A BRIEF HISTORY OF THE WASHING MACHINE

Or, Don't Air Your Dirty Laundry in Public

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By 1873, around 2,000 U.S. patents had been filed which dealt with the mechanization of laundry.

Over the last two hundred years, the American home has offered the inventor's imagination a fertile terrain of unsolved problems and a lucrative market to the clever entrepreneur who might solve them. Of the domestic chores traditionally assigned to American wives, laundry was one of the most arduous. Unmechanized clothes washing involved filling tubs of water at a well and hauling them to the kitchen or backyard where they could be heated on a stove, and then soaking, pounding, rinsing, wringing, hanging, and ironing the articles by hand. The entire process demanded at least a day and half of physically exhausting and intellectually unrewarding labor. The procedure was taxing in temperate months and close to impossible in the dead of winter. The numerous domestic washing machines patented and manufactured during the nineteenth century lightened the task only minimally; these manually driven devices required constant attention and had to be filled and emptied by hand.

With the rise of industrialization beginning in the early nineteenth century, the space of the home was increasingly marked as the special sphere of women's labor; men went to work for wages in the marketplace, and women remained at home as managers of bodily health and comfort. Whereas poor women became a major part of the industrial work force, the primary activity of middle-class wives was housework. (The social category “middle class” was rapidly expanding, and one condition for membership became the non-participation of wives in wage labor.) Because housework lacks the monetary value explicitly attached to men's work, numerous nineteenth-century domestic guides infused household duties with moral and social value, helping make the role of women more palatable. Catharine Beecher, for example, compared housework to such exalted disciplines as science, business, and the religious ministry; her 1869 book American Woman's Home helped establish the servantless, single-family dwelling as the ideal architecture of middle-class America.

Yet even while Beecher treated cooking, shopping, and child-care as morally elevated tasks that should be personally administered by the housewife, she hoped for the rise of community laundry services, that would remove washing from the private home: “Whoever sets neighborhood laundries on foot will do much to solve the American housekeeper's hardest problem” (334). Middle-class and working-class women were quick to delegate laundry to hired helpers—even in the early decades of the twentieth century, when domestic servants were becoming less common. Laundry, devoid of the creative potential of cooking and child care, did not occupy a cherished place in women's lives.

The woman in this 1869 ad for a washing machine looks decidedly disenchanted with her task, despite her advanced equipment.

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Many domestic activities did indeed exit the household during the course of industrialization. Textile manufacture was mechanized early in the nineteenth century, and clothing production began leaving the home with the ascendance of the commercial sewing machine after 1850. The 1880s saw the rise of commercial bakeries, modern food processing factories, and nationally branded packaged goods. These developments moved procedures out of the home and placed them under the control of private businesses: the focus of domestic labor shifted from production to consumption.

The nineteenth century also witnessed the rise of a commercial laundry industry, whose business steadily grew between the 1840s and the Depression, regained strength briefly after WWII, and then plummeted—perhaps for good—in the 1950s. The early commercial laundry industry focused on the care of men's garments. Around 1830 detachable cuffs and collars were invented, which could be washed independently of the rest of the shirt—standards of hygiene did not yet suggest that the entire article should be cleaned just because its collar had gotten gray. Collar manufacturers soon provided laundry services to their customers. Commercial laundries also met the demands of various bachelor communities, such as New York merchant seamen in the 1830s and California goldminers in the 1850s. The family laundry market emerged after 1890, its services ranging from “wet wash,” which delivered damp laundry to be dried and ironed at home, to mechanically ironed “flatwork,” to “fully-finished” garments.

The commercial laundry business proved its popularity in the U.S. in the 1920s, a period which saw the dramatic expansion of the consumer economy and the accelerating impact of technology on the domestic environment. In a time when women were learning the patterns of consumerism—such as purchasing canned soup and ready-made clothing—the idea of sending out laundry to a commercial establishment was hardly alien, and seemed, in fact, to be part of technological progress.

Yet a battle was being fought between the commercial laundry business and washing machine manufacturers, who identified the home as a lucrative mass market. Rather than sell a few large machines to central establishments, manufacturers sought to sell many smaller units to individual households. Advertising and doorto-door salesmanship tried to persuade households to invest in washing machines. Migrations to the suburbs also encouraged washing machine purchase, by increasing dependence on the automobile (another private domestic appliance) and discouraging centralization.

Looking back at history, one is tempted to view contemporary products and customs as the happy ending, the necessary resolution, of the narrative “story” of “progress.” If one glances backward at American laundry, however, in relation to other regions of the industrialized home, one sees not a uniform march towards the customs of the present day but a wandering path whose destination was, for a time, uncertain.

The annual volume of the commercial laundry industry rose from $104,000,000 in 1909 to $541,000,000 in 1929.

By 1949 around 61 percent of the nation’s 24,500,000 non-rural households possessed washing machines.

“The advent of individually-owned electric washing machines... has slowed up the trend of laundry work—following baking, canning, sewing and other items of household activity—out of the home to large-scale commercial agencies... the installation of costly electrical machine units used only one day a week in hundreds of Middletown homes, represents not ‘progress’ but a back- eddy in home-making technique.”

Helen and Robert Lynd, Middletown, 1925
By 1929 there were fifteen patents for powered machines fitted with a rotary agitator. 76 percent of the washing machines listed in the 1930 Electrical Merchandising Index employ the agitation principle.

Nineteenth-century domestic washing machines can be grouped into two basic classes: those which imitate the principal of the traditional wash board by rubbing the soiled garments against an abrasive surface, and those which circulate hot, sudsy water through the fabric. Designs of both type existed side by side until the early twentieth century, when circulation-based machines became the standard.

In 1859-60 Hamilton E. Smith of Pittsburgh patented a commercial washing machine consisting of a perforated inner cylinder suspended inside a water-tight outer cylinder, both constructed from wood. When the inner cylinder is rotated, soapy water circulates through the clothing. In 1863 Smith improved his invention with a pulley device which automatically reverses the direction of the cylinder, and thus prevents the articles from clinging to the sides of the tub, keeping them in constant agitation. Most commercial washers in use after the Civil War were indebted to Smith's device. Smith patented another washing machine in 1869 (see Patent No. 88816 on the following page), which also reverses the motion of the tub, but in a more dramatic fashion.

According to Siegfried Giedion, a domestic washing machine was patented in 1869 (Patent No. 94,005) that functions just like a modern home washing machine, although the design went more or less unnoticed at the time. It consists of a cylindrical tub with a four-blade agitator driven by a shaft passing through the bottom of the tub, turned by a hand crank. The motion of the gyrator circulates soapy water through the garments. Motorized washing machines based on this principle became the norm in the twentieth century. More common nineteenth-century designs beat the fabric with a "dasher," "dolly," or "beetle," while others tumble the garments in water or use pressure to squeeze water in and out of the fabric.

Most nineteenth-century washing machine designs pay little attention to visual appearance; many resemble ordinary wash tubs with mechanical appendages, while others are rectangular troughs which look more at home in the barnyard than the household. In the 1920s and 30s manufacturers hired professional designers to improve the marketing appeal of home washing machines; one successful design strategy was to conceal the mechanical elements inside a smooth shell, making the machine more at home in the modern kitchen. In the 40s and 50s, the dominant form became a cylindrical tub enclosed inside a legless rectangular box, visually related to the modern stove and refrigerator. This style remains the norm today.

REFERENCES
This washing machine type involves an "ordinary wash tub" to which has been attached a "rubber," which moves up and down against the clothes, grinding them against the ridged bottom of the tub. In using the machine the clothes to be washed are placed upon a stationary rubber, and a sufficient quantity of soap and water are put in. The movable rubber is lowered upon the clothes, and the cover is secured in place. The operator then grasps the cross-bar in his hands, and turns the rubber back and forth, which washes the clothes very quickly and thoroughly.

This design uses a principal similar to the "clothes pounder," a commonly available object consisting of a sometimes elaborately modelled surface with a long handle, which could be used with any wash tub. Here, the pounder is a broadened disc which has been integrated into the structure of the tub, passing through its cover.

This type of washing machine forces the clothing back and forth along slats on the bottom of the tub. The uniqueness of this particular design is to attach a traditional washboard to the lever which pushes around the clothes, allowing the operator to clean selected items by hand: "By my machine the clothes are beaten moderately to remove the dirt, and then the beater is drawn back... The operator then, by hand, washes out the dirtiest parts... [saving] the clothes from much useless rubbing." The design testifies to the hardship inflicted on fabric by friction machines.
Patent No. 258,409 George W. Glick, Inventor 1882
This commercial washing machine employs the cleansing action of steam, which is generated by heating water contained in the base. By moving the lever E, the operator causes the inner cylinder to rotate in alternating directions: "the fabrics or clothes therein are rolled and tumbled, so that all portions thereof are thoroughly subjected to the action of the steam." The ability to reverse the direction of agitation is central to modern washing machines—without this feature, the clothing would wind around the central agitator or cling to the sides of the tub.

Patent No. 117,353
Decatur West, Inventor 1871
In this domestic machine, the turning central axle forces the clothes against a set of rollers, whose downward motion keeps the fabric from winding around the axle.

Patent No. 88816 Hamilton E. Smith, Inventor 1869 (RIGHT)
The tub of this industrial washer "oscillates, or plays freely from side to side... When the motion of the box is reversed, the springs contract and expand alternately, allowing a complete oscillation... causing the water and clothes to be all suddenly thrown from one end to the other of the box, and producing a violent action of the water, which cleanses the clothes rapidly and thoroughly."
This washing machine squeezes water in and out of the fabric by passing it through a set of rollers; the same rollers also can wring the clothes dry. The inventor has paid remarkable attention to appearance and ease of maintenance: "The tub is furnished with a hinged top and when closed forms a neat table... To repair a part or to thoroughly clean the whole the cylinder may be released... and taken out... For transportation the legs, crank, and springs may be removed and packed in the tub."

By making a washing machine that is a "neat table" when not in use, the inventor attempted to integrate the machine into a domestic environment that was becoming increasingly associated with leisure rather than work. In a similar spirit, industrial designers in the 1950s de-emphasized the industrial quality of electric washing machines by concealing their mechanical elements inside a smooth shell.