



## Iron and Rust in the Belle Epoch

Casey R. Stannard and Mary Ratcliff, Louisiana State University, USA

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Designed products, such as apparel, can be greatly improved by a collaboration between designers from various disciplines (Gorea, Mayer, & Conover, 2019). Following this concept of design collaboration, the present design represents a collaboration between a metal sculptor and an apparel designer. The designers wanted to create a piece that highlighted the skills of each. The piece began with iron bows, which had been cast by the metal sculptor. The bows brought to mind the details of the early 1900's women's apparel. Thus, the fashions and economic changes of the Second Industrial Revolution and specifically the time around 1900 were chosen as a source of inspiration for the design. Historic fashions are often an excellent source of inspiration for apparel design as they are rich in unique design details and cultural symbolism (Parsons, 2015).

The Second Industrial Revolution in the United States lasted between the years 1870-1920 (Hirschman & Mogford, 2009). During this time period, there were significant advances in manufacturing and production for many industries, such as the railroad and automobile sectors (Hirschman & Mogford, 2009). Huge skyscrapers and steel bridges were beginning to be erected in major cities all across the US during this time (Hirschman & Mogford, 2009). Titans of industry amassed enormous wealth, which was displayed using consumer goods, such as fashion. The style for women in 1900 incorporated tight corseting and full, trumpet-silhouetted skirts (Ormond, 1967). Necklines were often high. Ruffles, bows, and lace were also used extensively in fashion during this time period (Davis, 2010; Ormond, 1967). Lace was more becoming more commonly available due to mass production and it was used liberally in the fashions of the day (Davis, 2010). The mass production of lace was made possible by newly invented machinery, this represents another important relationship between industrialization and fashion in the Second Industrial Revolution (Davis, 2010).

To express the inspiration of fashion and industry in 1900, the designers choose to mix materials. The final design was inspired by fashion from the early 1900s and features a corset-style bodice and gored trumpet skirt. Ruffled mesh was utilized to further emphasize the frivolity of fashion and importance of lace at this time. A high-necked yoke was also added as a nod to early 1900's modesty. The design was made from a cotton twill that was rust dyed using iron grates to create a unique pattern. Finally, the cast iron bows were added to the bodice and neck to further emphasize the importance of industry in this time period.

The design process began with casting the iron bows. The iron pour was held as a special event at a local living history museum. The metal sculptor worked with others from the university to prepare the metals, pour the liquid metal, and keep the process safe for all involved. The metal sculptor utilized a mold in the shape of the bows. Next, scrap car metal was heated into a liquid that was poured into the molds. The metal sculptor then cleaned the rough edges of the bows when they were cool.

Following the iron pour, the designers worked together to create the rust dyed fabric. The designers wanted to produce a print that was simple and open, to mimic the laces of the inspirational time period. Thus, iron grates that are readily available for industrial purposes were chosen. The metal sculptor repurposed some grates from a previous project and carefully cleaned the metal so that the iron could produce the most rust on the fabric. The designers conducted a series of experiments to achieve the best outcome. To create the final fabric, the designers placed the grates over undyed 100% cotton twill and sprayed the fabric and iron with a mixture of vinegar and water. Weights were added to hold the grates down on the fabric. A range of colors and patterns were achieved based on how much weight/pressure was added to the grates during the dyeing process. The fabric sat with the grates for seven days to transfer the rust. Following the dyeing process, the fabric was rinsed with water and salt to set the color.

Next, the apparel designer draped the garment to reflect the inspiration source, while still being modern. The bodice was inspired by corsets of the inspirational time period. It extended to the hips and also featured an unusual waistline that mimicked the garter tabs featured on 1900's undergarments. The multi-gored skirt fit tight over the hips and then flared at the hem to create the trumpet silhouette. A yoke with a high neckline was also added to bring in the inspiration. A collar made from the rust dyed fabric was added for contrast.

Once the drape was completed, the patterns were digitized into Optitex and cleaned. Then a muslin prototype was constructed to assess fit and proportion. Next, the apparel designer carefully cut the design from the rust-dyed cotton. The pattern pieces were placed on the fabric so that the pattern was randomly applied all over the design as opposed to having heavier rust in a concentrated area. The lace yoke and godets were made from a 100% nylon mesh trim with pre-sewn ruffles. The trim was often too small for the pieces needed so multiple layers had to be attached to create the proper sizes for the design. The ruffled trim was also added to some skirt gores to help create visual cohesion and to break up the intense rust print.

The design was sewn on an industrial machine because the rust was occasionally difficult to pierce with a home sewing machine. The bodice and skirt were joined by hand due to the angles of the waistline. An invisible zipper was added to center back for donning and doffing. Hooks and eyes were added to the mesh yoke and collar. Following the outer garment

construction, a full lining was inserted. Finally, the metal sculptor's cast iron bows were stitched to the bodice front. A final bow was added on the collar at the base of the neck, much like a cameo would have been worn in the 1900s.

This design advances knowledge in a couple of different ways. It utilizes a unique source of inspiration- the Second Industrial Revolution. By calling attention to this time period, the design allows viewers to think about the relationship that existed between fashion and manufacturing in the early 1900s. Additionally, this design represents a collaboration between two designers (apparel and metal) who might not normally work in partnership. Collaboration between different design fields can lead to interesting interpretations of design problems and unique results (Gorea, Mayer, & Conover, 2019). Thus, future collaboration between different designers should be continued in order to achieve unique results that would not be possible when only working in one type of media.

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