Sheet 1
2 Sheets

Gitchell & Badger.

Fabrics for Hats.

No. 18487 Patented Oct. 20, 1857.

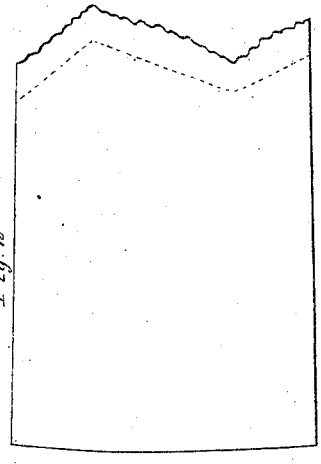


Fig. 2

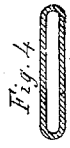


Fig. 4

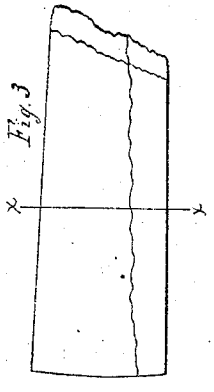


Fig. 3

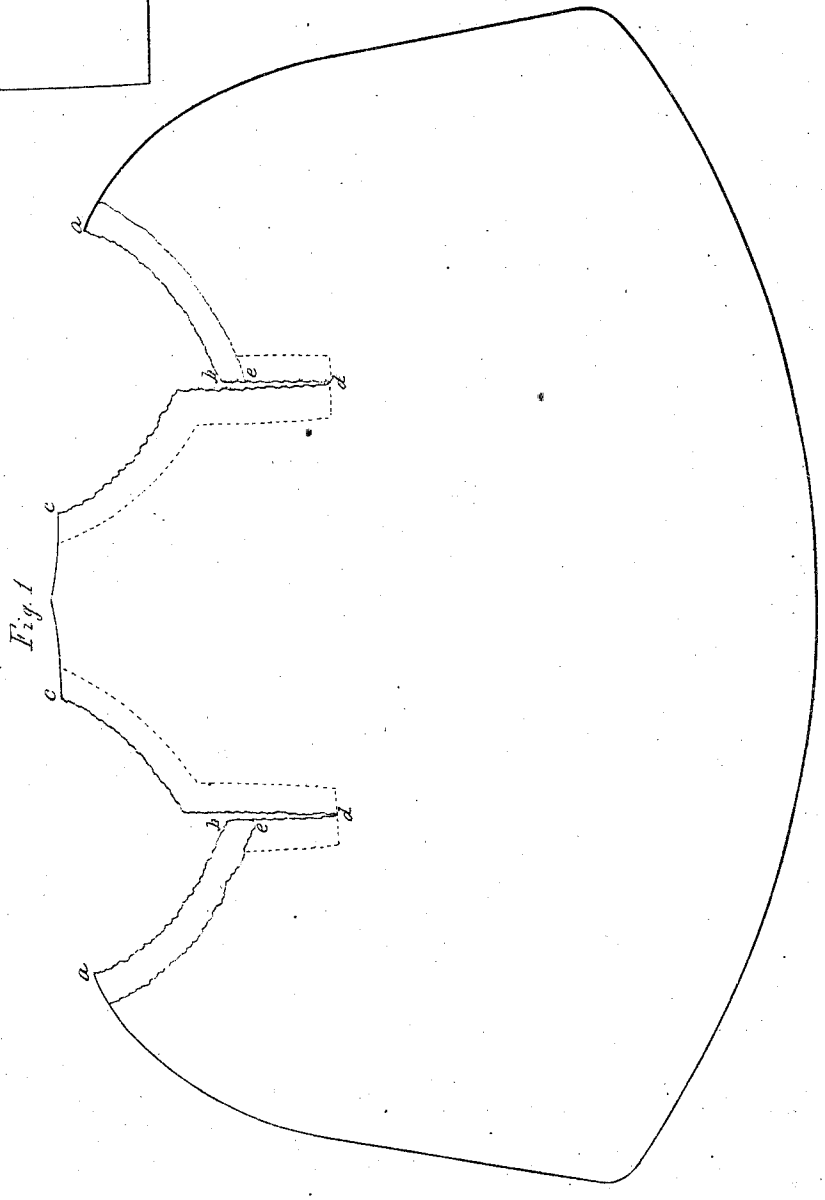


Fig. 1

Sheet 2
2 Sheets

Gitchell & Badger.

Fabrics for Hats.

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Fig. 5

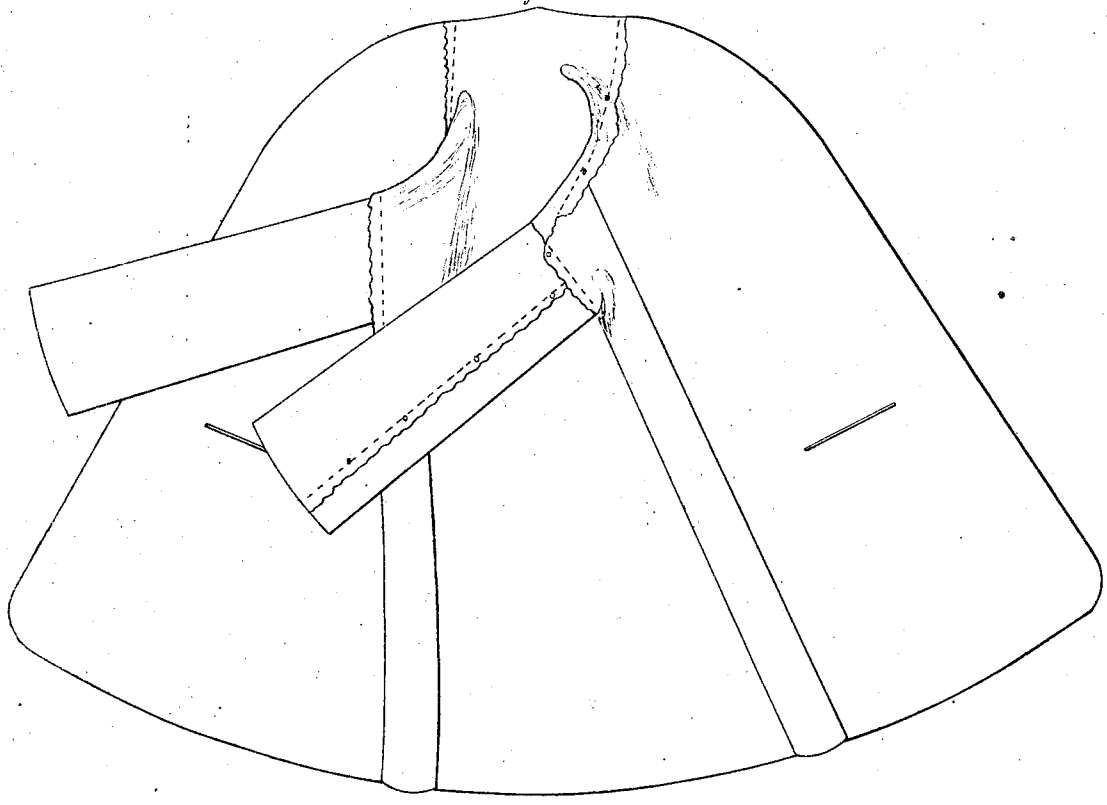
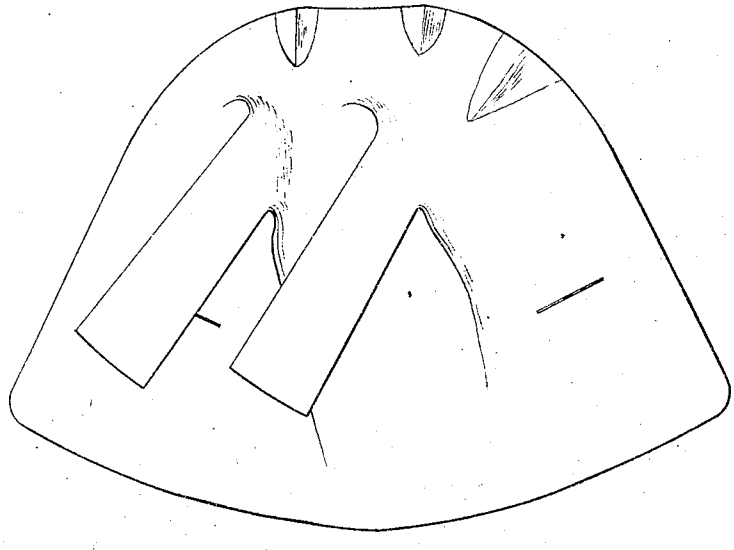


Fig. 6



UNITED STATES PATENT OFFICE.

D. W. GITCHELL AND L. W. BADGER, OF MATTEAWAN, NEW YORK, ASSIGNORS TO THE SEAMLESS GARMENT MANUFACTURING CO.

MANUFACTURING SEAMLESS FELT GARMENTS.

Specification of Letters Patent No. 18,487, dated October 20, 1857.

To all whom it may concern:

Be it known that we, DELOS W. GITCHELL and LUTHER W. BADGER, of Matteawan, in the county of Dutchess and State of New York, have invented an Improved Method of Manufacturing Seamless Articles of Wearing-Apparel, &c.; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

We take a bat, after it has been operated upon by the "jigger" or hardener, and cut from it the respective portions of the garment, or other article, which we desire to form. We then, with a steel comb, or other suitable instrument, bevel off the edges of the said component parts which are to be united to other edges for the purpose of preliminarily forming the said garment or other article, and then we put the said garment, or other article, into its preliminary shape by placing the beveled edges of its component parts in contact with each other and uniting them by means of common pins or any other suitable temporary fastening. We then place the said temporarily shaped garment, or other article, under a "jigger" or hardener, (such as is ordinarily used in felting establishments) and subject it to the action thereof for a sufficient length of time to unite the respective original parts of the said garment as firmly to each other as the fibers composing the said parts are held together. The batted garments, or other articles, when thus prepared, are placed in a fulling mill and subjected to the ordinary fulling operation for a sufficient length of time to convert the hardened batted fabric of which they were originally composed into a tough and tenacious cloth. It will then be found that the places where the original component parts of the said garments, or other articles, were united to each other will be perfectly smooth and of uniform thickness with the other portions of the said articles, and also of uniform strength with the said other parts of the garments, or other articles, thus formed. When taken from the fulling mill, the said garments, or other articles may be stretched upon suitable forms for smoothing and drying,—and as soon as this is accomplished, they are in the proper state to be trimmed in any style that taste, fancy, or fashion may dictate. Preliminarily forming articles of clothing, &c., from hardened bats—instead of raw bats—enables the said articles to be perfectly shaped at first and gives them a sufficient degree of strength to enable them to pass through the condensing operation in the fulling-mill without injury to their perfection of form. Therefore, as the articles made by our process do not owe their perfection of shape to any forcing operation upon forming-blocks, they will retain their perfect shape under all circumstances, whether wet or dry.

In the accompanying drawings Figures 1, 2, and 3, represent the component parts of a coat in a proper state for being united to each other; and Fig. 4 is a section in the line *x*, *x*, of Fig. 3. Fig. 5, represents a garment in a proper state for being operated upon by the "jigger" or hardener, and Fig. 6, represents the same garment after it has passed through the required hardening and fulling operations.

The edges *a*, *b*, in Fig. 1, we usually scratch or bevel off on the outer side, and the edges *c*, *d*, *e*, we usually scratch or bevel off on the inner side, back to the red lines in Fig. 1. The sleeve portions (Figs. 2 and 3) we usually bevel from the outer side of the inner ends thereof, as shown in the drawings, and the side-edges of the said sleeve portions may be so scratched as to enable them to be united in the manner represented in Fig. 4.

An inspection of Fig. 4, which represents the union of two beveled or scratched edges of a hardened bat, must convince any one that when subjected first to the hardening and then to the fulling operations the said edges will be as firmly united as any other portion of the felted article.

Garments, mittens, gloves, shoes, leggings, cases, sheaths, &c., formed in the above described manner are stronger and more durable than fibrous articles formed in any other manner.

Having thus fully described our improved methods of manufacturing seamless articles of wearing apparel, &c., what we claim therein as our invention and desire to secure by Letters Patent, is—

First cutting the original portion, or portions, of a seamless article of clothing from a hardened bat, and then so perfectly uniting the edges of the said portion, or por-

tions, with each other, by felting, that the articles thus formed will be of uniform thickness in every part, and will be of so tenacious a texture that they will retain their original shape during the ultimate condensing operation in the fulling mill—all substantially as herein set forth.

The above specification of our improved method of manufacturing felted seamless articles of wearing apparel, signed and witnessed this 22nd day of August, 1857.

DELOS W. GITCHELL.
LUTHER W. BADGER.

Witnesses:
L. S. FORMAN,
ROBERT BISHOP.