitting frame. Their spinning skill was a fundamental contribution to the overall quality of the finished stocking. Once the spun material had been procured by the frame knitter, the yarn needed to be organized in an easily dispensable manner, likely onto bobbins. This menial task was most likely passed on to the frame knitters' children. When attempting to quantify the individuals involved in Germantown's stocking industry, data should not be limited to the names of men who listed themselves as stocking weavers on tax lists. The unseen labor behind their trade can be roughly estimated by their immediate family members, and women in the community who may escape tax records but were vital contributors nonetheless.⁹³

⁹³ For a detailed table of this data, please see Table 1 in Chapter 1 of this thesis.

In more formal supply chains available to Germantown, such as stocking thread from Philadelphia-based ‘thread throwster’ Abraham Shelley, this gendered labor is more explicit. Shelley began as a thread maker in Philadelphia first advertising in 1740, but soon rose to operate his business from the work house, where he used the labor of workhouse residents to produce varieties of “tailorthread, housewife and stocking thread.”⁹⁴ The scale of his industry is impressive; in 1747 he sold a good portion of his equipment, including “three large tables, one of which thirty persons may sit around, a thread mill of fifty two spinnels [sic], all utensils belonging to making of thread and twisting of worsted, three choice factory hatchels of different sizes, for hatchelling of flax or hemp, two iron bound lye casks, iron bound dye fats, hemp, flax, a tape loom of twelve shuttles, and all utensils belonging to tape weaving, and a glazing engine.”⁹⁵ By 1770, his advertisements explicitly note that he has two thread mills and can readily expand, and that his thread making business “supplies a great deal of poor women with market money, who, otherwise with their children would become a public charge.”⁹⁶ Shelley’s robust thread-making industry would have been the largest, centrally organized production of stocking thread in the Philadelphia area, and could have supplied Germantown frame knitters with ready material spun from the hands of female workhouse residents.

⁹⁴ “April 20, 1769.” *The Pennsylvania Gazette*. Accessible Archives. Accessed January 1, 2020.

⁹⁵ “July 30, 1747.” *The Pennsylvania Gazette*. Accessible Archives. Accessed January 1, 2020.

⁹⁶ “April 20, 1770.” *The Pennsylvania Gazette*. Accessible Archives. Accessed January 1, 2020.

Stocking Finishing

Meanwhile, Godfrey Miller treadles on, pausing only to enact a series of increases and decreases of edge stitches on strategically spaced rows with his thin metal hook, as the flat knit stocking begins to take shape. He reaches the point in the stocking where the ankle and heel should be shaped, and things turn slightly more complicated. First, he separates two small sections of stitches on the left and right sides of the knit fabric; these will be sewn together after knitting to form the heel. The middle section of the stocking will form the upper part of the foot. Godfrey must knit these sections simultaneously, each section with its own thread, until the heel flaps are complete. After casting off the flaps, he can focus solely on shaping the foot, decreasing strategically to produce the rounded toe, before casting off again. The finished product, when flat, might look decidedly *unstocking*-like (figure 23). One final piece is needed: Godfrey frame knits a smaller flat foot that will attach to the back of the heel flaps and serve as the bottom of the stocking.⁹⁷ Once these knit pieces are off the frame, they enter the hands of female stocking finishers.

Stocking finishing involves sewing the edges of the stocking body together, connecting the heel flaps together, inserting the foot, and sewing down the top of the stocking into a welt through a combination of plain sewing stitches and grafting, a technique that produces an invisible seam mimicking the structure of knit stitches. This crucial stage in the frame knitting stocking production is recorded in the 1845-

⁹⁷ Stockings of higher quality and more snug fit would have an additional knit piece of wedge-shaped fabric inserted along the ankle, called a gore. This would have been a rare detail for Germantown frame knitters to include in their work, given that most gores are inserted in silk stockings. For more information on gores, Jeremy Ferrell's *Socks & Stockings* is an excellent resource.

1868 account book of Abraham Gehman, a German frame knitter-turned-farmer from Douglas Township, Pennsylvania, who provides unparalleled insight into daily operations.⁹⁸ Gehman bought his frame in 1845 and paid for lessons, as well as tools, spools, and 25 pounds of wool. Over the course of his frame knitting business, he hired Elizabeth Bachtel, a local farmer's wife, to complete the sewing process. The sheer volume of his output, and by extension her workload, is notable; in 1848 alone, Elizabeth finished an astonishing 571 pairs of half stockings, 27 pair of women's stockings, and 36 pair of long men's stockings for Gehman, earning only \$4.45 for the whole year. In that year, the average price for a single pair of half stockings made by Gehman was \$3. Newspaper advertisements in the *Pennsylvania Gazette* note a variety of women capable of stocking finishing, beginning in 1740 with Elizabeth Hunter who "grafts and foot stockings of all Sorts very neat, puts Pieces into Stockings."⁹⁹ Formal employment of women for stocking finishing is only half the story; for every woman explicitly paid for this task there is likely another who completed this labor as part of her domestic role in a frame knitter's household.

After the Germantown stocking has been sewn into a three-dimensional object, it undergoes a fulling process. Using in-house "fulling equipment" as mentioned in multiple probate inventories for Germantown frame knitters and visually expressed in

⁹⁸ While outside the self-imposed time period for this thesis of 1683-1830, the business model of rural Pennsylvania German framework knitter Abraham Gehman in the mid-nineteenth century is a close substitute for an 18th century Germantown frame knitter, especially given the assumption that frame knitting technology spread through German networks in early America. Gehman was also likely buying a used 18th century frame.

⁹⁹ "April 3, 1740." *The Pennsylvania Gazette*. Accessible Archives. Accessed January 1, 2020.

Diderot's rendition, stockings are exposed to hot water and agitation with various results depending on the material of the stocking itself, then stretched onto wooden stocking molds, historically known as "patterns" and left to dry (figure 24). Within the background of Diderot's plate of the stocking fuller, stocking patterns hang on the wall, drying the fabric around the wooden shape. Patterns could be carved and customized, as for Abraham Gehman, or they could have been imported.¹⁰⁰ Extant stocking patterns in Germantown Historical Society's collection display the range of forms possible; despite the same size of foot, the shape of the calf and the arch of the foot vary dramatically (figure 25).

For cotton or linen stockings, the fulling process was likely lighter or generally consisted of gentler exposure to water, focusing more on how the drying process around the pattern, known as blocking, would provide an initial uniform shape and fit for a first-time wearer. For woolen stockings, and Germantown woolen stockings in particular, the process was more aggressive in order to firm up the knit fabric so that the woolen fibers would begin to felt, tightening the knit stitches together.¹⁰¹ The end result creates a more durable, slightly stiffer stocking more suited for harder wearing, seen in this eighteenth-century woolen stocking example in the Chester County Historical Society (figure 26). Germantown stockings made of wool were consistently

¹⁰⁰ "Imported in the last Vessels from Europe and to be Sold." *The Pennsylvania Gazette*. November 3, 1763. Accessible Archives. Accessed January 1, 2020. Gehman, Abraham. *Account book 1845-1868*. Account book. Douglas Township, Pennsylvania. Private Collection.

¹⁰¹ For more information on fulling technology and process with larger woolen fabrics, see Eliza West's M.A. thesis "*Milled Fit For Trousers*": *Toward a Fuller[s] Understanding of Cloth Finishing in the Mid-Atlantic From 1790 to 1830*. <http://udspace.udel.edu/handle/19716/24910>

noted for their fulled appearance, and their particular suitability for military wear; Tench Coxe in *A Statement of the Arts and Manufactures of the United States of America for the Year 1810* mentions that “the fulling of hosiery is practiced in Pennsylvania in making that description, which is called the Germantown stocking.”¹⁰² Eighteenth-century probate inventories for Germantown frame knitters such as Godfried Bockius, listed “28 unfulled stockings at 50 cents and 10 dozen fulled and three pair at 70 cents.”¹⁰³ Fulled stockings were also referred to as “milled stockings,” which gives the impression that fulling mills were sites for stocking fulling, but based on the descriptions of smaller-scale fulling equipment present in multiple Germantown frame knitter’s homes throughout the eighteenth century and also in Gehman’s 1845 account book, as well as the difficulty of evenly fulling small objects in a larger-scale facility, the term likely embodies the end result but not the location of the process.¹⁰⁴ There is not enough evidence to definitively identify the hands that fulled Germantown stockings, although the physical action could have been executed successfully by both men and women. For woolen fulled stockings, the nap of the stocking fabric would then need to be trimmed with stocking shears after drying. The 1698 engraving of German hand-knit stocking processes by Christoph

¹⁰² Tench Coxe. *A Statement of the Arts and Manufactures of the United States of America for the Year 1810*. (Philadelphia: A Cornman, Junr., 1814).

¹⁰³ Godfried Bockius. “Probate Inventory of Godfried Bockius.” Philadelphia Register of Wills #275 of 1780.

¹⁰⁴ Multiple inventories for Germantown frame knitters list fulling equipment. Gehman purchased “a fulling machine” for \$5.00 on November 19, 1846. Gehman, Abraham. *Account book 1845-1868*. Account book. Douglas Township, Pennsylvania. Collection of Alan Keyser.

Weigel shows stocking shears in action, but we know they were also present in Germantown (figure 27). In 1760, Germantown frame knitter Alexander Mack exchanged room and board for his informal apprentice Matthew DiSchong's labor on his frame and all stockings he produced, noting that the profits from them are "deducted for stocking shears that up to now he had owed me."¹⁰⁵

Color

The color of Germantown stockings remains a mystery. They were described retroactively as "excellent brown and white thread and cotton hosiery made... known by the name of Germantown Stockings" by Tench Coxe in 1810, but multiple eighteenth-century runaway advertisements describe men wearing "blueish Germantown stockings."¹⁰⁶ Regardless of the correct color, dyeing and bleaching were crucial parts of the stocking industry and could happen at various points in a stocking's creation. Both Mack and Gehman record dyeing yarn prior to frame knitting, as well as dyeing stockings after they were knit. Mack in particular produced blue stockings when he specified color in his account book entries, and in several instances made two especially fine pairs of blue stockings with white clocking, which is a type of embroidery around the ankle of the stocking popular with both men and

¹⁰⁵ Durnbaugh and Quinter, editors. *The Day Book/Account Book of Alexander Mack, Jr. (1712-1803)*, 85.

¹⁰⁶ "November 10, 1766" *The Pennsylvania Gazette*. Accessible Archives. Accessed January 1, 2020.

women's stockings. Clocking has been historically viewed as a more fashionable embellishment on silk stockings in particular, so documentation of clocking on plainer stockings made with more affordable materials is especially notable and complicates expectations of Germantown's frame knitters' quality of output.

For white stockings made of linen and cotton, bleaching was a crucial step. Germantown Bleachfield, owned by John Hunter, began advertising in 1777, but as early as 1752 a bleaching green erected a mile outside Philadelphia owned by Thomas Campbell advertised explicitly to stocking weavers, stressing that "Stocking Weavers may depend on having their Branch of the Business well whitened" and noting that goods could be picked up by his business, then returned.¹⁰⁷ Out of their frame knitters' possession, stockings in a bleaching green were vulnerable to thievery and misplacement. In those instances, the frame knitters' makers marks served as identifying features that gave nondescript stockings the best chances of returning to their rightful owners. Whether as spun stocking thread or completed fabric pieces, a frame knitter's goods would be hung on tenterhooks on the bleaching green and left outside for the sunlight to warm and whiten.

Finished and full'd, dried and folded, with his maker's mark knitted on or just below the welt, Godfrey Miller's Germantown-made stockings were ready to sell, whether to individual clients and wholesale accounts organized by himself, or for more general sales as representative of the Germantown community's collective industry. Bodies at each stage of the stocking process have contributed to their

¹⁰⁷ "Notice is hereby given, that here erected by Thomas." *The Pennsylvania Gazette*. February 25, 1752. Accessible Archives. Accessed January 1, 2020.

creation; bodies bent over frames, with hands seaming and sewing, arms plunged into vats of water for fulling. Stockings are now ready for inhabitation; knit fabric waits ready to form material echoes around the feet and legs of early Americans. What bodies await them in Philadelphia? Germantown women add Miller's knit stockings to the baskets of Germantown stockings bound for Philadelphia, and they begin their journey, setting off on Germantown Pike for the corner of 2nd Street, to be sold, used, and repaired.



Figure 9 This waistcoat, made and worn by Godfrey Miller, was likely his guild masterpiece after his two year, four month apprentice in Berne in 1752. The outer fabric is frame-knit in black and white patterning and the lining is white linen. Waistcoat. Winchester-Frederick Historical Society. *Courtesy of Winchester-Frederick Historical Society. Photo by the author.*



Figure 10 Godfrey Miller's waistcoat has twelve paste buttons that are attached with woven tape knotted through the backs of each button for easy removal. Waistcoat. Winchester-Frederick Historical Society. *Courtesy of Winchester-Frederick Historical Society. Photo by the author.*

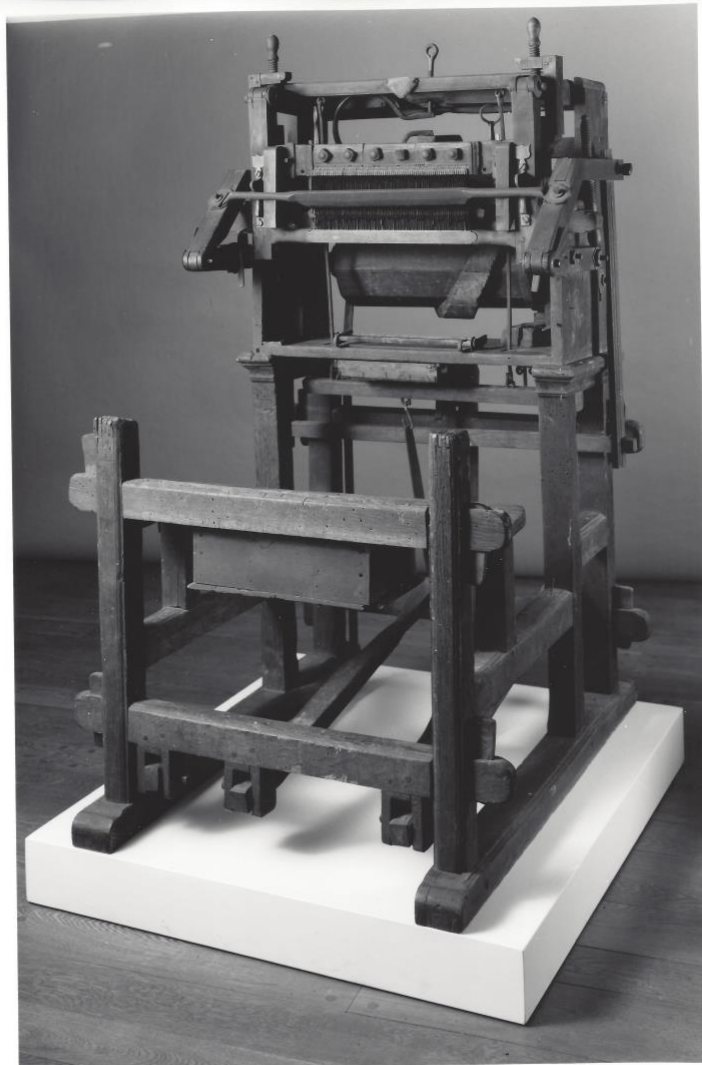


Figure 11 This knitting frame was made in in Lyon, France before 1752 and brought to Germantown, Pennsylvania by Godfrey Miller in 1763. Knitting frame. Textile & Costume Collection, Thomas Jefferson University. *Courtesy of the Textile & Costume Collection, Thomas Jefferson University.*



Figure 12 A late eighteenth-century knitting frame made in England. Notable construction differences between this frame and Godfrey Miller's frame are mentioned in the Appendices. Knitting Frame. Framework Knitters Museum. *Courtesy of Framework Knitters Museum. Photo by the author.*



Figure 13 Eighteenth-century knitting frame used in Germany, also called a "Saxon" frame. Saxon Frame. Framework Knitter's Museum. *Courtesy of the Framework Knitter's Museum. Photo by the author.*



Figure 14 The carcass of Godfrey Miller's knitting frame, which is made up of the jacks, jack sinkers, bearded needles, and presser bar. Knitting frame. Textile & Costume Collection, Thomas Jefferson University. *Courtesy of the Textile & Costume Collection, Thomas Jefferson University. Photo by the author.*



Figure 15 The main spring on Miller's frame had to be fit inside the crossbeam, shown by the gouge marks in the wood. Knitting frame. Textile & Costume Collection, Thomas Jefferson University. *Courtesy of the Textile & Costume Collection, Thomas Jefferson University.*



Figure 16 Faint Xs on the front of Godfrey Miller's frame may be marks to note the number of rows completed in a stocking pattern. Knitting frame. Textile & Costume Collection, Thomas Jefferson University. *Courtesy of the Textile & Costume Collection, Thomas Jefferson University.*



Figure 17 Roman numerals are carved into the original wooden jacks of Miller's frame, while the replacement jacks are blank. Knitting frame. Textile & Costume Collection, Thomas Jefferson University. *Courtesy of the Textile & Costume Collection, Thomas Jefferson University.*



Figure 18 Roman numerals are also present on the metal bolts that keep the front needle plates in place on Miller's frame. Knitting frame. Textile & Costume Collection, Thomas Jefferson University. *Courtesy of the Textile & Costume Collection, Thomas Jefferson University.*



Figure 19 This replica of a traditional framework knitter's lamp hangs in the Framework Knitters Museum. The glass orb is filled with water and iron filament which better reflects sunlight, in order to amplify light for frame operation inside. Framework knitter's lamp. Framework Knitters Museum. *Courtesy of the Framework Knitters Museum. Photo by the author.*

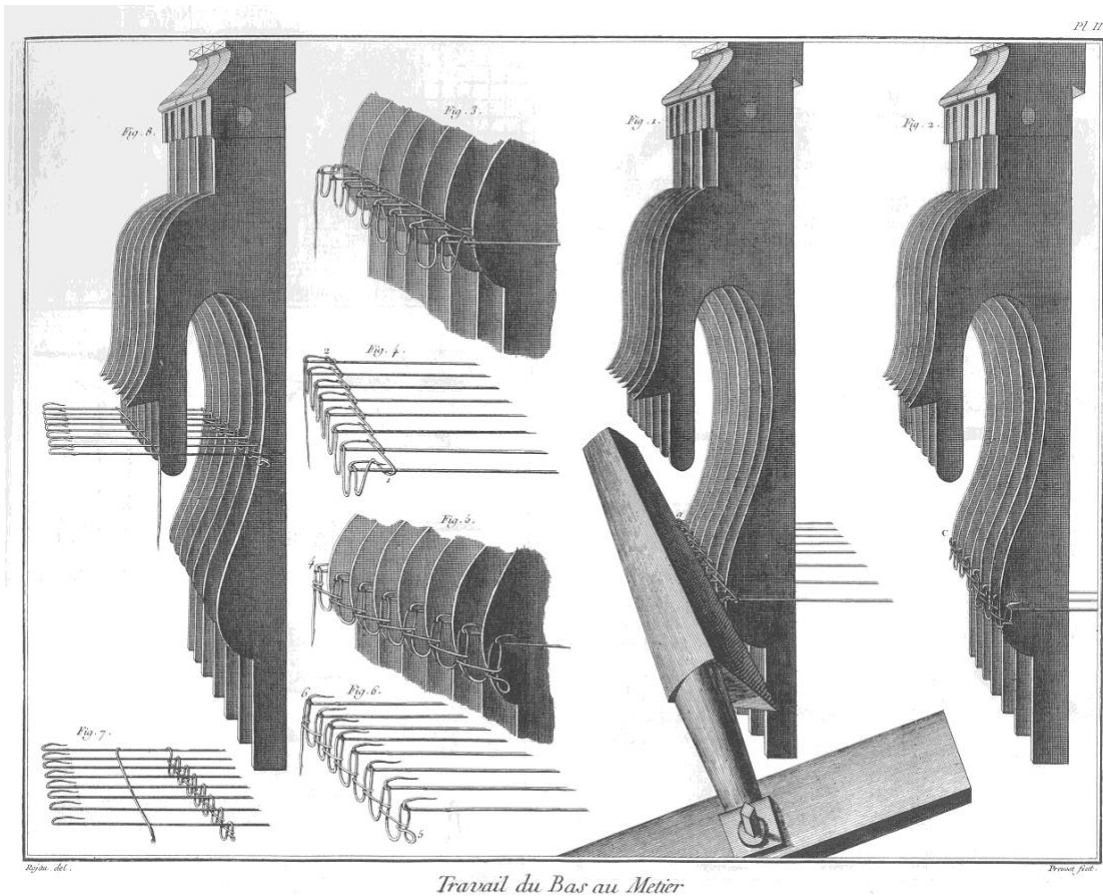


Figure 20 Diderot's diagram demonstrates the function of a knitting frame's bearded needles (thin hooked needles) and the tin jack sinkers (flat s-curve metal sheets) as each knit row is executed. "Stocking loom maker and stocking weaver – Stocking weaver." *The Encyclopedia of Diderot & d'Alembert Collaborative Translation Project*. Ann Arbor: Michigan Publishing, University of Michigan Library, 2010. <http://hdl.handle.net/2027/spo.did2222.0001.680> (accessed March 31, 2020). Originally published as "Faiseur de métier à bas et faiseur de bas au métier – faiseur de bas au métier," *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, vol. 2 (plates) (Paris, 1763). This image is in the public domain.

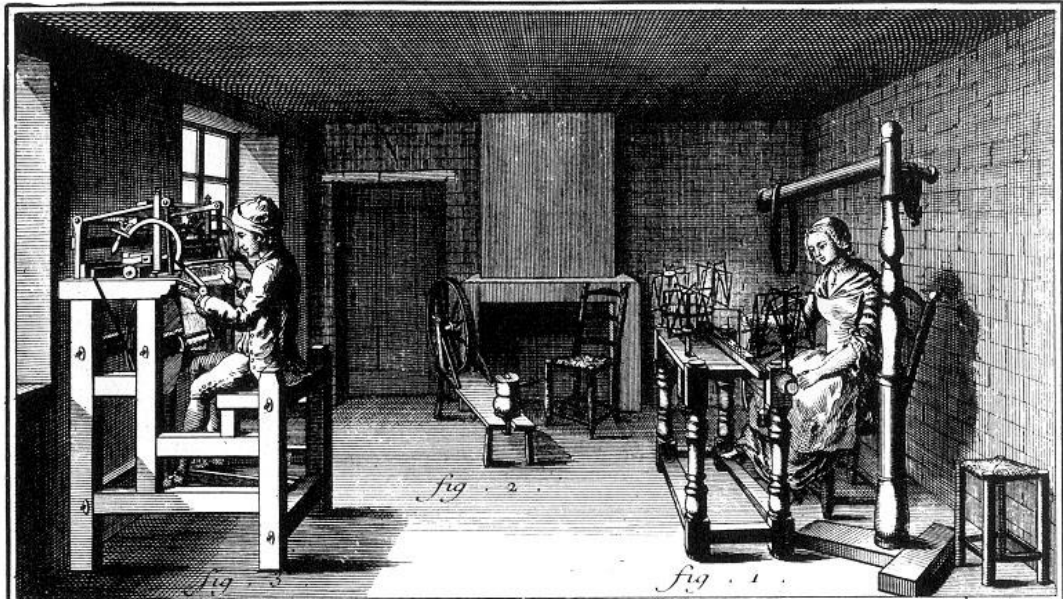
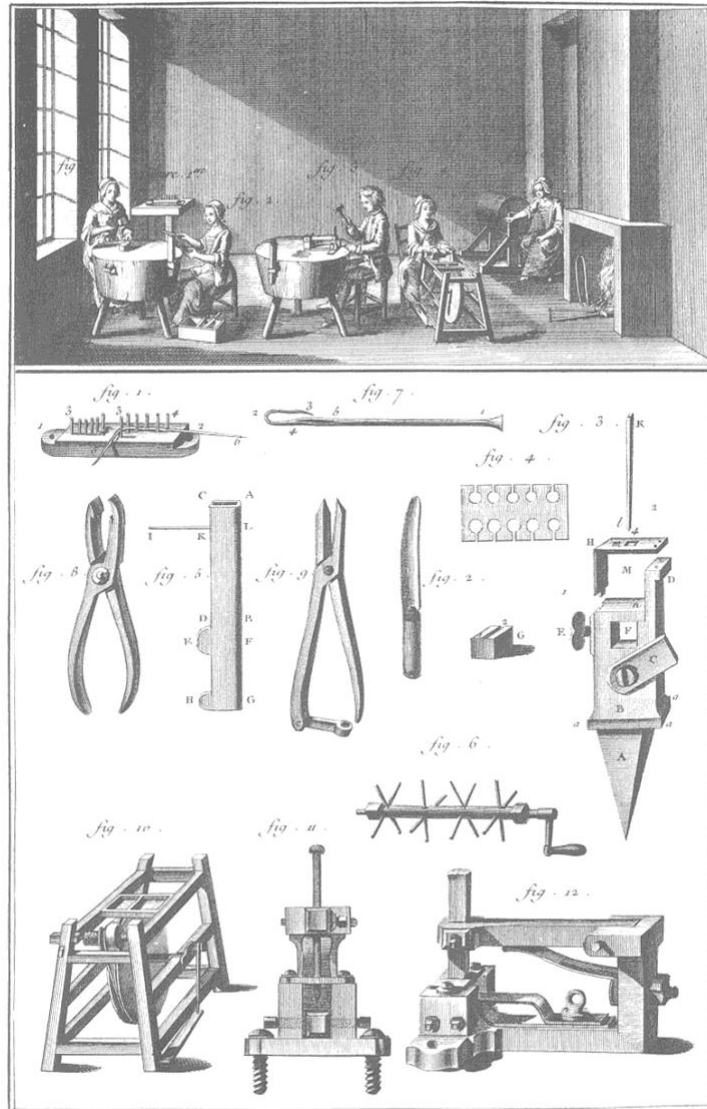


Figure 21 This image from Diderot's Encyclopédie illustrates a frame knitter at work inside his home, while a woman in his household (possibly his wife or daughter) spins yarn for his work. "Stocking loom maker and stocking weaver – Stocking loom maker." *The Encyclopedia of Diderot & d'Alembert Collaborative Translation Project*. Ann Arbor: Michigan Publishing, University of Michigan Library, 2010. <http://hdl.handle.net/2027/spo.did2222.0001.385> (accessed March 31, 2020). Originally published as "Faiseur de métiers à bas, et faiseur de bas au métier," *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, vol. 2 (plates) (Paris, 1763). This image is in the public domain.

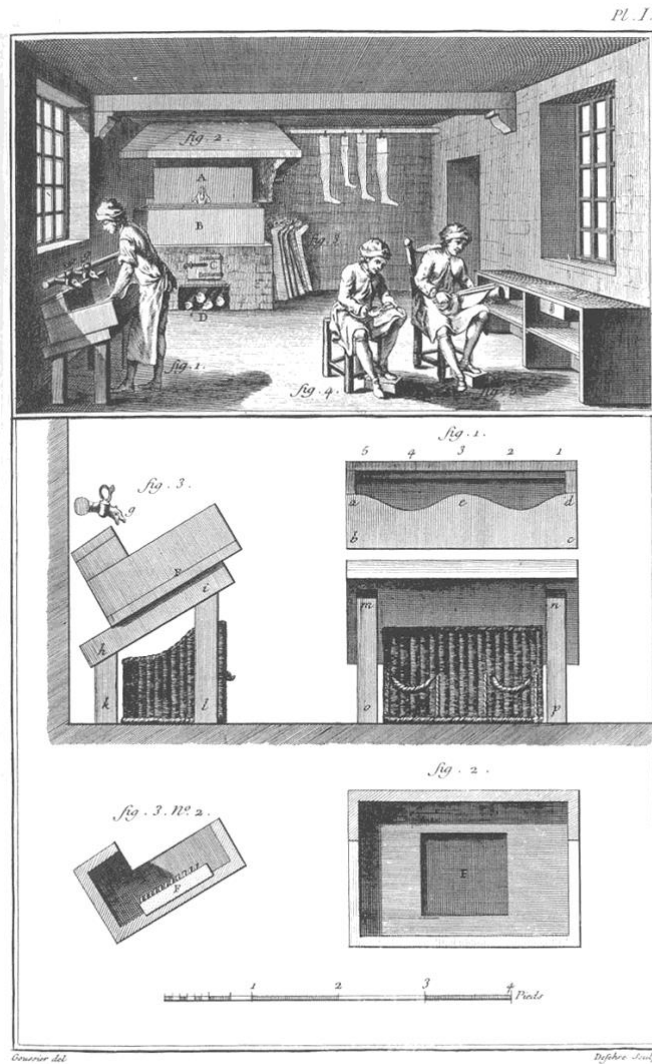


Aiguiller-Bonnetier.

Figure 22 Several women can be seen making bearded needles for knitting frames in this Diderot print. "Needle maker – Needle maker-Cap maker." *The Encyclopedia of Diderot & d'Alembert Collaborative Translation Project*. Ann Arbor: Michigan Publishing, University of Michigan Library, 2010. <http://hdl.handle.net/2027/spo.did2222.0001.357> (accessed March 31, 2020). Originally published as "Aiguillier – Aiguillier-bonnetier," *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, vol. 1 (plates) (Paris, 1762). This image is in the public domain.



Figure 23 These are three stages of frame-knit stocking creation. First, the stocking is frame-knit flat down to the ankle. Then, the stocking heel is created. Finally, the foot is inserted and awaits final seaming. Stockings. Framework Knitters Museum. *Courtesy of the Framework Knitters Museum. Photo by the author.*



Bonnetier de la foule

Figure 24 Diderot's engraving of a "Bonnetier de la foule," also known as a hosier, illustrates the at-home fulling machine that agitates frame-knit stockings in water. The wet stockings are then set to dry over stocking patterns, which can be seen hanging from a ceiling beam and leaning against the back wall. "Hosier." *The Encyclopedia of Diderot & d'Alembert Collaborative Translation Project*. Ann Arbor: Michigan Publishing, University of Michigan Library, 2010. <http://hdl.handle.net/2027/spo.did2222.0001.391> (accessed April 1, 2020). Originally published as "Bonnetier de la foule," *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, vol. 2 (plates) (Paris, 1763). This image is in the public domain.



Figure 25 Nineteenth-century stocking boards, also called “stocking boards” used by Germantown knitting mills to block stockings into shape. Stocking boards. Germantown Historical Society. *Courtesy of Germantown Historical Society/Historic Germantown. Photo by the author.*



Figure 26 A 1791 frame-knit pair of fullered woolen stockings owned by William W. Downing of Downingtown, Pennsylvania. Stockings. Chester County Historical Society. Accession Number: CLST1. *Courtesy of Chester County Historical Society. Photo by the author.*



Figure 27 In Christoph Weigel's 1698 engraving "Der Strümpffstricker," the center figure cuts down the nap of a knit stocking with shears. Stocking shears have also been recorded as present in Germantown's stocking industry. "Der Strümpffstricker" (the hosier). Copper engraving by Christoph Weigel (1654–1725). From: "Abbildung und Beschreibung der gemeinnützlichen Hauptstände", Regensburg (Germany), 1698. AKG262721. Courtesy of AKG Images.

Chapter 3

VISIBILITY OF GERMANTOWN STOCKINGS: PUBLIC PERCEPTIONS AND PRIVATE REPAIRS

Onboard the *Helvetius*, Germantown wool once again met water. Charles Gallagher and Thomas Little were both apprentices to Stephen Girard, the wealthiest man in the Early Republic, to be trained in “the Art, Trade, and Mystery of a Mariner” over the course of five years, seven months and two days.¹⁰⁸ The *Helvetius* was one of four ships exclusively built and owned by Girard that were named after his favorite French philosophers, with figureheads representing each ship’s namesake carved by Philadelphian ship carver William Rush.¹⁰⁹ In 1804, shortly after the ship was built, Girard placed Gallagher onboard the *Helvetius* in the care of Captain Ezra Bowen, asking Bowen to ensure that Gallagher remained “constantly employed to the work of the ship, and to improve [himself], and kept under strict subordination; should [he] want any necessities, you will oblige me to supply them in a frugal manner, and to see that good care is taken of [him], if [he] should be sick.”¹¹⁰ Gallagher would return again to the *Helvetius* in 1808, this time to explicitly learn the art of Navigation, wearing “Germantown mill hose” along with other clothing bought for him by

¹⁰⁸ Thomas Bartholomew and Stephen Girard. *Thomas Bartholomew Indenture as a Mariner November 28, 1804*. Indenture. From Girard College. *Stephen Girard Papers* 2070.48.

¹⁰⁹ Helen Hoyt. “The Wreck of the Philosopher *Helvetius*.” *Hawaiian Journal of History*, vol. 2 (1968), 69-75.

¹¹⁰ Ezra Bowen. “*Ezra Bowen to Stephen Girard, December 10, 1804*. Letter. From Girard College. *Stephen Girard Papers* Letter Book 9, 40.

Girard.¹¹¹ Woolen Germantown stockings were a practical choice for an apprenticed sailor; the fulling process which made milled stockings so durable ensured that they were the highest quality working man's footwear available for Girard to purchase. In the hard, soggy life of a sailor, Germantown stockings would have kept Gallagher's feet insulated and warm.

The life of an American mariner in the early nineteenth century was not without dangers; over the course of their lifetimes, Girard's "philosopher ships" moved cotton from Charleston to Europe via Philadelphia, smuggled opium to Canton, and ran the British blockade during the War of 1812—in several instances resulting in French internment in ports during the Napoleonic Wars.¹¹² The risks that came with those journeys might have weighed heavily on the mind of Thomas Little, another of Girard's apprentices who wore Germantown hose.¹¹³ Little was, at most, a reluctant apprentice. In 1810, Little was ordered to journey with the *Rousseau* under the direction of a Captain Myles McLeven, under whom he had sailed on a prior journey. Little complained that he had received "ill treatment" under McLeven, which was dismissed by Matthew Walker, an appointed middleman for Girard in the management of his apprentices. Walker claimed that McLeven was an "accomplished seaman

¹¹¹ Girard also purchased Germantown stockings for boys in this transaction, and consistently purchased Germantown stockings for all his apprentices. Gallagher's clothing, besides his stockings, included a round jacket, two pair of cloth trousers and two pair of duck trousers. Samuel Lippincott. *Receipt May 29, 1809*. Receipt. From Girard College. *Stephen Girard Papers*.

¹¹² Hoyt, "The Wreck of the Philosopher Helvetius," 71.

¹¹³ Little also received four check shirts, two flannel shirts, two pair trousers and three jackets in addition to four pair of Germantown hose. Samuel Lippincott. *Receipt June 5, 1809*. Receipt. From Girard College. *Stephen Girard Papers*.

attentive to his duty, active, extremely sober honest and humane man.”¹¹⁴ Possibly to avoid boarding the ship, which was bound for Montevideo and Rio de la Plata before heading to China, Little claimed he was sick, motivated by what Walker assumed was “his wish to contradict my intention by not going on the ship *Rousseau*.”¹¹⁵ In response to this Girard was unforgiving, “being desirous to give the youth an opportunity to enter in the true path of his duty,” and ordered Little to “conduct himself agreeable to the tenure of his indenture” onboard the *Rousseau* regardless of illness.¹¹⁶ This rigidity might have driven Little to run away when the *Rousseau* had scarcely left the Delaware River; three unidentified sailors deserted around Reedy Island, delaying the ship’s journey south.¹¹⁷

Had Little, disgruntled apprentice, indeed fled the obligations of his contract with Girard back in Philadelphia, the Germantown stockings he wore might have been his undoing. Under close public scrutiny, any element that could aid in the return of runaways was recorded in advertisements posted by their masters. They took care in detailing the physical description of the person fleeing, with special attention to the clothing on their body and in their possession. English records like these have been mined by scholars like John Styles, and American records have been more recently

¹¹⁴ Matthew Walker. *Matthew Walker to Stephen Girard December 7, 1810*. Letter. From Girard College. *Stephen Girard Papers*. Letter Book 9, 184.

¹¹⁵ Matthew Walker. *Matthew Walker to Stephen Girard, December 18, 1810*. Letter. From Girard College. *Stephen Girard Papers*. Letter Book 9, 180.

¹¹⁶ Stephen Girard. *Stephen Girard to Matthew Walker, December 21, 1810*. From Girard College. *Stephen Girard Papers*. Letter Book 9, 182.

¹¹⁷ John Bach McMaster. *The Life and Times of Stephen Girard, Mariner and Merchant* Vol. 2. (Philadelphia, J.B. Lippincott Company, 1918), 146.

explored by Rebecca Fifield for holistic understanding of the clothes worn by the colonies' laboring class.¹¹⁸ Runaway advertisements in Pennsylvanian newspapers confirm what records of Girard's apprentices' clothing prove: Germantown stockings were commonly part of the wardrobe of the early American working man.

But hidden inside a sailor's shoe or a soldier's boot, Germantown stockings also lived private lives out of the public eye. Like shoes, stockings are at the mercy of the foot's journey, through all manner of weather and across all manner of landscapes, a blur of cobbled streets and dirt roads, workshop floors and ship decks, battle fields and plowed pastures. They function as a membrane between the outside world and the body, serving as second skin. Elements from outside will attempt to penetrate to the skin; stockings will absorb dirt and water. Temperatures may rise or fall; linen stockings allow the body to breathe, while woolen stockings protect vulnerable podiatric extremities from bitter cold. The body may sweat or bleed, and stockings will retain record in the form of stains. As the knit fabric wears under pressure and friction between the foot and the shoe, holes appear, which must be mended. Human use is unforgiving to the life of a Germantown stocking, requiring care and repair, and the hands that performed this work in eighteenth-century Philadelphia were predominantly female. Evidence of that crucial, gendered labor was often invisible to public viewers. This chapter considers the visible and invisible material features of Germantown stockings, and by extension their visible and invisible wearers and

¹¹⁸ John Styles. *The Dress of the People: Everyday Fashion in Eighteenth-Century England*. (New Haven and London: Yale University Press, 2007). Fifield, Rebecca. "Had On When She Went Away...": Expanding the Usefulness of Garment Data in American Runaway Advertisements 1750-90 through Database Analysis." *Textile History* 42:1 (May 2011), 80-102.

repairers during a burgeoning era of patriotic consumption and domestic manufacturing.

Germantown Stockings as Recognizable Garments

Throughout the eighteenth century, multiple runaway ads for fleeing male indentured servants, apprentices, and enslaved men in Pennsylvania and New Jersey indicated that Germantown stockings were part of their attire.¹¹⁹ The occupations of these runaways ranged. Robert Galbraith, a twenty-year-old Irish shoemaker by trade, turned servant to Quaker tavernkeeper Joseph Gibbons Jr. in Springfield, Pennsylvania was wearing “new blueish Germantown stockings” when he fled his master with fellow servant Sarah Spencer in 1766. Patrick White, a twenty-three-year-old Irish immigrant reluctantly working iron at Moselem Forge in Berks County described as

¹¹⁹ While indentured servants, apprentices, and enslaved individuals all experienced varying degrees of labor that was not their own, I want to acknowledge that these three groups are not equivalent in experience. An indentured servant in early America signed a contract to perform work for a set amount of time, with the implication that their work paid off some sort of monetary debt (commonly payment of passage across the Atlantic). An apprentice signed a contract as well for a set amount of time, but their contract guaranteed that they would be taught a specific trade by their master and complete their time with a specific skillset gained. Indentured servants were not given this guarantee of skill set, thus their work could entail domestic work and farm labor in addition to work in a specific trade. An enslaved individual signed no contract and expected no end to their labor; they were viewed as property. The conditions, care, and overall wellbeing of these three forms of laborers could range, with varying relationships to objects like clothing they owned or wore. All forms of bound work, however, had the capacity to produce unhappy people who fled their masters, resulting in intense scrutiny of their bodies and personal effects.

“very loath to work, but much inclined to loll and sleep” wore “Germantown light blue woolen stockings” when he ran away, along with “two new ozenbrigs shirts, one new ozenbrigs and check pair of trousers.”¹²⁰

A 26-year-old enslaved man named Bob fled Lancaster on December 7th, 1775 while wearing “a drab coloured coatee, elk skin breeches, Germantown stockings, and good shoes” in hopes of escaping his owner, tavern-keeper George Moore.¹²¹

Attempting to escape contract or enslavement, these individuals ran the risk of recognition with distinctive articles of clothing. But what made Germantown stockings so recognizable that they needed no further description, and what did it mean to buy or wear them?

Without surviving stockings to examine for definitive answers, analysis of the material evidence that led to their distinctiveness is physically impossible but can be surmised by the qualities identified by processes described in Chapter 2. The color, material, and fulled appearance of Germantown stockings could have been actively recognized by early Americans, who had a more intimate understanding of materials than most consumers today. Common characteristics listed in advertisements, account books, and probate inventories narrow the list; eighteenth century frame-knit Germantown stockings were most commonly made of wool, dyed blue, and slightly fulled. The search for extant Germantown stockings in collection continues, but a possible contender is a pair of blue frame knit stockings from 1799, belonging to

¹²⁰ “5 pounds reward” *The Pennsylvania Gazette*. May 4, 1769. Accessible Archives. Accessed December 31, 2019.

¹²¹ “Lancaster” *The Pennsylvania Gazette*. November 7, 1775. Accessible Archives. Accessed March 7, 2020.

George Brinton of the Brinton family in Delaware (figure 1). Frame knit with blue and a thinner white ply held double, the mottled effect gives a “bluish” appearance described in advertisements. The feet are entirely white, and the toes are cast off with a three-needle bind-off method. On the white welt of the stockings, a maker’s mark, “C” is visible in eyelet stitches, just below the embroidery (figure 2). Residing in Chester County Historical Society, these stockings remain the closest pair that match historical descriptions for Germantown stockings such as a 1773 runaway advertisement for John Burk wearing “good Germantown milled stockings, a thread of blue and a thread of white twisted together.”¹²² To an eighteenth-century Pennsylvanian, Germantown stockings would have been as recognizable as a modern-day trademark.

It is also possible that the Germantown stocking brand was expressed explicitly on the stockings themselves with an actual logo stamped onto the knit fabric. Surviving early nineteenth-century woolen stockings belonging to Thomas Jefferson, now residing in the collection of the DAR Museum, exhibit this form of branding (figure 3). Frame knit by British stocking company Pagets, Warner, and Allsopp between 1800-1820, Jefferson’s stockings are marked in black cross-stitch lettering “18 TJ 2” referring to his initials and the number of the pair, as well as two eyelet diamonds serving as makers marks (figure 4). Faint ink letters on the woolen fabric become clear under infrared light, revealing the manufacturer’s stamp.¹²³

¹²² “June 16, 1773.” *The Pennsylvania Gazette*. June 16, 1773. Accessible Archives. Accessed March 2, 2020.

¹²³ Linda Baumgartern. *What Clothes Reveal: The Language of Clothing in Colonial and Federal America*. (New Haven and London: Yale University Press, 2002), 45.

While this explicit form of manufacturing organization might seem incompatible with eighteenth-century cottage production, Germantown's German residents displayed a proclivity to organizing under a brand before. Germantown's seal, chosen by Pastorius at its founding, was in the shape of a clover, with each leaf representing one of the three main industries at the time: Vinum (a vine), Linum (a stalk of flax), and Textrinum (a weaver's spool).¹²⁴ The clover became a symbol used by multiple Germantown industries as a way of branding their business. Rittenhouse's watermark for his paper mill incorporated the clover into his design (figure 5). A 1696 Germantown law reveals that the clover had been branded onto all horses owned in the community, and recommended that "in order that the benefit of our best and most complete brand of the clover leaf registered in Philadelphia may be preserved strictly for the community," all horse owners who sold their horses to outside individuals should additionally brand the horse with a "G" alongside the clover.¹²⁵ Given the popularity of the Germantown clover, it is entirely possible that Germantown stockings were distinctive because they were actually branded by a manufacturing stamp, perhaps in the shape of a clover. As ink marks on stockings fade easily and only appear under infrared light, manufacturing stamps are harder to detect on worn, eighteenth-century stockings, leaving this mystery (for the time being) unsolved.

¹²⁴ Samuel W. Pennypacker. *The Settlement of Germantown, Pennsylvania and the Beginning of German Emigration to North America*. (Philadelphia: William J. Campbell, 1899), 307.

¹²⁵ Pennypacker, *The Settlement of Germantown, Pennsylvania*, 333.

Hosiery Stores

The power of the Germantown stocking brand permeated through Pennsylvania, Delaware and New Jersey in the eighteenth century, but after 1800 extended further into areas like Baltimore, Washington DC and Boston, and as far west as Ohio.¹²⁶ As the brand extended and early American consumption habits changed, terminology also changed within the stocking industry. Germantown linen weavers and stocking weavers brought their wares to the corner of Market and 2nd street to sell their goods, but this practice was less common towards the end of the eighteenth century. Some Germantown *frame knitters*, like Alexander Mack Jr., continued more direct customer relationships and individual orders, but others began to call themselves *hosiers*, which designated that they operated a more formal retail space that could have consolidated other frame knitters' work in addition to their own for sale, with ready supply on hand. This change in terminology on Germantown tax records shifts after the Revolutionary War's completion, but hosiery shops in Philadelphia existed earlier. The first formal hosiery store advertised in Philadelphia was the Hand in Hand Stocking Manufactory in 1766, which was run out of the home of famed Philadelphian physician Dr. Thomas Bond on Norris Alley between 2nd and Front Street. His son, Thomas Bond Jr., was employing a frame knitter named Daniel Mause to produce domestically-made stockings, likely taking advantage of the reputation Germantown frame knitters has built for Pennsylvanian stockings in general. By 1772, however, Bond Jr had changed his tune slightly, no longer exclusively carrying American-made stockings, due to the presence of ribbed hose and

¹²⁶ "Barr and Campbell." *The Supporter and Scioto Gazette*. December 1, 1825. Chronicling America. Accessed November 20, 2019.

silk stockings among his inventory, although Germantown stockings were listed among the offerings.¹²⁷ Within Philadelphia, hosiery shops carried Germantown stockings in addition to imported stockings, as well as knit gloves, caps, and breeches. Hosiery stores carrying Germantown stockings included Bond and Byrne (1763), George Bartram at the Sign of the Golden Fleece (1773), Samuel Lippincott's (1809), C Woodman and Morgan (1821), C&N Jones (1824), and Samuel Whittle's Cheap Hosiery (1827), the vast majority of which were concentrated in a two block area of Philadelphia between 2nd and Front Street, and Chestnut and Walnut Street. This area had convenient proximity to the wharf and also encompassed where Germantown stockings were directly sold on the corner of 2nd street by Germantown residents (figure 6).¹²⁸ These stores made up a hosiery district in Philadelphia, where local customers could purchase their Germantown stockings. In addition to Philadelphia-based merchants, Germantown stockings were shipped along the east coast and moved west, advertised and recognized by their name alone.

¹²⁷ "To be sold, by Thomas bond, Junior, at his store at the corner." *The Pennsylvania Gazette*. September 30, 1772. Accessible Archives. Accessed March 8, 2020.

¹²⁸ "Bond and Byrne." *The Pennsylvania Gazette*. September 15, 1763. Accessible Archives. Accessed March 2, 2020. "Just imported, in the last vessel from Britain and Ireland." *The Pennsylvania Gazette*. May 12, 1773. Accessible Archives. Accessed March 25, 2020. "Stocking Manufactory. Thomas Bond, junior, at his house in Second." *The Pennsylvania Gazette*. September 22, 1768. Accessible Archives. Accessed October 22, 2019. Samuel Lippincott. *Samuel Lippincott Clothing Receipt for Stephen Girard May 29, 1809*. Receipt. From Girard College. *Stephen Girard Papers*. C. Woodman and Morgan. *C Woodman and Morgan Clothing Receipt for Stephen Girard October 20, 1821*. From Girard College. *Stephen Girard Papers*. C & N Jones. *C & N Jones Jrs. Clothing Receipt for Stephen Girard January 4, 1824*. Receipt. From Girard College. *Stephen Girard Papers*. Samuel. S. Whittle *Whittle Clothing Receipt for Stephen Girard November 22, 1827*. Receipt. From Girard College. *Stephen Girard Papers*.

Patriotic Consumption, Public Scrutiny

Stockings, by their very nature, are objects split between public and private viewers. The feet remained hidden inside shoes, but above the ankle and below the knee, stocking legs were eligible for public view. The knit fabric that clothed calves and shins, bearing design choices like color, clocking, and patterning, conveyed fashionable messaging alongside other elements of dress including that of the wearer's wealth. Before breeches fell out of fashion in favor of long trousers in the early nineteenth century, men's stockings in particular were displayed openly to the general public (figure 7). When fellow Pennsylvanians were observing the Germantown stockings on the legs of runaways, regardless of whether it was due to inherent qualities of the garment or an explicit manufacturer's stamp, they were recognizing an early American brand.

The high quality of Germantown stockings certainly fueled the popularity of the product, but it was also bolstered by the words of the fledgling American government as they concentrated on promoting domestic manufacturing. Due to strained relations with Britain after the Revolutionary War and the wish to strengthen domestic production, Germantown stockings were consistently upheld as an example of what an American industry could be. An editorial published to promote American industry described Germantown stockings "of the same fineness with imported stockings...it is a *well known fact* that three pair of Pennsylvania made stockings will wear longer than four pair of those imported."¹²⁹

¹²⁹"Philadelphia, June 25." *The Pennsylvania Gazette*. June 23, 1788. Accessible Archives. Accessed October 22, 2019.

The promotion of cotton and Germantown stockings were also entwined. In 1788 Philadelphia procured two carding and spinning machines, which would “afford immediate employment to our stocking-weavers in Mulberry Ward and Germantown” given that “the duty on hosiery is considerable which will exceedingly favor the manufacture.”¹³⁰ Daniel Mause, a hosier who carried Germantown stockings at the Hand in Hand Stocking Manufactory in partnership with Thomas Bond Jr., coaxed customers with a 1766 advertisement announcing his work in hopes that “the good people of this and the neighboring provinces, will encourage this his Undertaking at a time when *America* calls for the endeavors of her *Sons*; and as the goodness of *Pennsylvania made stockings* is so well known, and so universally esteemed...he gives the best Prices...of the produce and manufacture of *America* only.”¹³¹ The distinctiveness of Germantown stockings and their heavy promotion as a patriotic industry meant that observers could tell who was monetarily supporting American manufacturing with their consumer habits with a single glance at their legs. Lawrence Glickman’s *Buying Power* argues that early American consumers were conscious of their buying impact, and the decision to purchase or boycott certain items resulted in conscious consumption as a political act. Germantown stockings were yet another early American object to consume with deliberateness.

Patriotic consumption was common before and after the Revolutionary War, with the former focused more on individual fashion and the latter on support of

¹³⁰“The manufacturing society of this town.” *The Pennsylvania Gazette*. March 29, 1788. Accessible Archives. Accessed December 31, 2019.

¹³¹“Daniel Mause hosier at the sign of the hand in hand stocking.” *The Pennsylvania Gazette*. May 1, 1766. Accessible Archives. Accessed March 3, 2020.

domestic manufacturing. Laurel Thatcher Ulrich's groundbreaking work *The Age of Homespun* unravels the idealistic mythology of women working at spinning wheels in reassurance of their early American domestic roles, and in doing so examines their concrete contributions in household textile production in response to a boycott on British goods.¹³² In the 1760s, to wear homespun was to express patriotic sentiment to the colonies' cause in recognizable, public ways by individual fashion. After the war, American-made goods were just as scrutinized, but focused more on supporting budding domestic industry. In anticipation of public scrutiny, George Washington made sure to wear a woolen coat made from fulled American cloth at his 1789 swearing in as President of the United States.¹³³ The decision to patriotically consume textiles cannot be solely attributed to the owners of the garments, but also those with the purchasing power to consciously select these items. Ellen Hartigan-O'Connor's *The Ties that Buy* postulates that these economic decisions were primarily made by women.¹³⁴ Germantown stockings fulfilled both areas of patriotic consumption straddling the Revolutionary War. Ulrich notes that the "seemingly private life of households" and "the public worlds of commerce and politics" were bridged by material goods in the eighteenth century, and Germantown stockings served as only one set of objects traversing these realms.¹³⁵ Whether an individual fashion decision

¹³² Laurel Thatcher Ulrich. *The Age of Homespun: Objects and Stories in the Creation of an American Myth*. (New York: Alfred A. Knopf, 2001), 177-183.

¹³³ Coat. Mount Vernon Ladies' Association. Accession number: W-1063.
<https://tinyurl.com/tcylbyj>

¹³⁴ Ellen Hartigan-O'Connor. *The Ties that Buy: Women and Commerce in Revolutionary America*. Philadelphia: University of Pennsylvania Press, 2011), 180.

¹³⁵ Ulrich, *The Age of Homespun*, 143.

to signify the cause of independence or as testament to domestic textile industry, to wear them in public displayed patriotic sentiments.

Identities of Germantown Stocking Wearers

Thanks to its distinctiveness, the Germantown brand and its consumer-facing connections can be traced onto the diverse feet of early Americans. In the case of Thomas Little, Robert Galbraith, or Sam, the problematic power dynamics and hierarchies behind indentured servitude, apprenticeship, and slavery meant that choice of clothing was often not their own. Their masters likely selected Germantown stockings for their durability in hopes they would not have to replace their stockings as often, explicitly supporting domestic manufacture in the process. The occupations of apprentices and servants in complex power relationships to the clothing they wore ranged from blacksmiths, shoemakers, household servants, weavers, sailors, and even a chocolate grinder.¹³⁶ But other laboring Pennsylvanians willingly chose Germantown stockings. For example, William Reed, a weaver, was wearing “light blue Germantown stockings” when he pretended to try on a brown bearskin coat with cape that was being made for him by Jacob Kaiser and then ran off wearing the garment half-completed.¹³⁷ The occupations of Alexander Mack’s customers included

¹³⁶ “Run away from Roger Hiffernan, chocolate grinder, living in.” *The Pennsylvania Gazette*. March 25, 1755. Accessible Archives. Accessed March 2, 2020.

¹³⁷ “December 29, 1768.” *The Pennsylvania Gazette*. December 29, 1768. Accessible Archives. Accessed December 31, 2019.

a blacksmith, carriage-maker, tavern-keeper, carver, and saddle-maker. Germantown stockings even clothed the feet of the men who made them. Instead of making himself a pair of stockings, Alexander Mack documented a purchase of stockings for himself from neighboring frame knitter Frederick Haas.¹³⁸ Frame knitters, just like other laboring Philadelphians, were consumers just as much as they were producers.

In addition to early governmental support that infused Germantown stockings with patriotic meaning, Germantown stockings were entangled in the German identity of those who made and bought them. Unsurprisingly, eighteenth-century Germantown stockings were sold frequently within German networks, documented by the consumers listed in Alexander Mack Jr.'s account book and general store ledgers in western Pennsylvania and New Jersey. The customer list within Mack's account book reflects the reach of the Germantown brand in some of its earliest years. He sold stockings to neighbors within Germantown, such as Johann Christoph Sauer Jr., who commissioned stockings in 1772 for all family members including "a pair with white clocking for his little Chatarina."¹³⁹ Mack also made multiple pairs of stockings for Sauer's hired men and maid servants over the course of his career. Sauer Jr.'s family—one of the wealthiest in Pennsylvania due to their German printing business—likely decided to purchase Alexander Mack Jr.'s work due to shared religion, and the close relationship between both their fathers. Alexander Mack, founder of the Schwarzenau

¹³⁸ Durnbaugh, Donald F. and Edward E. Quinter, editors. *The Day Book/Account Book of Alexander Mack, Jr. (1712-1803)*. (Kutztown: The Pennsylvania German Society, 2004), 180.

¹³⁹ Referring to Catherine Sauer, Christopher's daughter. Durnbaugh and Quinter, editors. *The Day Book/Account Book of Alexander Mack, Jr. (1712-1803)*, 178.

Brethren and Christopher Sauer, most famous for printing the first German-language bible in North America, were personally connected while Mack sought refuge in Wittgenstein due to his radical religious beliefs.¹⁴⁰ Mack died shortly after arriving in Germantown in 1735 and Sauer followed in 1758, but their sons Mack Jr. and Sauer Jr. would share this religion and jointly offer ministerial authority over Germantown's Brethren congregation. They each officiated the other's wedding and shared a close friendship throughout their lives. While Mack would maintain his steady income until his death in 1803, Sauer would lose almost everything due to his pacifist religious views which were misinterpreted as loyalty to England. In 1778 he was targeted by the Continental Army, stripped naked, covered in paint, and forcibly shaved. He was then ejected from his Germantown home, and all his possessions, including his printing equipment, were sold off.

A 1775 entry for a pair of stockings for "his wife Sister Sauer" complicates assumptions of gender and religion in Germantown stocking wearers. While most documentation for Germantown stockings points to exclusively male wearers, Mack's account book has many stockings listed for men, women, and children, in addition to gloves and caps. While Germantown stockings are clearly the preferred garments for working men, this variety within the industry is important to note. Mack's account book frequently mentions producing stockings for other other Brothers and Sisters of Brethren faith, and selling larger amounts to Brethren outside of Germantown for wholesale prices, presumably for further sale. One of those deliveries went to Heinrich

¹⁴⁰ Hans Leaman. "Johann Chrisoph-Sauer-Pioneer of the German-American Press." *Immigrant Entrepreneurship: The German-American Experience since 1700*. (German Historical Institute, 2016), 94.

Hert Landis, living in Amwell Township, New Jersey, who received “three dozen stockings...at 2pds/10 shillings per dozen” in 1764.¹⁴¹ Customers from Methacton, Ephrata and Reading, Pennsylvania reflected the paths trod by Brethren as they spread their faith and families westward. What did it mean to Pennsylvania German immigrants to see the handwork of their people on the feet of everyday early Americans, in addition to their own? We can only speculate on the messages of place and German immigration imbedded in these objects, but their Germanness mixed with patriotic sentiment in such a way as to make them inseparable.

Prior to the Battle of Germantown on October 4, 1777, Germantown stockings could be found on the feet of Revolutionary War soldiers. Tench Coxe’s 1810 *Statement of the Arts and manufactures of the United States of America* noted that the fulfilled nature of Germantown stockings “particularly adapts them *to the comfort and trying service of the army*.”¹⁴² 4,000 pair of stockings were sent to Albany as supplies for the Continental Army and Pennsylvania stocking weavers would have likely contributed more had not occupation of British troops in Philadelphia and Germantown rendered stocking frames inactive. British troops were also likely wearing commandeered Germantown stockings, taken by force. On March 7th 1778, British light infantry returned to Germantown, “broke many windows, seized all the

¹⁴¹ Durnbaugh and Quinter, editors, *The Day Book/Account Book of Alexander Mack, Jr. (1712-1803)*, 86.

¹⁴² Tench Coxe. *A Statement of the Arts and Manufactures of the United States of America, for the Year 1810* (Philadelphia: Printed by A. Cornman, 1814), xxx, <http://tinyurl.galegroup.com.udel.idm.oclc.org/tinyurl/9MqTz2>.

leather, stockings...and returned to Philadelphia in the evening of the same day.”¹⁴³ Covering the feet and legs of men for warmth and protection, stockings were essential garments. Under close scrutiny due to need, stockings were especially observed by those who did not have them, and stripped from the dead for those still alive if still wearable. Not all stockings were. Many were worn to rags as Washington’s troops wintered at Valley Forge, where clothing and food were in high demand and short supply. For the 2,000 men who died of disease, cold, or starvation during the 1777-78 winter at Valley Forge, many went barefoot to their graves (figure 8).

Beyond Consumption: Stocking Care

After their initial purchases, the diverse customers of the Germantown stocking industry would wash and repair their stockings as they grew dirty and damaged from wearing. Stockings in general received more frequent washings than most clothing items in an eighteenth-century wardrobe, as they were worn next to the skin. The bulk of laundry was made up of linen and cotton undergarments and household linens, which notably included stockings. A taxing profession predominantly practiced by women, laundry was offered as both a service where laundry could be sent outside the home for cleaning or a service that a laundress could practice inside her customers’ homes. Elizabeth Drinker notes these options in her diary in July 1794: “Our people

¹⁴³ “Head-Quarters Valley Forge, February 18, 1778.” *The New-London Gazette*. March 13, 1778. Reprinted in *Writings from the Valley Forge Encampment of the Continental Army December 19, 1777-June 9, 1778 Vol. 2*. (Westminster: Heritage Books, Inc., 2019), 60.

here have been busy to day washing. We hired a Dutch woman named Kosanna to assist. Washing at home is a new business to me, having been in the practice ever since we were married of putting out our washing.”¹⁴⁴ Laundress services were not explicitly advertised in Philadelphia newspapers at this time, suggesting that their services were offered by word of mouth within community networks. In *Madam Johnson’s Present: Or, Every Young Woman’s Companion in Useful and Universal Knowledge* 1753 edition, instructions for a beginner laundress provided this recipe for washing thread and cotton stockings:

Let them have two Lathers and a Boil, having blued the Water well, wash them out of the Boil, but don’t rinse them; then turn the wrong Sides outwards, and fold them very smooth and even, laying them one upon another, and a Board over them, with a Weight to press them smooth. Let them lie thus about a Quarter of an Hour, after which hang them up to dry; and when thoroughly so, roll them up tight, without ironing, by which Means they will look as new.¹⁴⁵

For woolen stockings, the only difference in direction was cold water instead of warm water, and no soap rubbed directly on them, likely in an attempt to minimize further unwanted felting or fulling. Manuals like Madam Johnson’s remind us that while laundresses were a distinctive profession for women to earn wages, laundry was also practiced as part of expected household maintenance by early American mistresses, servants, and enslaved women.

¹⁴⁴ Elizabeth Drinker. *Extracts from the Journal of Elizabeth Drinker, from 1759 to 1807*. ed. Henry D. Biddle. (Philadelphia: J.B. Lippincott Company, 1889), 231.

¹⁴⁵ Madam Johnson. *Madam Johnson’s Present: Or, Every Young Woman’s Companion in Useful and Universal Knowledge* 4th ed. (Dublin: James Williams, 1753), 177.

The act of clothes washing was an ideal moment to identify areas of textile damage in need of repair. As laundresses inspected garments closely to identify spots and stains for targeted removal, this scrutiny likely identified holes or damaged fabric as well. It is unclear whether a laundress could be expected to mend damaged clothing as part of her services or whether cleaned garments would then be primed for repair by the female head of a household (or under her direction, her hired or enslaved help). Regardless, the cyclical act of cleaning clothing is linked with that of repair, and both were practiced informally and formally by eighteenth-century women maintaining the textiles of the home of various races and social statuses.

Stocking Repair

Germantown stockings endured heavy use, which may be partially responsible for why no provenanced pairs survive in collections today for study of their wear and repair. But their wear practically guarantees that they were also repaired during their lifetimes—even the most expensive pairs of stockings underwent mending campaigns. For example, over 20 pairs of stockings worn by Stephen Girard (1750-1831) survive as testament to the unpredictable condition of stockings seen only from the ankle up. Stephen Girard was—by far—the wealthiest man in America for much of his life, and his French silk stockings reflected that wealth by clothing his feet and legs in the finest materials on the market. Yet all surviving pairs of his silk stockings, including a particular pair of made of variegated grey silk, are extensively darned in the feet, unbeknownst to the public while worn with shoes (figure 9).

There are three distinct forms of post-creation repair work present on this pair of stockings: reinforced heels, woven darning, and duplicate-stitch darning, also known as Swiss darning. The reinforced heels of Girard's stockings almost escape notice when examining from the outside, due to tiny pinpricks of thread barely penetrating the knit fabric exterior. But upon turning the stocking inside out, layers of couched cotton thread in the heel are obvious (figures 10-11). Reinforced heels provided extra cushion for the wearer and an additional layer of threads between the foot and the actual stocking fabric, which can help delay eventual worn spots in the heel.¹⁴⁶ This work could be done almost immediately after purchase on an unworn stocking, maintaining the new quality of the stocking heel as long as possible.

The mass of coarser, white cotton threads on the stocking foot is decidedly less subtle, with repairs so thick it creates an entirely new fabric (figure 12). This woven darning is the most common technique and would have been basically understood by a large majority of early Americans who practiced plain sewing. For woven fabric, this technique is generally a successful way to mend fabric, mimicking the warp and weft with new thread to fill the hole. For knit fabric, however, woven-structure darning is not wildly successful due to incompatibility of using recreated warp and weft on a fabric constructed by a series of loops.

A more compatible way to darn knit fabric is with Swiss darning, where the mender uses a sewing needle to recreate knit loops and anchor loose ones back into the fabric. In a brown silk thread similar to the original material, two patches of Swiss

¹⁴⁶ Heels and feet of stockings are the most worn on all the stockings I've seen, followed by runs in the knit fabric where a stitch has unraveled that aren't fixed properly.

darning on the back of the stocking heel mend the hole much more seamlessly (figure 13). Woven darning was likely chosen over Swiss darning due to the constraints of light and time. Picking up and recreating each tiny knit stitch on a stocking required both visibility and the time to complete the project, so as a result this repair was most commonly paid for by wealthier owners of knit fabrics.¹⁴⁷

Darning and mending were plain sewing skills, taught to the overwhelming majority of early American women. In addition to pictorial samplers executed by young women to practice and display their plain sewing skill with a needle, darning samplers were also common. A 1790-1830 darning sampler in the Winterthur collection, signed by Anna Hofmann with a possible Pennsylvania provenance, displays 25 blocks of mending techniques that mimic both woven and knit patterns (figure 14). The top row specifically mimics mending rips in the woven fabric,

¹⁴⁷ Stephen Girard's household was full of women well-equipped to mend his stockings. His wife, Mary, was institutionalized in the Pennsylvania Hospital in 1790 due to "uncontrollable outbursts and violent rages," during which Girard developed a sexual and contractual relationship with Sally Bickham, a seamstress, from 1787 to 1796, as mistress and housekeeper. After nine years, Sally married and left Girard, and he began a relationship with twenty-six-year-old laundress Polly Kenton, who was also twenty six years younger than Girard when their involvement began. Girard and Kenton's relationship continued for 31 years, and Kenton ran Girard's household until 1827. In addition to regular household expenses such as clothing and other domestic necessities, Kenton also placed orders for "darning thread and needles" for the household in 1819. Girard also kept an enslaved woman named Hannah, who he freed posthumously in 1831. Repair work for Girard's stockings could easily have accomplished by Sally, Polly, or Hannah, and possibly all three given the difference in repair techniques. Girard also purchased "a pair of stocking boards at 3 shillings and 9 pence a piece" in 1789 from Quaker cabinet-maker Daniel Trotter, which implies that some portion of his stockings were also washed and reblocked in-house. Daniel Trotter. *Daniel Trotter Bill for Stephen Girard, November 19, 1789*. From Girard College. *Stephen Girard Papers*.

increasing in amount of damage from left to right (figure 15). The last two squares have holes in the fabric, with one mended to mimic woven fabric structure and the other to mimic knit fabric (figure 16). As demonstrated by Anna Hofmann, knowledge of knit fabric repair was an expected part of a women's plain sewing education.

Refooting, or knitting an entirely new foot on a stocking when the original knit fabric is too damaged to effectively mend with darning techniques, was another common repair technique practiced by hand knitters and frame knitters on Germantown stockings. A pair of frame-knit linen stockings worn by Jane Pyle Brinton (1776-1860) in the Chester County Historical Society's collection reflects this technique.¹⁴⁸ From the ankle up, the stained stocking was frame knit flat in white linen and sewn up the back with mattress stitch. From the ankle down, the foot has been reknit in grey linen by handknitting so that the frame knit seam of the stocking flows neatly into a mock seam in the handknit heel, which is created by a purl stitch at the beginning of every handknit round (figure 17). The frame knit portion of the stocking was likely made by a male frame knitter, while the bottom half was likely knit by Jane Pyle Brinton herself.

In the 1788-1812 farm account books of George Brinton, Jane's husband, records show that hired hands for household and farm labor were commonly provided stockings during their employment, though not for free. In 1812, Julius Richardson, a

¹⁴⁸ Jane Pyle Brinton was the wife of George Brinton, who owned a pair of possible Germantown stockings pictured in Figure 1 of this chapter. If George's pair of stockings were indeed made in Germantown, Jane's refooting techniques displayed on her pair of stockings and the records of that practice in George's account book show specific repair skills that could have been wielded on Germantown stockings specifically.

household servant, had “feeting one pair of stockings and finding yarn, .88” subtracted from his wages.¹⁴⁹ Richardson’s new knit stocking feet would most likely have been handknit in the round, possibly by Jane or another of her female servants. The process of refooting stockings could also have been done by frame knitters on their frames. Germantown frame knitter Alexander Mack notes “footing” multiple pairs of stockings for the local sheriff, William DeWees, in addition to creating new stockings.¹⁵⁰ This process likely meant cutting away the damaged foot fabric and opening the stocking fabric flat, reattaching the raw loops to the corresponding bearded needles, and frame knitting an entirely new foot flat before resewing again. While this approach could have provided a more seamless repair to a frame-knit stocking, a frame knitter’s repair certainly would have been a more expensive repair than a hand-knitter’s repair. Whether hand-knit or frame-knit, refooting would have been a repair technique invisible to the public viewer that extended the life of a Germantown stocking.

In the case of Germantown stockings in eighteenth-century Philadelphia, repair work could be executed by women within the household or professionally contracted. Many of the same women advertised in the *Pennsylvania Gazette* during the eighteenth century for their ability to sew up new stockings and graft stocking toes also mentioned stocking repair, like Ann Scotton, who advertised in 1754 that she

¹⁴⁹ George Brinton. *Account Book 1798-1812*. Account Book. West Bradford Township Business Houses, Township Files, Chester County Historical Society Library, West Chester, PA.

¹⁵⁰ Durnbaugh and Quinter, editors. *The Day Book/Account Book of Alexander Mack, Jr. (1712-1803)*, 91.

“grafts stockings of all sorts, whether silk, cotton, or worsted, in the neatest manner...likewise neatly runs stockings at the heels, and makes children’s stockings, and also muffatees.”¹⁵¹ Within Philadelphian networks of the stocking industry, the cyclical nature of stocking production, care and repair began and ended with women.

Of course, anomalies do exist, and they generally arise in times of instability or male-dominated spaces. Kathleen Brown notes in her work *Foul Bodies* that while laundry was certainly preferred to be handled by groups of women in colonial America, this was not always possible.¹⁵² Soldiers and sailors, documented owners of Germantown stockings with far too infrequent access to laundresses and other women who could maintain their clothes, had to occasionally rely on their own skill with a needle to repair their own garments. One Continental Army surgeon in his diary during the Valley Forge winter of 1777 spent his New Year’s Eve gaining this skill, “Adjutant Selden learn’d me how to Darn stockings—to make them look like knit work.”¹⁵³ Christopher Hawkins, an American sailor during the Revolutionary War, recalls in his memoir instructions from his captain to take his apparel to a laundry woman for same-day cleaning during their docking at New York, exhibiting a clear wish for established laundress’ services if they were available.¹⁵⁴ While many pairs of

¹⁵¹ “Ann Scotton, in front street.” *The Pennsylvania Gazette*. May 23, 1754. Accessible Archives. Accessed October 22, 2019.

¹⁵² Kathleen Brown. *Foul Bodies: Cleanliness in Early America*. (New Haven, Yale University Press, 2011), 66.

¹⁵³ Albigen Waldo. “Valley Forge 1777-1778. Diary of Surgeon Albigen Waldo, of the Connecticut Line.” *The Pennsylvania Magazine of History and Biography*, Vol. 21. (1897), 299-323.

¹⁵⁴ Christopher Hawkins. *The Adventures of Christopher Hawkins: Containing details of his captivity, a first and second time on the high seas, in the Revolutionary War, by*

Germantown stockings were certainly mended by their male hands, it is important to note that the preference and overwhelming majority of repair was worked by female hands in and out of their owners' homes.

Despite the hidden nature of most mending techniques on stockings, repair occasionally received public scrutiny. Some runaway advertisements also referenced any repairs that might have been on the clothing last seen on the individual they were seeking, like William Wright, who absconded with multiple articles of clothing, including a pair of stockings "with a hole darned in the leg on one of them" on a summer's night in June 1772. Distinctive stocking mending, under public scrutiny, could also serve as a key characteristic resulting in the recognition and return of a fleeing runaway.

The Federal Procession on July 4, 1788 in Philadelphia was a celebration of newly minted American identity and manufacturing might. In the aftermath of the Constitution's ratification, a parade of 5,000 men representing 45 of the new nation's various industries was the perfect public display to solidify mental correlation of industrial success with new government. Over 17,000 spectators witnessed the mile-and-a-half long spectacle as it snaked from Third and South Street to the lawn of Bush Hill Mansion, led by a thirteen-foot high American eagle holding a replica of the Constitution, signed by "the people" in gold lettering. Elaborate floats bordered on the absurd: mock workshops representing various trades carried artisans in action, a fully operational chimney allowed bakers to bake loaves while on the move and throw the

the Jersey Prison Ship, Then Lying in the Harbour, by swimming. ed. Charles I. Bushnell (New York, Privately Printed, 1864), 47.

fresh bread into the crowd, while on the textile manufacturing society's float, a woman operated a spinning jenny while a man wove with a fly shuttle. The stocking manufacturers had their own float with 30 frame knitters represented, headed by a Mr. George Freytag carrying a white standard with the emblem of "a pair of blue stockings across—a cap above; finger mitts below, incircled with a gilded heart" and their motto 'The union of the American stocking manufacturers.'"155 The identity of Mr. Freytag is unknown, although his last name suggests he was German. The procession was aware of the prominence of Germans in Pennsylvania. The float representing the printers, book-binders, and stationers, complete with a working press striking off copies of patriotic poetry in English and in German while an actor dressed as Mercury sent small bound copies of poetry via pigeons into the crowd. Among the celebration of America's bright future, Germantown stockings had their role to play.

Marla Miller reminds us that in the Early Republic, an era "dominated by political, cultural, and social upheaval, clothing served critical public purposes."¹⁵⁶ For German wearers of Germantown hose, their clothing choice represented a relationship between a neighbor, a Brother, or a simply a fellow German immigrant who shared their language and possibly their religion. Perhaps they saw their identity reflected in this American stocking, and in wearing it felt a sense of place in their new nation. But what kind of new nation had they joined? The domestic manufacturing power of America was steadily growing, aided by skilled immigrant labor and new

¹⁵⁵ Francis Hopkinson. *An Account of the grand federal procession. Performed at Philadelphia on Friday the 4th of July 1788.* <https://tinyurl.com/ql7kbgp>

¹⁵⁶ Marla Miller. *The Needle's Eye: Women and Work in the Age of Revolution.* (Amherst: University of Massachusetts Press, 2006), 30.

technology, but the sense of identity infused in American-made goods was far from exclusive. America was struggling to properly evaluate systems of contracted and enslaved labor, with the latter instigating such divisive conversations that it led to the Civil War. By the turn of the century, the age of apprenticeship in Philadelphia was in decline, replaced by systems of wage labor and machine-based tasks.¹⁵⁷ What kind of America did Germantown stockings represent for a runaway apprentice, an unhappy Irish immigrant escaping servitude, or an enslaved man seeking freedom? For them, patriotic sentiment rang hollow, but was also less important than the scrutiny their bodies received while wearing distinctive articles of clothing.

In the Federal Procession, the human actors of Philadelphia's stocking industry only provided representation from 30 male frame knitters. But the numbers of individuals involved in the care and repair of the stockings they created are much more extensive, and primarily female. Did a spinner, stocking seamstress, or laundress in the crowd on July 4th, viewing the frame knitters' banner, connect herself with the industry? Perhaps not then, but we certainly should now. For the women who are documented in tasks of spinning, sewing, washing, mending, and knitting in connection with the frame-knitting industry, it would be a disservice to view these tasks as supporting roles for a man and his machine. If estimating the hours of women's contribution to an early American stocking's creation, finishing, and repair, calculate more generously than archival documents allow. An eighteenth-century frame knitter is only as productive as the community of women in which he is

¹⁵⁷ Ian M. G. Quimby. *Apprenticeship in Colonial Philadelphia*. (Newark: University of Delaware, 1963), 144.

immersed, and a frame knit stocking lasts much longer in a community of women who can care for it.

Runaway advertisements' words hold power, even when the person they are describing is physically free. Descriptions border on the acute, controlling reputation, questioning legitimacy of skill, and above all, reducing the subject to object by calculated descriptions of the fleeing body. Within their masters' verbal control, these bodies are described in hyper-detail. Scars, mannerisms, speech, skill, gait, and apparel are all captured, as any single detail might be enough to ensure the return of the body their master has lost. Germantown stockings in whatever state of wear or repair were no longer patriotic expressions, but liabilities for the wearer. In these moments, Germantown stockings rigidly enforce participation in an American existence, if only in prescribed roles that keep its systems of production operating smoothly and unchallenged.



Figure 28 A pair of frame-knit stockings owned by George Brinton and made in 1799. Stockings. Chester County Historical Society. Accession number: CLST17. *Courtesy of Chester County Historical Society. Photo by the author.*



Figure 29 The white welt of the stocking reveals a maker's mark "C" knitted in eyelet stitches, as well as the owner's markings cross stitched "GB 1799" "J." Closer examination of the blue body of the stocking shows that the color is a combination of a blue yarn and a thinner white yarn, producing a mottled blue color. Stockings. Chester County Historical Society. Accession number: CLST17. *Courtesy of Chester County Historical Society. Photo by the author.*



Figure 30 The pair of woolen frame-knit stockings on the right belonged to Thomas Jefferson. Stockings. *Courtesy of The Daughters of the American Revolution Museum, Washington, DC. Gift of Miss Olivia Taylor and Miss Margaret B. Taylor. Photo by the author.*

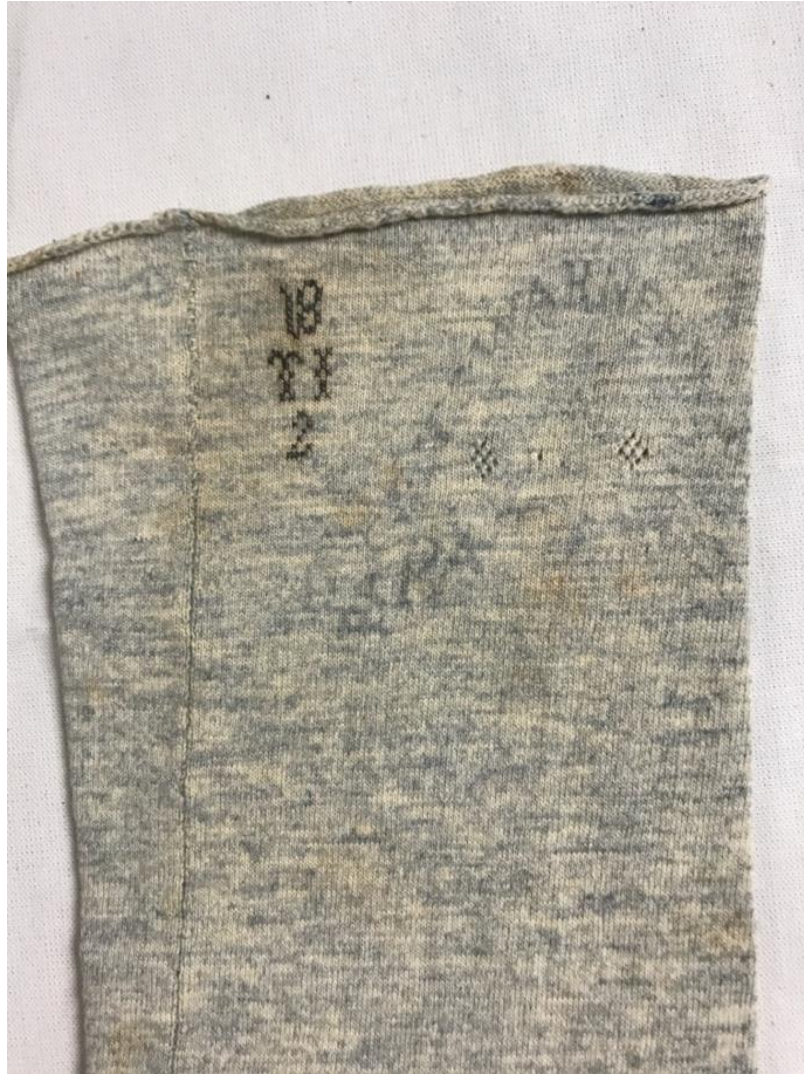


Figure 31 The welt of Thomas Jefferson's stocking reveals a maker's mark in the form of two diamonds made with eyelet knit stitches, as well as an owner's mark cross stitched "18 TJ 2." Faint traces of the stocking brand's stamp can be seen, although infrared light reveals the full stamp "Pagets, Warner & Allsopp Patent." Stockings. *Courtesy of The Daughters of the American Revolution Museum, Washington, DC. Gift of Miss Olivia Taylor and Miss Margaret B. Taylor. Photo by the author.*



Figure 32 A sketch of William Rittenhouse's watermark present on his Germantown-made paper, drawn by Samuel W. Pennypacker. Pennypacker, Samuel W. *The Settlement of Germantown, Pennsylvania, and the beginning of German emigration to North America* (Philadelphia: William J. Campbell, 1899), 218. This image is in the public domain.

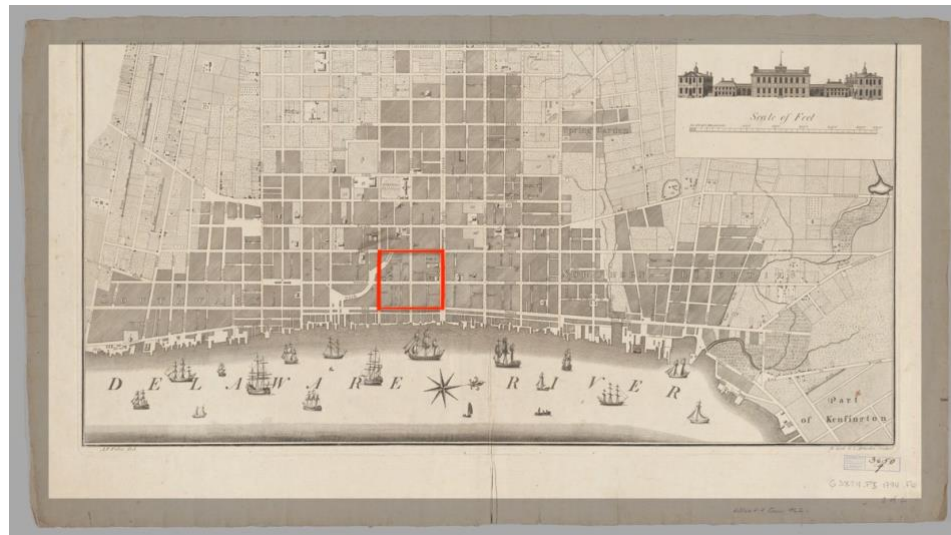


Figure 33 The blocks of Philadelphia's city streets outlined were the location of a large percentage of hosiery stores, in addition to the area where Germantown women would sell their stockings directly on the corner of Market and 2nd street. Map. 'To Thomas Mifflin, governor and commander in chief of the state of Pennsylvania, this plan of the city and suburbs of Philadelphia is respectfully inscribed by the editor, 1794: Southern Street. *Courtesy of the Harvard Map Collection, Harvard University Library.*



Figure 34 Charles Willson Peale's 1770 painting of John Beale Bordley reflects men's fashion around the time of the American Revolution, with breeches that prominently display stockings. *John Beale Bordley* Charles Willson Peale; 1770 oil on canvas. National Gallery of Art Accession Number: 1984.2.1. *Courtesy of the National Gallery of Art, Gift of the Barra Foundation, Inc.*



Figure 35 William Trego's 1883 painting *March to Valley Forge* illustrates the clothing conditions for foot soldiers during the winter of 1777, where many men wore damaged stockings until they fell apart and were forced to do without. *March to Valley Forge* William Brooke Thomas Trego, Philadelphia, Pennsylvania; 1883. Oil on canvas. Museum of the American Revolution, Conserved with Funds Provided by the Society of the Descendants of Washington's Army at Valley Forge. Accession Number: 2003.00.0415. *Courtesy of the Museum of the American Revolution.*



Figure 36 A pair of frame-knit silk stockings made in France and owned by Stephen Girard in the early nineteenth century show extensive darning in the feet. Stockings. Girard College Archives, Accession Number: 0323. *Courtesy of Girard History Collections, Philadelphia PA.*



Figure 37 The heels of Girard's stockings, while worn, only reveal small stitching on the outside. Girard College Archives, Accession Number: 0323. *Courtesy of Girard History Collections, Philadelphia PA. Photo by the author.*



Figure 38 When Girard's stockings are turned inside out, the cluster of couched threads that make up a reinforced heel are much more visible. Stockings. Girard College Archives, Accession Number: 0323. *Courtesy of Girard History Collections, Philadelphia PA. Photo by the author.*



Figure 39 Thick woven darning executed in white cotton has built up the feet of Girard's stockings over numerous mending campaigns. Stockings. Girard College Archives, Accession Number: 0323. *Courtesy of Girard History Collections, Philadelphia PA. Photo by the author.*



Figure 40 Two square patches of Swiss darning on the back heel of one of Girard's stockings would have been more time-consuming and costly to execute, but were both done with great care to match the original knit fabric as closely as possible. Stockings. Girard College Archives, Accession Number: 0323. *Courtesy of Girard History Collections, Philadelphia PA. Photo by the author.*



Figure 41 Darning sampler, Anna Hofmann, possibly England or North America, 1790-1830, Plain-woven linen and cotton thread, 1964.1702, Bequest of Henry Francis du Pont. *Courtesy of Winterthur Museum.*



Figure 42 The top row of Anna Hofmann's darning sampler is devoted to invisible darning techniques on plain fabric, with each block from left to right increasing in the extent of damage to the fabric. Darning sampler, Anna Hofmann, possibly England or North America, 1790-1830, Plain-woven linen and cotton thread, 1964.1702, Bequest of Henry Francis du Pont. *Courtesy of Winterthur Museum.*



Figure 43 The uppermost right corner of Anna Hofmann's sampler executes Swiss darning for repair of knit fabrics. Darning sampler, Anna Hofmann, possibly England or North America, 1790-1830, Plain-woven linen and cotton thread, 1964.1702, Bequest of Henry Francis du Pont. *Courtesy of Winterthur Museum.*



Figure 44 This pair of refooted frame-knit stockings belonging to Jane Brinton in the late eighteenth-century may also have been mended by her. The white cotton frame-knit stockings are seamed until the back of the ankle, where grey linen thread has been hand-knit in the round to refoot the stocking. Stockings. Chester County Historical Society. Accession number: CLST17. *Courtesy of Chester County Historical Society. Photo by the author.*

Chapter 4

ABSENCE AND AFTERLIFE

“Absences are not just what there is not, but rather what was there and now is not any longer, or what should be there and yet is not.”

-Elisa Adami

To study stockings is to make peace with absence. The search for Germantown stockings has taken me to clothing collections along the east coast, particularly in Pennsylvania, and in that process I have examined at least 300 pairs of stockings, many with evidence of complex relationships to the bodies who made, wore, and repaired them imbedded in their knit material. A final thought on a stocking's privacy and absence is best conveyed by a pair of early nineteenth-century silk stockings belonging to Jane Bowne Haines (1790-1843) of Wyck House in Germantown. I viewed them in the attic on a humid July afternoon, and I remember how the sunlight shown through the window to catch the stains on silk as I struggled to photograph this pair to my satisfaction. Silk stockings without bodies seem to take on almost liquid properties, draping and wrinkling almost as if in motion, even while lying flat on a table (figure 45). Two diamond maker's marks on the welts as well as the letter "C" above their seams reveal their frame-knit construction, and delicate clocking along the ankles in addition to their silk material confirm the pair's high quality. Evidence of ownership includes the cross-stitched initials "JBH" and the number "3", meaning Jane Bowne Haines had at least three pairs of stockings in her possession. Darned

holes in the toe, reinforced heels, and a run in the back calf filled with darning thread convey their use.

Without detracting from the powerful moment I spent communing with a material echo of an early-nineteenth century Germantown woman in that attic, Jane Bowne Haines' stockings are traditionally the best the collective archive can offer in terms of object evidence. Stockings with confirmed family provenance are ideal, and those that survive are usually made of silk and were worn for a special occasion, such as a family member's wedding. Collecting habits within families prioritize the exceptional, the beautiful, the garments worn once. Even as cultural institutions shift focus toward more vernacular objects, those objects become harder to find if they were never valued at all.

In the case of Germantown stockings, studying their material culture despite their physical absence from the archive gives us a better understanding of how early Americans, with varying degrees of visibility, power, and identity, moved and used their bodies. Germantown stockings' absence from the archive echoes the absence of their makers and wearers from the archive. In previous chapters I have illuminated the human networks of makers, users, and buyers of Germantown stockings, retracing the hands and feet engaging with these distinctive American articles of clothing. Germantown stockings embody the experiences of male German immigrants who crafted a distinctive sense of American identity as they worked on their knitting frames, in addition to the women in their homes and greater community who served integral roles in the industry's stocking production. Purchased in support of America's growing domestic manufacturing, Germantown stockings then boarded ships, fought

in the Revolutionary War, and fled circumstances of unfree labor, silent witnesses to their wearers' experiences in a new nation.

But where did they go next?

The life cycle of any frame-knit stocking, including those made in Germantown, could be extended through transformation. Once a knit stocking was no longer viable as a garment for its owner, the fabric could gain new life in alternative forms. Perhaps the most famous example, Thomas Jefferson's red silk under waistcoat is lined with sections of his former knit stockings (figure 46). Jefferson's famously poor circulation called for creative modifications to his garments; in the case of this waistcoat, former stockings were cut open, flattened, and stitched into panels to give the president additional warmth. More commonly, however, stocking legs without feet could serve as an additional fabric layer worn over regular stockings or on arms under jackets. Worn adult stockings could also be cut down and refashioned into children's stockings and mittens, as advertised by the same Philadelphia-area women who offered to finish stockings by sewing seams, repairing them by darning, or handknitting other garments and accessories from their remnants. Like other eighteenth-century garments, knit stockings received similar amounts of repair work and refashioning to extend its period of use, until only yarn remained. This cyclical experience of stockings often began and ended in the hands of women. Female hands negotiated the life spans of knit stockings, by maintaining them for wear as long as possible.

Stockings, like many articles of clothing, provide some of the most powerful material evidence available to us in order to better understand the bodies of early Americans. But specifically embedded in stockings' maintenance and transformation

of material, whether by mending or recycling into other forms altogether, are the experiences of early American women's work. It is my hope that the research this thesis has compiled aids in future identifications of Germantown stockings, with the expectation that regardless of what condition or form in which they are found, their evidence will lend voices to many early Americans not often heard.



Figure 45 A black and white photograph taken by Wyck House conveys a sense of motion that stockings seem to possess when off the bodies who wear them. This particular pair of silk stockings were owned by Jane Bowne Haines (1790-1843) of Wyck House and include evidence of wear and repair in the form of reinforced heels and darned holes in the toes. Stockings. Wyck House. Accession Number: 88.12.1207.A + B. *Courtesy of the Wyck Association. Photo by the author.*



Figure 46 The red silk under waistcoat owned and worn by Thomas Jefferson is lined with multiple knit stocking pieces that have been cut open and stitched flat to provide additional warmth in the garment. Jefferson was often cold and employed creative solutions to make his clothing as warm as possible. Waistcoat. Thomas Jefferson Foundation at Monticello. *Courtesy of Thomas Jefferson Foundation at Monticello.*

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Appendix A

GLOSSARY OF TERMS

Stocking weaving/frame knitting: The terms *stocking weaving* on *stocking looms* and *frame knitting* on *knitting frames* predictably cause confusion, even though they refer to the same industry and machinery and are essentially interchangeable. Knit stockings made on knitting machinery are not woven, but the back-and-forth motion of creating knit rows, as well as the prior industry of woven hose, likely contributed to the term's continued use. Knitting frames are *not* weaving looms. By the end of the seventeenth century, documents describing the knit stocking industry in England transition to using the term *frame knitting*, but documents in America continue to use the term *stocking weaving* until the nineteenth century. I will reference stocking weaving/stocking looms only when directly quoting or describing a primary source. But in general, I believe the discussion of this poorly-understood industry would benefit from the terms *frame-knit*, *frame knitting*, and *knitting frames*, and I have attempted to use those as much as possible, to drive home some technological clarity.

Below are common terms referring to the mechanical components of knitting frames and the material features of frame-knit stockings.

bearded needle: a curved low-carbon steel needle used in a knitting frame that can spring open and closed when pressure is exerted on the end of the curve. Up to three bearded needles could be secured in one lead slug, which secured the needles within a frame.



carcase: the main machinery of a knitting frame, which consists of the bearded needles, jacks and jack sinkers, and pressure bar.

clocking: vertical decorative embroidery along the ankle of stockings.

gore: inserted gussets of knit fabric around the calf and ankles of frame-knit stockings that allowed for a better fit of stocking. Not all frame-knit stockings have gores, but many owned by wealthier individuals did.

jack: one of a series of long hinged rectangles within the carcase of a knitting frame that moves with manipulation of a knitting frame's pedals. Jacks are connected to jack sinkers. Jacks in English are traditionally made of metal, while frames made in France and used in Germantown were made of wood.

jack sinker: connected to jacks in a knitting frame, jack sinkers are mobile, indented pieces of flat tin that hook around thread when they sink down among the needles, creating the loops for the knit stitches to pass through.

maker's mark: a symbol or signature knit into the fabric of a frame-knit stockings, whether a letter, series of initials, or a shape. Marks could be a simple garter stitch texture, or eyelet stitches.

milled stockings: a term synonymous with fulled stockings, which essentially means that stockings were agitated in water and their fabric was transformed in that agitation.

pressure bar: a long, heavy metal bar extending horizontally across a knitting frame which is controlled through the frame knitter's hands rather than feet. When lowered, the pressure bar closes the beards of bearded needles so that the new loops within them can pass through the old and make a new row of knit fabric.

Saxon frame: a term referenced in English sources for frames made or used in German states or other European areas. Besides differences in material (English frames are made mostly of metal and Saxon frames are made mostly of wood), Saxon frames have a key mechanical difference in their connection between pedals and jack sinkers. English frames have a large pulley that raises all jacks at once, while Saxon frames have a wooden cylinder with grooves corresponding to each jack on the frame that raises each jack gradually when turned.

stocking patterns: also called stocking boards, stocking patterns are wooden stocking shapes that knit stockings could be blocked on when wet, and would retain the shape of the wooden board once dry.

welt: the turned top edge of a knit stocking, which has been stitched down, and usually contains makers' marks and owner marks.

Appendix B

TECHNICAL ANALYSIS OF GODFREY MILLER'S KNITTING FRAME

The knitting frame in Philadelphia University's collection was made in Lyons, France prior to 1752, and brought over to Germantown in 1763 by Godfrey Miller, an immigrant from Gruna, Germany. While the principal mechanics of knitting frames made in England and France are generally the same (primarily the motion of the hands and the movement of the needles), the main material of the hardware is different. Typically, English frames made during this period use much more metal, while French-made frames use more wood. Most frames are broken down into two main aspects: the woodwork, which supports the mechanical part of the frame, and the frame itself, which is made up of the carcase and the carriage. Below is the technical analysis of Godfrey Miller's French-made knitting frame.

The Woodwork

The primary wood of this frame is oak, with several secondary woods still unidentified. The woodwork makes up two side pieces, three rafters, a seat and seat supports, pedals, and a supporting platform for the mechanical frame to rest on. The woodwork and the mechanical frame can be separated at any point if the pedals are disconnected. The seat is simply a wooden board lain across two square seat supports, with a drawer underneath. There is evidence to suggest that this seat is not original to the frame, although it is an eighteenth-century seat. The square rails that support the seat board on either end have been cut down low enough to reveal the wedge construction of the rails, probably to adjust the height of the new seat. The seat board

does have wrought rose-head nails, which suggests it is was an eighteenth or early nineteenth century seat. The seat drawer has three evenly-sized compartments, which would have held larger tools such as a square head wrench or the casting mold for the needle leads, which was a slightly varied shape unique to every frame and needed to be kept with the machine at all times. The seats on knitting frames were generally customized to fit the exact specifications and comfort requirements for the worker, and even in knitting mills in the nineteenth century where workers might have to switch their work to other machines to execute a certain stitch technique, they would bring their seats with them.

There are four pedals on this frame, three of which are attached to the cross bar underneath the seat with a movable wedge and the fronts connected to leather straps that control movable parts of the machine. A shorter, fourth pedal in the center of the frame is attached to the footrail by a movable wedge and a leather strap at the center of the pedal. The two outermost pedals control the movement of a cylindrical, ridged piece that moves the jack sinkers from left to right as the thread is lain across the needles. The second pedal to the left assists with lifting the movable carriage up and away from the needles, and the second pedal to the left is pushed to control the presser bar as you lift the carriage forward to drop the old stitches off the needles. There are distinctive wear marks on each of the four pedals that reveal which feet were used; the left two pedals were used with the left foot, and the two right side pedals were used with the right foot. This is different from the pedal set-up and use on an English-made frame; there are four pedals, but the left foot remains on the pedal furthest left and the right foot alternates between the remaining three. This difference in usage might seem slight but would affect the rhythm of a framework knitter's movements enough that as

he developed his speed and skillset, transitioning to an English-made frame later in his career wouldn't have come as naturally. The foot rail at the back of the frame has two indentions that have been intentionally gouged out to more comfortably fit two feet when the machine is at rest; the framework knitter would rest his feet on this rail as he was repaired any aspect of his machine or the fabric he was producing, or underwent pattern work on his knitted piece. Until separate frame attachments were invented for lacework and purl stitching, those patterns had to be done by physically reversing or expanding stitches with a separate metal hook. Shaping in stockings were also done with this hook, so the foot rail would have seen frequent usage and contributed to the comfort of the framework knitter.

While some frames have empty space between the box rail (the rail of the frame directly in front of the knitter) and the back rails, this frame has an additional wooden board laying across them to form the bottom of a box that holds the main frame machinery. This wooden board serves several purposes, the first being that it allowed a braking mechanism to be mounted on the right side of the ridged cylinder that raises the sinkers. A rectangular piece of wood is bolted through, then an additional curved piece of wood is attached on top of the first, with a small square protrusion. That protrusion serves as a brake as the cylinder rotates fully and one row of the knitting is accomplished in one direction, and then serves as a brake in the opposite rotation as the knitting travels back across. The piece of wood that is bolted through the frame has split and was replaced at least once, which is unsurprising. This brake would have been hit constantly at the end of every knit row. The front of the board between the box rail and back rail closest to the knitter has a metal cylinder mounted to it with ratcheting mechanism, which would have been used to roll up the

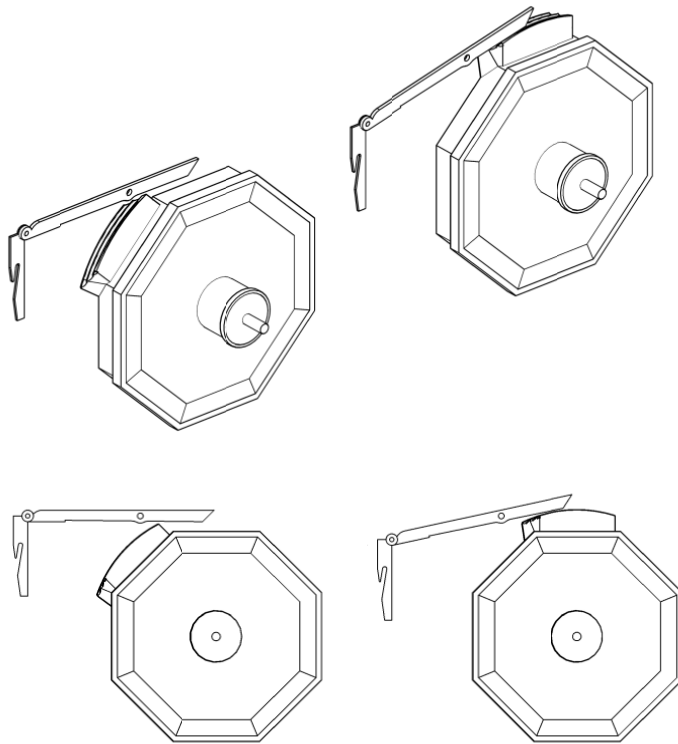
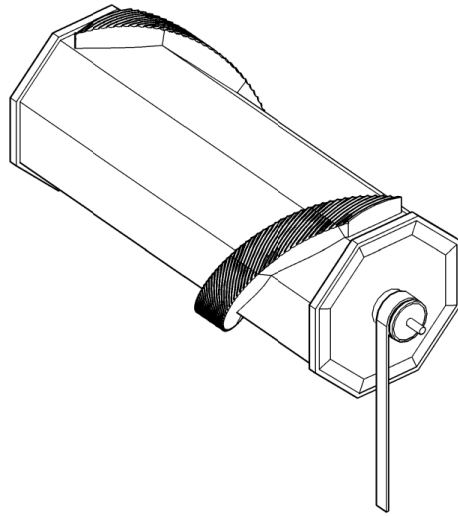
knit fabric and keep it tight as it was made. Directly below this cylinder under the board is a small wooden drawer, with a series of compartments sizes with smaller compartments towards the front and larger ones towards the back (the correct direction of the drawer can be determined by a small finger hold indent on the bottom of the drawer for pulling it out. This drawer could have held spare needles and needle leads, sewing needles, or scraps of leather or waste thread. A small hole drilled through the frame board near the fabric's metal anchor makes me speculate that a rope or string attached to the corner of the anchor could be pulled to move the fabric anchor out of the way of the drawer (it is normally in the way during production), but I'm not positive. There is a small outlined space on the top of the board in the left corner, lining with some molding to make a small barrier. This could have held a working needle for pattern work that would need to stay in an accessible place during knitting, but that kept it from falling to the ground and pausing production. The two iron rods that travel down through the board to connect to pedal mechanisms below have cut channels, but the original right channel has been patched and a new one cut slightly more inwards. The right iron rod has a clear welding mark and is bent to the right.

The front edge of the board directly in front of the knitter has a series of marks, mostly large Xs. This could simply be doodling, but I speculate that they may be a way to count rows when knitting; perhaps the knitter when learning a stocking pattern for the first time needed to count rows while he worked to place increases and decreases appropriately, and used the side of his board until he could do it from memory.

On the sides of the frame directly under the carriage and carcase, a series of nails protrude. One large nail on the right side protrudes towards the knitter, and would likely have held a wrench or pair of pliers for repair work. The nails that face parallel to the knitter contain leather rings, with either 1-2 holes, which I believe to be prepared bearings for any of the machinery that might need them. Many of the wooden parts that experience some friction have leather bearings already in place, while some others have fabric.

The Cylinder

This ridged cylinder, when rotated, lifts each jack up and causes them to push the jack sinkers down into the thread that has been lain across the needles (as illustrated below by diagrams courtesy of James Kelleher). Each ridge corresponds exactly to its individual jack and would have worn them uniquely, making them non interchangeable. This is a distinctive feature of this type of frame compared to an English Frame. Because of this cylinder, the pulley or wheel needed to turn via pedal is perpendicular to the knitter, and smaller, rather than the larger parallel wheel on English frames. The lack of the larger wheel would make it harder to eventually add yarn guides, which were rigged up alongside the system of this wheel. This means that this frame, as it was in use during its life, was used by someone with the skill to lay the thread on the needles by hand rather than with a guide timed to lay it simultaneously with the jack bar's movement.



The Mechanical Frame

The Carcase

The stationary section of the frame that sits on top of the woodwork consists of the mechanism where the actual knit fabric is produced, consisting of the needle bar and stationery sinking jacks. The iron or steel jack sinkers are held in place by three planed wooden plates with two wooden bolts in each plate for a total of 6 bolts. 5 are original and 1 bolt is a replacement. There are small ticks on the sides of the bolts that correspond to the correct plate hole where it belongs; these screws would have been completely unique and needed to go back in the exact holes. These ticks range 1-6, to help the framework knitter. The metal plates and bolts that hold the lead needle slugs in place are similarly labeled, the bottom of each bolt has a chiseled roman numeral 1-6, two in each plate. There are a total of 152 needles, with a total of 76 lead cases, containing 2 needles per case. There are 75 mobile jack sinkers, and 76 immobile sinkers.

The Carriage

This carriage, unlike an English frame, is almost entirely made of wooden parts. The trucks that move the jack bar back and forth are wooden, as are the jacks themselves. Of the 75 jacks, roughly 35 of them are marked in roman numerals from left to right, so that the knitter could keep each jack in its proper place during repairs, and I can also identify which are original to the machine and which are replacements. The entire presser bar mechanism is wooden, as are the mechanisms that allow for the carriage to roll back on the trucks and then come forward to brake. Well-turned wooden screws are a common feature. The arms that raise the carriage in conjunction with the pedals have several personal details, including a daisy wheel and some

numbers written in white on the wood. There is some metal plating on these arms in the rough shape of a tulip, as well as some scalloped wooden fans that look to be purely decorative on the elbows of the arms, held up by pegs.

To adjust the gauge of the machine without adjusting the number of needles per three inches, there are two double ratcheted turn-screws that raise or lower a bar, which affects the amount a jack sinker can sink around the thread. The shorter the distance it sinks, the smaller the stitch. The left screw is in fine shape, while the right screw has broken. Unsure which screw is older.

The spring that keeps the tension between the carriage and carcass is in the shape of two Cs, kept pushed down by a large metal screw threaded through the top bar. While English frames have two springs curved on the sides of the frame, this spring is centered in the middle of the frame, and awkwardly positioned. There has been a large chunk cut from the top bar to accommodate the spring, in addition to wear in that space over time as the spring rubs against the wood.

There are two injuries to the frame that keep this from being fully operational; the wood has split around one wooden screw that is placed in the right arm that lifts the carriage, and the left wooden track for the truck has lost a peg and now tips down.

Textile Testing

Three areas of textile fibers present on Godfrey Miller's frame were tested by Sarah Towers, Graduate Fellow of the Winterthur/University of Delaware Program in Art Conservation. Her report is included in this appendix.

Microscopy Report for Fiber Identification
Sarah Towers, WUDPAC 2nd Year Fellow
Prepared for Emily Whitted, WPAMC 2nd Year Fellow

Object: Knitting Frame, ca. 1752
Samples Taken: 22 October 2019 at the Design Center, Thomas Jefferson University
Samples Analyzed: 22 and 26 October 2019
Equipment: Nikon Labophot-Pol Polarized Light Microscope.
Report Date: 27 October 2019



The purpose of the sampling was to identify fiber types in the textile components of a ca. 1752 knitting frame, with the goal to strengthen the context of the textile elements, particularly to try to date the textiles (or eliminate date ranges) to gain better understanding of the history of the object.

The textile components sampled were: a triangular cushion nailed to a front beam (sampled both woven textiles on front and back respectively and the white thread sewing those two textiles together), the stationary jack plate padding, and the presser bar padding. Please see annotated images of the object on the following page for sample sites.

Conclusions:

Triangular cushion

The front textile, a blue plain-woven cloth, is woven with flax in one direction and cotton in the other (warps/wefts indeterminate at this time). The back textile, an orange corduroy-like textile (alternating stripes of pile) appeared to be woven with cotton in one direction (estimated weft) and a hair fiber, probably wool, in the other direction (estimated warp), for both the cut and uncut portions of the weave. The fibers on this back textile were extremely fragile and friable during sampling, and their advanced deterioration was noted during microscopy as well. The triangular cushion is sewn with a white flax thread.

Stationary jack plate padding

The padding textile is made of hair fibers in both directions, possibly wool. One direction is a white or uncolored wool, the other direction is red. There is an indeterminate coating on the fibers. During sampling, the padding was moved slightly for access, and during that time it was noted that the padding appears glued in position to the jack plate beam.

Presser bar padding

The padding textile is made of hair fibers, possibly wool, in both directions. Additionally, in one direction there were cotton fibers mixed in with the hair fibers. In the other direction, in addition to the hair (possibly wool) fibers there also appear to be woody fibers that might be esparto or another reedy plant origin. Additional testing is recommended before esparto can be positively identified.

No mercerized cotton was found during sampling any of the components.

Note: In this report, "x" and "y" orientation refers to directionality of weave in relation to overall orientation of the object.



Above: Sample sites 1-8 on the front of the frame.

Right: Sample sites 9 and 10 on the rear of the frame.



Resources used to inform findings in this report:

Appleyard, H. M. 1978. *Guide to the Identification of Animal Fibres*. 2nd Ed. Leeds, UK: Wira.

Carpenter, Charles H. and Lawrence Leney, Harold A. Core, Wilfred A. Côté, Jr., and Arnold C. Day. 1963. *Papermaking Fibers: A Photomicrographic Atlas of Woody, Non-woody, and Man-made Fibers Used in Papermaking*. New York: State University College of Forestry at Syracuse University.

Fiber Reference Image Library (CAMEO Database: Conservation & Art Materials Encyclopedia Online, developed by the Museum of Fine Arts, Boston; accessed 26 October, 2019). http://cameo.mfa.org/wiki/Fiber_Reference_Image_Library

Mayer, Debora. 2018. *Polarized Light Microscopy: Plant and Animal Fibers*. (Handouts provided for ARTC667 Introduction to Fiber Microscopy, WUDPAC, Wilmington, DE, 15-17 August 2018.)

The Textile Institute. 1975. *Identification of Textile Materials*. 7th Ed. Manchester, UK: The Textile Institute.

Appendix C

IMAGE PERMISSIONS

Girard College #116
2101 South College Avenue
Philadelphia, PA 19121
Attn.: khaas@girardcollege.edu 215.787.4434 khaas@girardcollege.edu

PERMISSION to Publish Image from Girard College History Collections

Date: 3/10/2020

Dear Emily Whitted,

With this letter, Girard College grants you permission for one-time use of the image(s) of the following items in our school's historical collection:

Stephen Girard's stockings; images of 323 supplied by GCHC, others taken by researcher

These images will appear in an M.A. thesis for the Winterthur Program in American Material Culture

The correct credit line is "*Courtesy of Girard College History Collections, Philadelphia PA.*"

Please sign this letter and return to me at address above. Contact me if you have any questions regarding this permission.


Yours sincerely,



Katherine Haas
Director of Historical Resources

Author's agreement:

____ Emily Whitted
(author's name printed)


(author's signature)

Date: 4/8/2020

email address: ewhitt@winterthur.org

WINTERTHUR



March 23, 2020

Emily Whitted
Lois. F. McNeil Fellow, Class of 2020
Winterthur Program in American Material Culture
University of Delaware

Dear Emily:

Permission is hereby granted to reproduce the image below for *one time* use only in printed and electronic formats in:

Publication: *Made in Germantown: Eighteenth-Century Production, Wear, and Repair of Frame-Knit Stockings*

Authors/Editors: Emily Whitted

Publisher: University of Delaware

Anticipated publication date: May 2020

There is no fee.

Digital images, 2 Tiff files, 1 Jpeg via WeTransfer: 1964.1702 Darning sampler

Please include the **caption/credit** line below:

Darning sampler, Anna Hofmann, possibly England or North America, 1790-1830, Plain-woven linen and cotton thread, 1964.1702, Bequest of Henry Francis du Pont, Courtesy of Winterthur Museum.

Sincerely,

Lynn McCarthy

Lynn McCarthy
Digital Asset Manager
Marketing and Media Department
Winterthur Museum, Garden & Library
Direct 302.888.4734
5105 Kennett Pike
Winterthur, DE 19735
lmccar@winterthur.org



Photographic Reproduction and Rental Agreement

Please complete and return with two original signatures and payment to: Rights and Reproductions, Museum of the American Revolution, 101 S. Third Street, Philadelphia, PA 19106. When countersigned by a Museum staff member, one copy will be returned to you.

Name: Emily Whitted

Organization: University of Delaware/Winterthur Program in American Material Culture

Address: 1507 N Franklin St #1 Wilmington DE 19806

Phone: 276-451-1376 Fax: _____ Email: ewhitt@winterthur.org

Image Request: March to Valley Forge painting by William Trego, 1883

Format: TIF if possible, if not JPG is fine

Planned use for image(s): Publication in M.A. Thesis for Winterthur Program in American Material Culture
The American-Made Stocking: Frame-Knit Stocking Production in Germantown,

Publication Title/Author: Pennsylvania 1680-1830


Publisher (if applicable): _____

Date of publication: April 20, 2020 Press run: _____

Website address (if applicable): _____

I agree that this permission to reproduce any image from Museum of the American Revolution collection is for the stated, one time use only. I further agree to pay all applicable fees prior to receipt of photographic material(s).

Name (printed): Emily Whitted Title: Lois F. McNeil Fellow

Requestor's Signature:  Date: 3/20/2020

DO NOT WRITE BELOW THIS LINE

Credit line must read exactly "Image Courtesy of the Museum of the American Revolution"
Permission is granted to reproduce the above image one time only. All Rights Reserved.

Photographic material charges: \$ waived Payment/check #: N/A

Signed for the Museum: Alyse Van De Putte Date: 3/26/2020

Name and Title: Alyse Van De Putte, Assistant Registrar

Wednesday, April 8, 2020 at 09:49:35 Eastern Daylight Time

Subject: Re: Image Permission Request

Date: Monday, March 23, 2020 at 8:36:08 AM Eastern Daylight Time

From: Heather Hansen

To: Emily Whitted

Hi Emily,

The photo email for the historical society actually goes to our photo archivist. I handle rights and reproductions for museum artifact images and you are certainly welcome to use the photos you took during your visit in your thesis. I hope you are staying safe and healthy and that your thesis progress is not thwarted by circumstances beyond your control.

Best regards,
Heather

From: Emily Whitted <ewhitt@winterthur.org>

Sent: Friday, March 20, 2020 4:27 PM

To: Heather Hansen <hhansen@chestercohistorical.org>

Subject: Image Permission Request

Hi Heather,

I hope you are holding up okay in these times, and that CCHS is not suffering too much as a result of all this social distancing. I sent the below message to photo@chestercohistorical.org with my attached form but my email was blocked and bounced back-is there any way you could forward this to the right person so I can get written permission to publish some of the photos I took during my research visit to see stockings for my thesis? Despite the uncertain times, I am trying to stay on track with my thesis this spring. I really appreciate it!

"I am a current graduate student in the Winterthur Program in Material Culture and I am intending on using several images of Chester County Historical Society objects in my Master's thesis, that I photographed myself during a research visit to look at knit stockings on September 24, 2019 (organized by Heather Hansen). I am attaching the permission form, and am happy to abide by these guidelines; please let me know if there is anything else you request from me!

Best,
Emily Whitted"

--

Emily Whitted

Lois. F. McNeil Fellow, Class of 2020

Winterthur Program in American Material Culture

University of Delaware

Page 1 of 2

Wyck Photographic Permission Form

1.) Individual Making Request

Name: Emily Whitted
Mailing Address: 1507 N Franklin St #1 Wilmington DE 19806
Telephone: 276-451-1376
Email: ewhitt@winterthur.org

2.) Image Requested/Taken

Accession Number(s): 88.1207.A + B

Subject Matter: Jane Haines stockings

3.) Intended Use of Image: M.A. thesis publication

4.) Image is for (check one):

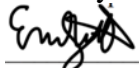
Research purpose only _____
Non-profit purpose _____
For-profit purpose _____
Publication X


5.) If intended for publication, specify author, title, anticipated date of publication, and print run:

Made in Germantown: Production, Wear, and Repair of American Frame-Knit Stockings 1683-1830 by Emily Whitted, anticipated publication date April 20, 2020

- Wyck photographic permissions are granted for one-time use only
- The required written credit is ***Courtesy of The Wyck Association***

I have read and agree to abide by the above provisions,

Signature of Requester:  Date: 4/6/2020

Approved by Wyck Representative:  Date: 4/7/2020

NO: 20-040701
ORGANIZATION: University of Delaware/Winterthur Museum
CONTACT PERSON: Emily Whitted
E-MAIL: ewhitt@winterthur.org
ADDRESS: 1507 N Franklin St #1, Wilmington, DE 19806
TELEPHONE: 276-451-1376

DATE: 4/8/2

hereby applies for permission to reproduce and/or publish the following images:

SUBJECT:	FORMAT:	USAGE FEE:	TOTAL:
Thomas Jefferson's red silk waistcoat-open to reveal lining	High res jpg	waived	\$0
INTENDED USE: (Please be as specific as possible)	Editorial. I am looking to include an image of Thomas Jefferson's red silk waistcoat lined with stockings in my Master's thesis, which will be published in an online format and a hard copy edition for the university library. Estimated Publication Date: April 20, 2020		
AUTHOR / PUBLISHER:			
RIGHTS:	Basic	DISTRIBUTION: NORTH AMERICA	
MEDIA FORMAT:	One format	LANGUAGE: ENGLISH	

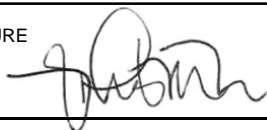
NOTES: I agree that if my request is approved I will send a hard copy of my publication to the Jefferson Library (required).

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APPLICANT SIGNATURE



DATE

4/07/2020

THOMAS JEFFERSON FOUNDATION, INC S

DATE

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INVOICE

AKGINVL9153

AMOUNT \$ 75.00
DATE Apr 07, 2020
DUE DATE May 07, 2020
INVOICE DATE IS DELIVERY DATE

Emily Whitted

1507 N Franklin St #1
Wilmington, 19806
United States of America

SHIP TO

Emily Whitted

1507 N Franklin St #1
Wilmington, 19806
United States of America
Tel: 2764511376
Email: ewhitted@udel.edu

CLIENT ID AKGCT46925
PROJECT M.A. Thesis
DESCRIPTION Use: Thesis
Image: 1
No of Formats: Digital and Hard Copy
Discount: 10% Academic
Language Rights: World English
License Term: Up to 3 years
Print Run: Up to 100
Position: Inside
Size: 1/2

One time and non-exclusive



ASSET IDENTIFIER: AKG262721
COPYRIGHT: akg-images
SHORT CAPTION: Crafts, hosier and knitter / engraving
REFERENCE: MA Thesis, Inside, 1/2pg
USAGE DESCRIPTION: London, Other Use

UNIT PRICE	QTY	ADJ.	LINE TOTAL
\$ 75.00	1		\$ 75.00

GRAND TOTAL \$ 75.00

AMOUNT DUE \$ 75.00
DUE DATE May 07, 2020

BARCLAYS BANK
STERLING ACCOUNT
ACCOUNT 60430218
SORT CODE 20 67 83
IBAN GB18 BUKB 2067 8360 4302 18
SWIFT-BIC BUKGBB22

EURO ACCOUNT
ACCOUNT 63491800
SORT CODE 20 67 83
IBAN GB25 BUKB 2067 8363 4918 00
SWIFT-BIC BUKGBB22

US DOLLAR ACCOUNT
ACCOUNT 46456700
SORT CODE 20 67 83
IBAN GB12 BUKB 2067 8346 4567 00
SWIFT-BIC BUKGBB22

USAGE LICENSED
Usage of our images is subject to our Terms and Conditions.

Wednesday, April 8, 2020 at 10:06:33 Eastern Daylight Time

Subject: RE: Image Permission Request
Date: Tuesday, March 24, 2020 at 3:30:43 PM Eastern Daylight Time
From: Jade Papa
To: Emily Whitted

Hi Emily,

How nice to hear from you. Yes, Jefferson is completely remote at this point. I don't think we're even allowed back on campus. I imagine things are similar where you are?

Yes, please feel free to use the images you have. All we'd ask is that you note with each image:
Courtesy of the Textile & Costume Collection, Thomas Jefferson University.

We'd love to have you back at the Collection and I'm certainly very excited about hearing all the details of your samples!

Best to all of your family and friends.
Cheers,
Jade

Wednesday, April 8, 2020 at 10:05:23 Eastern Daylight Time

Subject: Re: Image Permission Request
Date: Tuesday, March 24, 2020 at 6:21:45 AM Eastern Daylight Time
From: Jim Grevatte
To: Emily Whitted

Hi Emily,

Yes, these are indeed strange and challenging times...

I'm glad your studies are going so well. We'd be fascinated to see those connections between Nottingham and Germantown. Is there anything you could share with us - a nice cutting maybe? Love to support any future studies, of course.

Of course you can use your images of your stay with us. No need to add any kind of credit beyond any obvious context.

If it's OK with you, I'd like to share your blog. We're looking for lots of digital material to engage people while the museum is closed.

Do please keep us up to date with what you are doing and let me know if we can help.

Wednesday, April 8, 2020 at 10:07:59 Eastern Daylight Time

Subject: RE: Photo permissions for Godfrey Miller's Vest
Date: Monday, March 30, 2020 at 10:02:58 AM Eastern Daylight Time
From: Cissy Shull
To: Emily Whitted

Good morning!

Congratulations on completing your thesis. Please use the following credit line:

Winchester-Frederick County Historical Society Collection

Take care,

Cissy Shull
Executive Director
Winchester-Frederick County Historical Society
1340 S. Pleasant Valley Road
Winchester, Va 22601
540/662-6550
cshull@winchesterhistory.org
www.winchesterhistory.org

Wednesday, April 8, 2020 at 10:18:57 Eastern Daylight Time

Subject: Re: Images Permission Request
Date: Monday, March 23, 2020 at 4:26:36 PM Eastern Daylight Time
From: Library
To: Emily Whitted

Hi Emily - you are more than welcome to use the downloadable jpeg from the museum's website. It is a 1520/72 dpi, image, good for electronic use. If you need it for print use, it will print to about 4x5" and can certainly be an FPO for layout and design until we can supply hi-res. Best, Conna

Wednesday, April 8, 2020 at 17:40:47 Eastern Daylight Time

Subject: Image permissions
Date: Wednesday, April 8, 2020 at 5:39:38 PM Eastern Daylight Time
From: James Kelleher
To: Emily Whitted

Hi Emily,

Know all men by these presents- I, James Kelleher, do hereby give, grant, bargain, confer, enfeoff, etc. permission to publish, within, and only within, your Master's thesis, the three images of knitting frame parts lately sent to you by myself.

Best,

James Kelleher (X) his marke

Signed and witnessed the 8th day of April Two Thousand and Twenty.

Thursday, April 16, 2020 at 13:01:59 Eastern Daylight Time

Subject: Re: Images Permission
Date: Thursday, April 9, 2020 at 2:01:52 PM Eastern Daylight Time
From: library@germantownhistory.org
To: Emily Whitted

Hi, Emily,

So far, so good! I am working from home. Of course, money is becoming increasingly tight, but we have applied for one of those CARE grants. Hopefully, this will help protect our paychecks for a while!

Absolutely! Feel free to use those images. No formal fuss necessary. Just please give credit as "Germantown Historical Society/ Historic Germantown." Thanks so much for asking. And if I could get an e-copy of your thesis, it would be great! We would absolutely love to have a copy for our library and archives!

In the meantime, I hope all is well with you and that you and everyone around you is remaining healthy and virus free!

Strange times indeed...

Alex

On 2020-04-08 07:42, Emily Whitted wrote:

> Hi Alex,
>
> I hope you and the rest of the GHS staff are healthy and safe during
> these strange times! I am reaching out because despite the madness, I
> am still completing my M.A. thesis this spring and graduating in May.
> I am planning to use an image I took of the Germantown stocking boards
> during my research visit to GHS last summer in the publication of my
> thesis, and just wanted to make sure you were comfortable with that! I
> am happy to fill out any form you may need from me and use whatever
> courtesy line you would prefer.
>
> Best,
> Emily Whitted
>
>
> --
> Emily Whitted
> Lois. F. McNeil Fellow, Class of 2020
> Winterthur Program in American Material Culture
> University of Delaware

This message came from outside of Winterthur, and has been scanned for viruses.

Page 1 of 1