

Bisexual and Invisible Memory: Gendered Design History of Domestic Sewing Machine, 1850-1950

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“An identity is projected for the artifact by its positioning in the store and also by advertising, point-of-sale material, instruction booklets, the way it is spoken about, the sales pitchGender is unavoidably at work in the whole life trajectory of a technology.” (Cockburn & Ormrod, 1993:156)

Gender is unavoidably working through the history of sewing machine design, from its technological invention to the cultural popularization, from its superficial feminine appearance to the essential complicated mechanism. Male inventor or engineer were in charge of its production, while the costumer in mainstream went to women. Sewing machine as the material artifact was an aggregation on which women played their gender performance, including the mother’s love to children, femininity charming to husband, housewife’s industriousness to family, proficient skill and confidence to social community.

Sewing machine, the one of most common domestic appliances, was barely invisible in the literatures of design history. One of the reasons, in large part, may go to its major operator was female, which was the marginal gender identity, absented in the historic or realistic contents. The history of domestic sewing machine can be traced back to the mid-19th century, however only was presented as the technological invention within the Industrial Revolution or American System of Manufacturing by description of the patent information (Cooper, 1968; Bourne, 1895), whilst being lost of the alive cultural stories. This paper sought to provide a more interesting and multilevel perspective of sewing machine, as the designed artifact with which embedded the contextual interpretations, both from the hard (design history) and soft (gender) views.

The market of domestic sewing machine originated from the mid of the 19th century in USA, and then extended to the Europe quickly and pervasive, mainly dominated by four makers, Wheeler & Wilson(1850), Singer(1851), Grover & Baker(1851) and Willcox & Gibbs(1857). Amongst the drastic competition of patent on structure, stitch formation and feed mechanisms, contributed the fundamental pattern of home sewing machine in 19th century and early of 20th century. Since the studies on sewing machine have thrived after the 1960s, uncountable amount of sources are concerned to my paper writing. Three types of resource have been considered here: first, a huge of repertoire of secondary literatures based on the tone of invention and technological advance, from patent ticket, business and marketing strategy to trade policy; (Rosenberg, 1963; Head, 1982; Hounshell, 1984; Godfrey, 1982; Godley, 2006; Mossoff, 2009) second, the development of sewing tools as the important industrial

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machine, has attracted many attention from technology-economic historians and biographers who devoted a stack of case studies and research on the successful manufactures, Singer is best known of these; (Davies, 1976; Brandon, 1977; Godley, 1996) third, the manufactures of sewing machines have also produced a variety of visual materials, such as advertisements in fashion magazines and daily newspapers, user's manual, pamphlet by department stores, sale and promotion direct mail, picture archives and collector's list. (Bays, 2007; Jewell, 1985; Burman, 1999; Beadry, 2006) What I discovered is, although adequate references on sewing machine as mention above, design historical research combined technological standpoint, stories of manufactures, cultural studies from material and visual, and gendered relevance is insufficient.

Design history and gender, therefore, was the dual-spindle here: firstly, with the discourse of design history, I will sketch the trace of sewing machine in its historical development with the frame of material culture, especially focus on its aesthetic innovation of style, such as shape, function, size, material, style and ornaments; secondly, with the category of gender, I will investigate the cultural identity and experience of modernity by women consumers. Sewing machine, the rockstar at the era of worshipping on industrial power, as regarded was "one of amazement and astonishment at technical virtuosity" (Hounshell, 1984: 67-123) and was even exposed as the showoff by the most famous Exhibition in the 19th century at the Crystal Palace. No matter how sophisticated it was as a scientific technology, we are all agreeable that sewing machine is the designed artifact after all. Why did the sewing machine appear so minimally in the text of design history, except the concise introduction offered by Adrian Forty's *Objects of Design* in 1986? Who designed the sewing machine, especially the shape, color, structure, decoration, material, etc in other word, who decide the style? Why did the sewing machines become similar among the four dominant manufactures? What's the relation between home sewing and its machine? How did the sewing machine from the factory equipment become emotionally and physically acceptable to the family members, especially to the women, with the methodology of design? These inquiring and its exploration consist of my arguments from the hard view based on technological contexts.

Perceiving sewing machines with gender is another cord throughout this paper. It's absorbing to find out that two gender identities as the two unique sexual temperaments were compounding: designed and manufactured by men, while consumed and operated by women; its material and structure were marked with obviously muscular features, while the decoration on its surface and its curved shape were typically feminine outstandingly. How did the male makers consider the female elements in the design of sewing machine? What's the meaning to the women when talked about the sewing machine as a labor-saving domestic equipment? Why was there gender identity mix-up in the history of sewing machine?

Road to the Domesticity: Evolution of Sewing Machine Design

The earlier design evolution of sewing machine, more specifically, the domestic sewing machine, was the transformation from factory-like to the family taste, from industrial coldness to the aesthetic attractiveness, from the large to the miniature, from open structure to the concealment, from device in workshop to the furniture in home, from complexity to the easy-to-use, from public sphere to the private and individual; in short, from masculinity to the femininity, which were the results of the changing from the men's standpoint at which the beginning of invention and manufacture, to the women's endpoint where the happening of consumption, operation, creation, service with the help of domestic sewing machine.

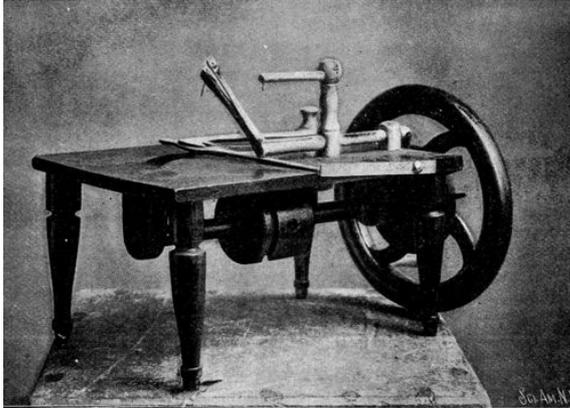
In 1854, Wheeler and Wilson introduced the first sewing machine for domesticity which had been thought as the technological miracle dramatically changing the actuality of low production in fabric industry. Design development of the sewing machines, was haunted by its advanced in technology and sophistication in structure, moreover the patent war persisting from 1850s to 1870s, especially the aesthetic refinement. Unconsciousness of design earlier in the mid of 1850s, spotlight of sewing machine development was marketing-oriented, defensive for the patents along with the anxiety for expanding oversea market, and design was more or less disregarded. Of the sewing machine, consequently, all the details with design relevance, including the shape, color, structure, material, decoration, style, left little mark in neither text nor image archive.

1. Beyond the Patent War: Redesign for the Family

The first sewing machine, as the outcome of the Industry Revolution, was generally considered to be invention of an Englishman Thomas Saint in 1790 for the purpose of improvement of production rate in clothing industry. However, German inventor Karl Friedrich Weisenthal, was the really first mark left in history of sewing machine. He was patent his invention on the basis of hand sewing on 24th July 1755. (Leoni, 1988: 120) The essential parts of the early sewing machine had been set up by the four American manufactures from the late of 1840s to 1850s. They, Wheeler & Wilson, Willcox & Gibbs, Grover & Baker, and Singer, even conceded to build a patent-pool from 1856 to 1877, which guided the fundamental structure and its mechanism of domestic modern sewing machine industry. (Davies 1976: 5-12; Hounshell 1984: 67)

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Before the 1850s, the function of sewing machines by the leading four manufactures was defective. Only the straight line and limited textiles could be stitched, furthermore the speed of sewing was relatively slow due to its chain-stitch formation. (Kershen, 1995; Godley, 1999; Nelson & Rosenberg, 1993; Hall, 2007)



THE WILSON MACHINE OF NOVEMBER 12, 1850.
Earliest model filed in Patent Office.

The problems of stitch became the foremost impediment to be solved: improving the quality, speed up its efficiency. The earliest model of sewing machine filed in patent office is made by Wheeler & Wilson. Impressively as the cincture in plain sight rotating as the dynamic axis which mimics the

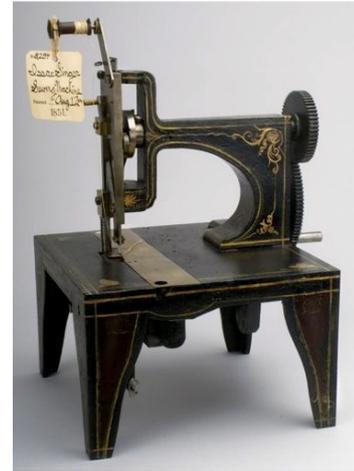
mechanism of spinning wheel, and there is appropriate stumpy double stitch which reduced the complexity of operation on thin needles for the newly seamstress. "Stitch-forming patents and improvements of needles, presser-foots, take-ups, and tension devices" (Thomson, 1989: 114) were revised as follow in the next five years.



The pioneer of design reform on individual sewing machine after the patent war, led by the three main manufacturers, Wheeler & Wilson(1854), Willcox & Gibbs(1857) and Singer(1858), starting from the "softening strategy" on its appearance, explicitly speaking, to reduce its size, lighten the weight, simply the structure, and add decoration to the surface. Wheeler & Wilson made the initial contribution to the domestication of sewing machine by its original attempt of targeting at family consumers, and its product was only 300*275*165 mm in overall measurement. Willcox & Gibbs cut the cost by half through simplifying the mechanism of single-thread chain-stitch. (Forty, 1986: 97) However, although W&W and W&G went ahead of the Singer, the prototype of domestic sewing machine in the last half of 19th century was created by the series of Singer's New Family.

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New Family which was initially launched in 1865, the name itself had unveiled the Singer 's ambition of the market of home sewing machine. Two years later, with the dramatically success led by the New Family series, Singer surpassed the other peers, became the number one in the sewing machine industry. Looked through the history of Singer, the achievement of the New Family had been prepared beforehand by the patent model No.22. Focus always on the Singer's vital originality of cam mechanism to regulate the height of the needle bar, however, aesthetic aspects had been overlooked for a long time. The whole black with golden lines sketching out the elegant plant patterns, appropriate size and concise structure and parts, especially the four geometric shape of table legs presenting modern and taste of Middle Class Victorian family. Its neat form was also designed for square packing case and suited to easily transportation. What's interesting is that the normal packing case had been ameliorated to the first Singer's cabinet style which accommodated better to the home interior and was in vague till the mid of the 20th century.



Inheriting the exquisite and tasteful design of Model No. 22, New Family had upgraded its function to a great level, such as "an oscillating shuttle, a faster lock-stitching mechanism," and more importance was the automated features, "automatic winders,

self-threading shuttles and stitch-regulators." (Godley, 1999: 257; Hounshell, 1984: 109-120) From 1865 to 1882, the "New Family" had been sold to almost developed countries in the world, the distribution in total was up to four millions. (Hounshell, 1984) Even in the 20th century, the refined versions of the New Family, "No.1 Drop Feed", "No.4", and the "Medium" still dominated the home sewing machine market. From the Model No.22 to the New Family, everyone can tell the explicitly intention of the male inventors, that sewing machine was exclusively designed for female consumers. Curved shape of bed plate with the wood case bottom, intense feminine gamosepalous patterns with bold golden color fulfilled the arm and face plate, were matching the golden decorated logo plate in front of the arm stand.

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What a lovely innovation! However, the price was far beyond the scope that ordinary family can afford. As its unaffordable price for the most middle income family, sewing machine was a truly luxury and status symbol in the mid of 19th century. An ordinary sewing machine was labeled as \$75 to \$100, which roughly equals to the



annual U.S per capital income of \$115 in 1860. (Norris, 1990: 12) The original branch of sewing machines, being luxurious due to its handmade craft, small yield, and complicated to fix-up. Inspired by the manufacturing skills from armory factory and American Manufacturing System, makers of sewing machine were strived to improve the precision, compatibility, multi-functionality, reliability, and easy to maintain of the sewing machines. Aiming at breaking the price block together with increasing the market share, Singer, one of four dominated manufacturers in sewing machine originally launched the install payment plan which accepts customers to “pay a dollar or two a month until the full amount of the sale was paid.”(Cooper,1976:58) Scholars who research on the history of sewing machines are acknowledged that the flexible payment scheme had successfully paved a way for Singer’s reign in the market of domestic sewing machine. Redesigning

women-friendly sewing machine and reducing its cost or providing options of payment, were two valid approaches to assist manufacturers expanding the occupancy in the market of family. Moreover, sewing machine was becoming a status symbol with dual meanings of financial and lifestyle.

2. Redesign for the New Women: Become Furniture and Portable

Besides the unreachable of its appearance and the high cost which disconnected sewing machine and ordinary family, the cultural prejudice was another obstruction the manufactures urged to remove to exploit the domestic market. Sewing machine, in its cultural context as well as in the artifact history, was bound with the ideas of development, such as technology, factory, workshop, industry, manufacture, batch-production, scientific, invention, engine, etc; in other word, anti-domestic discourse which alas means dissociating with women and family. The relation between women and sewing machine was mutually exclusive for two reasons, low or no income from wage labor, and sketchy know-how and deficient skill at using or mending machines. Contradictorily, women, especially housewife without salary were the main target consumers of sewing machine. There was the biggest contradictoriness confronted by the manufactures of sewing machines since the 1850s. Tim Putnam’s observation gave us a clear thread on this phenomenon:”‘family machine’ was also designed and

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presented to be culturally acceptable in an environment which had been redefined to exclude 'work'. Thus, to competition between makers on grounds of price, mechanical refinement, features or durability, was added the decoration and disguise necessary to accord with contemporary norms of comfort and convenience, with well-known results." (Putnam,1999: 280) The bias against women between sewing machine and the family being cleared out implied a new identity for women came concurrently.

Historian Diane Douglas (1982:20) discovered the coincident murgence of industrialization of public world and modernization of domestic life, and she argued "In the collision, the machine was adapted to its new domestic setting." Decoration and soft curve as the exterior of home sewing machine used to neutralize its masculinity as machine. Furthermore, Middle class family in Victorian era was learnt to cover the exposed parts of sewing machine into a decent case which was more fitted to their taste on home interior. Middle class family in Victorian era was learnt to cover the exposed parts of sewing machine into a decent case which was more fitted to their taste on home interior.

What did the manufactures do to compose a different narrative of sewing machine and an image of new women? Design the sewing machine to one piece of furniture which was multifunctional and conformed to home environment; yet, making machine more portable and personal which suited to the identity of modern women with the ability of changing space and independence.

Singer de Luxe Library Table No. 66-6

THIS is the famous Singer No. 66, round bobbin machine, equipped with Singer Motor and Singer-light and enclosed in De Luxe Library Table No. 40. Many thousands of women who have used the Singer 66 as a treadle machine and prefer it to all others will find this new combination ideal.



WHEN closed, the Singer De Luxe Electric becomes a fine piece of furniture serving as a desk or table. Furnished in walnut, mahogany or brown mission.

*Sold only by SINGER SEWING MACHINE CO., Inc.
Shops in every city in the world.*

Grace Cooper shared an original text on Singer's brochure for the first New Family machine in 1865, "A few month since, we came to the conclusion that the public taste demanded a sewing machine for family purpose more exclusively; a machine of small size, and of lighter and more elegant form; a machine decorated in the best style of art; so as to make a beautiful ornament in the parlor or boudoir... To supply this public want, we have just produced, and are now preparing to receive orders for, Singer's New Family Sewing Machine." (Cooper, 1976: 34) Singer's sensitivity for the brand new market popped

out from the simple but touching persuasion. Small size, lighter and elegant form, decorated style, ornament for specific space in house, almost covered attractive attributes of family sewing machine since the early of 1860s. Singer, with other makers perceived the emergency of disposing of the old industrial style of sewing machine to

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satisfy the new women consumers who had passion at their home interior decoration and their individual image as well.



Portable electric sewing machine was lighter, consisted of five parts, the main structure above, sewing motor, speed control box, speed control lever and box of attachments. It is the compact version of normal one, neither shuttle nor bobbin, only thread elastic chain stitch remained. When sewing work finished, the whole machine could be completely encased in a fashionable bent wood locking case with modest handle and ready to go. Well-designed portable sewing machine similar to the jewel case or musical box, perfectly

matched the fashion-dressed lady to be involved in social life outside of home. Possession of a portable sewing machine could be favorable to picture an icon of new women who were self-reliant, socially connected, in the fashion, dress-for-identity.

Let's read a text printed on advertising of April 3, 1928 by Singer, which presented the marketing strategy based on user-friendly, well-function, furniture style, convenience and service around. With such a professional and considerable service by Singer Sewing Machine Company and its product, women in home would be capable of needle working independently and pleasurably.

"This is one of the New Singer Electrics. So simple to use that all thought of sewing as a task is gone forever. Just connect it with the nearest light socket ----- hidden power, perfectly controlled enables you to sew at any speed. And when sewing time is over, the machine itself closes compactly and becomes a piece of fine furniture, a desk or table for any room. There are six



New Singer Electric models, beautiful cabinet machines and compact, convenient portables that you can carry in one hand anywhere in the house. And for the non-electrified home, there are treadle machines of superior Singer quality, which you can equip with Singer Motor and Singer light quickly, at little cost, when your home is wired. Important above all is this ----- whatever model you choose, a Singer means enduring satisfaction, with expert service always nearby. You can try any modern Singer in your home, on your own sewing, without

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the slightest obligation. When the Singer man calls, let him give you an interesting demonstration. Or phone or call at the nearest Singer Shop and ask for a machine on the Self Demonstration Plan. "

Like a furniture to adorn the room chicly and a portable personal carrying for the modern women, revolutionary family sewing machine, with the everywhere expert service available and social community around, lucratively swept off the dust of industrial machines, allured women in the city to hug the new life of cozy, individual, and comfortable.

Invisible Memory: Women Consumers and Home Sewing



Artifacts people used in daily life tell stories about who they were and how they lived, which is the logical origin of the material culture study. "Since all of us—men and women—have discovered the form of everyday things as the domain of our personal existence, men and women are equally interested in the good form of sewing machines..... These are no longer the preserve of womanliness."(Betts, 2004: 17) When it comes to the sewing machine, however, what we just discussed about its masculinity in almost everywhere, its rough sense of the metallic, dull coloring, uncased structure, complicated mechanism and the male creators, it's a bisexual badge for both men and women. It's ironically to say that the deep-seated emotional memory between sewing machine and family life was woven largely by women, with their feminine lifestyle.

Home sewing is the chore which lasting for couples of hours or days. Attention, patience, and diligence are three virtues of good housewife which could be tested by the sewing activity. Rozsika Parker (1984) had argued the sewing and embroidery were the dominated ways to making femininity subversively. Nonetheless, sewing is a robust action which depending on its purpose. Like Beecher and Stowe (1896) said, "The task of learning to sew will become a pleasure; and every new toy will be earned by useful exertion." Chore or choice, pleasure or plague, the power of meaning construction of

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sewing was held in hands of women.

There was twofold way to interpret why women love domestic sewing work. (Gordon, 2004; Enstad, 1999; Peiss, 1986) From 1920s, fabric became less popular than ready-mades; (Gordon, 2004) however, women still played sewing needles domestically for a long time



especially for those who lived in the rural area also including the women who had weak power on finance. For the former, outcome of sewing complemented the offering by department store; for the latter, sewing was the main contribution to the family economics. For the family sake, it's mainly about finance and service. Proficient skills on sewing machine was gendered praised as "good womanhood", which represents good wife, responsible mother and competently housekeeper. As the one of main contribution to domestic economic, women fabricated clothes, table cloth, curtain for market to increase the income; on the other hand, women made clothes, quiltings and home ornaments for family members in propose of saving money. For themselves, women involved in sewing routine passionately for hunting pleasure, presenting their taste and creativity, taking part in social community of housewife, more importantly, to perform their gender identity with the behavior of concentrated sewing as good wife and innovated customized clothes as the rebellion to traditional stereotype of femininity. This paper, however, will pay more attention on women's self expression, modernity experience and its image projecting on the sewing machine.

Nancy P. Fernandez (1999: 157-158) employed the word of "anxiety" accurately presenting the tension between the new era of Industrialization and female homemaker. Sought to smooth it, advertiser played the role of "mediator" by creating a modern consumer of female gender and middle class. Buying the sewing machine as the first modern home equipment introduced yourself as the middle class and new identity as consumer. Obviously gendered ideology had appeared in 1867, a very popular household manual *The Philosophy of Housekeeping*, "It's only within a few years that masculine invention has come to the aid of feminine patience and industry." (Lyman, 1867: 486-7) At the beginning, sewing machine appeared as the technology giant suddenly intervening women's daily life was proclaimed it would set women free from the endless repetitive work with needle and thread. "The Queen of Inventions" was praised by the favored magazine *Godey's Lady's Book* in 1860 to celebrate the arrival of Wheeler & Wilson sewing machine. In 1865, the *New York Times*

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unavailable affordability of ready-to-wear apparel; Wealth women were willing to do sewing work for its modern experience and innovation to dress self originally. (Cott, 1987; Cooley, 1911; Shaw, 1996; Burman, 1999) Depending on the well-designed, easily operation, highly efficient sewing machine, housewife utilized it as an agency to manipulate how they appeared in dresses with innovation and uniqueness to picture the modern and novel look.



Desire for diffidence revealed women's yearning for creating fresh identity corresponding with the modernity. "Appearance represent identity; they signal femininity. On a broader level, clothes are part of the iconography of womanhood. But they also indulge the imagination and the senses. Clothes represent a definition or statement of difference, independence and autonomy. They may also signal defiance and deception. [...] Such definition may be illusory, but dressing well places

women in the centre, as creators of the illusion, [...] The signal may be subtle, but then the best deceptions are." (Chamberlain, 1995: 106) Dress fashionably and uniquely is the most effective way, luckily for the women in the 20th Century, domestic sewing machine made their dream come true. No matter poor or wealthy, women with basic knowledge on sewing machine, had the spacious freedom to game with their visual appearances. Identity illusion with the passion and desire embroidered the fabulous picture scroll of sewing machine in the early 20th century.



Once the society confirmed the gender identity of personal sewing machine as female, media propagators created a huge of advertisings prevailing on TV, magazines, newspapers, promotion poster by department stores to extrude optimistic sexism that women enjoy their social life with the sewing machine. Women chose to sewing not for serving others any more, but for pleasing themselves, creating the customized clothes, such as shorten skirt, formfitting trousers, exotic dresses. The image they desired and built was visibly inconsistent with the stereotype of

traditional women in that age.

After the 1930s, women consumers to sewing machine were shattering the rooted norm of the truly womanhood that woman's reasonable performance was to playing roles only for family and home. Their proficient skills about sewing had been transformed from the seamstress to tactful consumers, they begun to become one of the parts in public life by the discourse on home-made fashions.

Conclusion

I will list questions raised upon in the front text and its explanation as the conclusion to this paper.

Why did the sewing machine appear so minimally in the text of design history, except the concise introduction offered by Adrian Forty's Objects of Design in 1986? Sewing machine was concerned as a technological invention rather than a designed artifact in its long history for two reasons. Pursuing the profit not the fame in its aesthetics innovation, manufactures payed almost their attention on its patent competition, mechanism enhancement and marketing promotion for the whole last 50 years in the 19th century; also, as the rising nova in the The Great Britain Exhibition of 1851, meanwhile at which, design as one of newly professions got its first emergence out of the historical horizon it's justifiable that sewing machine failed to be classified as the design.

Who designed the sewing machine, especially the shape, color, structure, decoration, material, etc in other word, who decide the style? Since the industry of family sewing machine in the 1850s was the same budding with the profession of design, the manufactures with the inventors, engineer, technician, and craftsman posed as the role as what we called today designer. Here is something relevant needed to be pointed out that those people who produced the sewing machine was nearly all men. Gender chunk was a virtually unbreathable since the beginning of invention of the sewing machine. The tone of masculinity steered the route of sewing machine development.

Why did the sewing machines become similar among the four dominant manufactures? Limited to its technological obstruction, the patent pool neither radically transited the dilemma of design on sewing machine. Contradictorily, the strict patent competition severely delayed the progression it was supposed to. Similar resource and techniques caused the identical sewing machine products.

What's the relation between home sewing and its machine? A culture of sewing had been longstanding existed, however, the sewing machine really reduced the suffering of the inefficient, difficult and arduous stitching work. Additionally, to expand

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its marketing sharing, manufactures in cooperation with medias, banks, schools and communities to promulgate the benefits of sewing labor along with its sentimental values. All the stakeholders of sewing machine industry absorbed nutrition from the sewing culture. A truly woman with proficient skills of sewing served for family and society, who was also a confident and independent modern new woman devoted to the economic prosperity of consumer culture.

How did the sewing machine from the factory equipment become emotionally and physically acceptable to the family members, especially to the women, with the methodology of design? Shortly speaking, design strategy made the change. Firstly, redesigning its size, simplifying the structure, improving its mechanism, softening its appearance, adding some styled elements taken over from the Art Nouveau, Rococo, Art Deco, and Orientalism, were applied for catering to the taste of women consumers. Then, rendering the modern attitude of homing sewing was an essential step to persuade women to choose the sewing machine both for the family and themselves.

Needles working with female family elders, always was woven into the cherish memories to the next female generation; sewing experience alone or with female friends, were other emotional treasure in self-pride memories. The former stories were recorded by many kinds of literatures, however, the latter one was comparatively stayed invisible, especially from the angle of the sewing machine history. What can we learn from gendered historical narratives of sewing machine? Situated at the center of design history with gender, sewing machine, technology, domesticity, women identity, modernity, consumer culture, style, fashion and taste, it's intriguing to zoom in the every detailed grid in the web of earlier industrialization society and its meaning on women and their life. The design history of sewing machine without women and their memories is fadedly and boring.

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