No. 790,033. PATENTED MAY 16, 1905.

T. DAVIS.

PROCESS OF MAKING DRESS SHIELDS.

APPLICATION FILED SEPT. 19, 1904.

Fig. 1

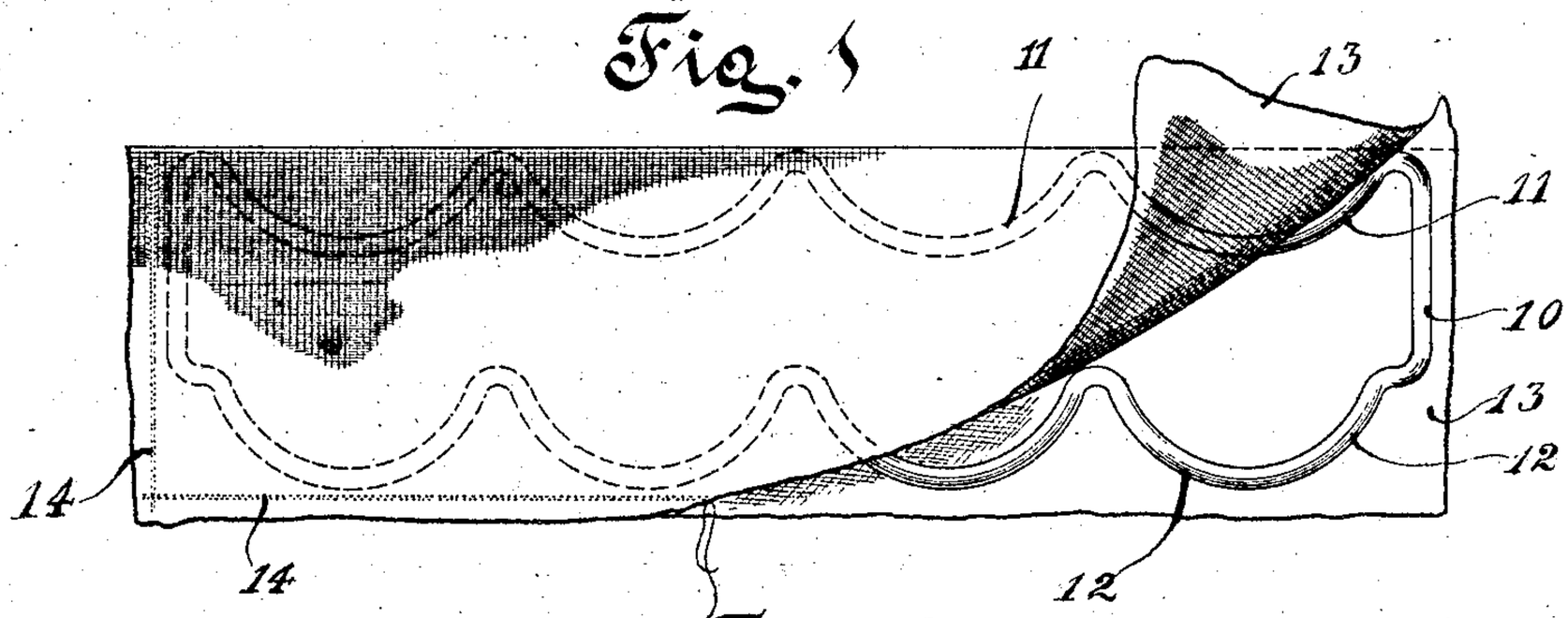

Fig. 2

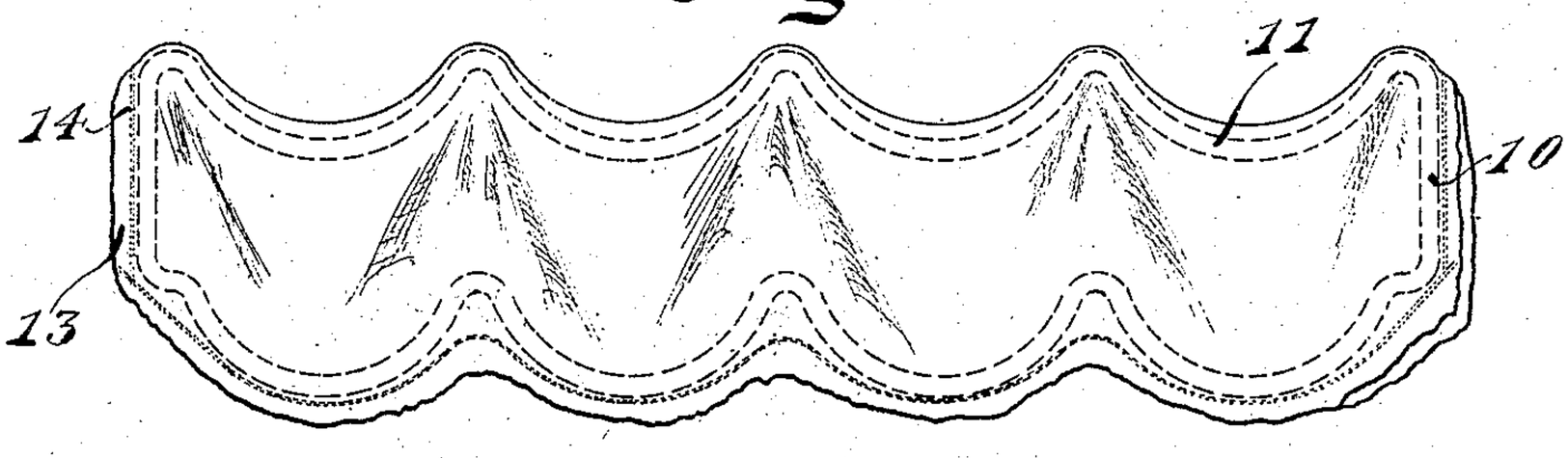

Fig. 3

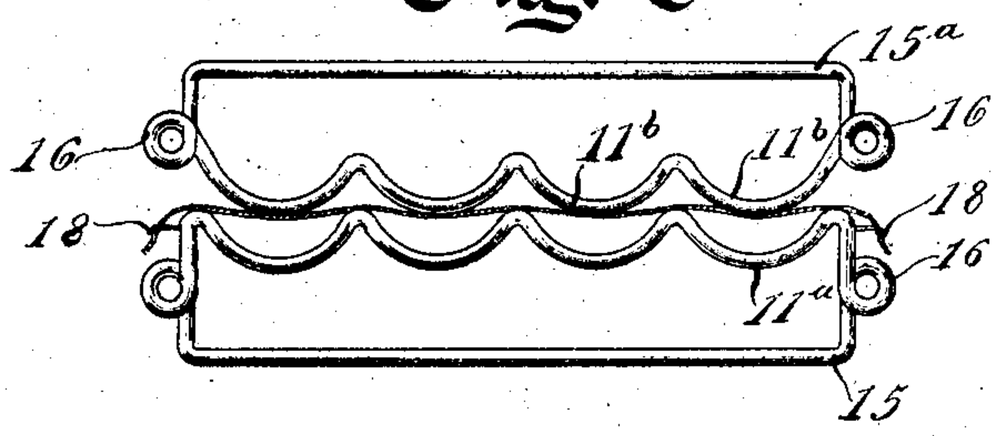

Fig. 4

Fig. 5

Witnesses
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No. 790,033. Patented May 16, 1905.

UNITED STATES PATENT OFFICE.

THERON DAVIS, OF NEW YORK, N. Y.

PROCESS OF MAKING DRESS-SHIELDS.

SPECIFICATION forming part of Letters Patent No. 790,033, dated May 16, 1905.

Application filed September 19, 1904. Serial No. 225,157.

To all whom it may concern:

Be it known that I, THERON DAVIS, of the city, county, and State of New York, have invented a new and Improved Process of Making Dress-Shields, of which the following is a full, clear, and exact description.

My invention relates to improvements in the manufacture of dress-shields, and especially to the manufacture of such shields as are made from rubber-coated fabrics.

The object of my invention is primarily to produce a shield which will have no seam at the top—that is, at the part which fits over the arm-size—and further to produce means for making the shields smoother and cheaper than by the means usually employed.

I have found that by using the proper materials and holding the fabric over a suitable form I can shrink the material of the shield to shape, thus making it seamless so far as the essential parts are concerned and at the same time provides a very cheap process of manufacture.

With these ends in view my invention consists of a process of making dress-shields which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is an elevation showing a simple means of confining the rubber-coated fabric and carrying out one step of the invention. Fig. 2 is a view showing the fabric shrunk to shape. Fig. 3 is a detail elevation showing how the shields may be conveniently made in multiple, but with the forms in their first position. Fig. 4 is a sectional elevation showing the forms pressed to shape, and Fig. 5 is a broken cross-section of the structure shown in Fig. 4.

In carrying out my process the apparatus is not very essential, and many forms can be used. I have shown, therefore, two simple ones of carrying the process into effect. As illustrated in Figs. 1 and 2, a wire frame 10 has its top edge formed into a series of bends 11, corresponding in shape to the top of the dress-shield, and its bottom edge has a series of bends 12, like the bottom shape of a dress-shield. A rubber-coated fabric 13 is folded over the frame and the edges confined by stitching, as shown at 14, or other suitable means, and the fabric is then ready for dipping, as hereinafter described. Figs. 3 to 5 show a means for making the shields in multiple, in which case frames 15 and 15^a are used, one having the bends 11^a at the top and the other corresponding bends 11^b at the bottom, and the frames have at the ends eyes 16, adapted to receive keys 17 for holding the frames in place. The fabric 13 is drawn across the lower frames 15, and the upper frames 15^a, which are made to alternate with the frames 15, are then pushed down to place, as shown in Figs. 4 and 5, and a series of folds in the fabric 13 are made, the ends of the fabric being held suitably, as shown at 18.

When the fabric is confined as shown either in Figs. 1 and 2 or in Figs. 3 to 5, it is dipped in a strong solution of caustic soda and immersed for perhaps one minute's time. The fabric is then washed and permitted to dry. In this connection I wish to say that it is preferable to use a loose-mesh fabric, as it shrinks better. As the fabric dries it shrinks wherever it is possible, and as it is bound between the several frames or confined on a single frame, as stated, it follows the convolutions of the frames 10 or 15 or 15^a, and so in any event the middle portion of the shield—that is, the top part which fits over the arm-size—assumes the shape of the form, as shown at 11 or 11^a, and a perfect seamless shield is produced so far as this particular part is concerned. The shields can be vulcanized on the forms or taken off and then vulcanized, and in either case they are separated between the bends and have their edges finished in any usual or desired way.

As I have before remarked, the form of apparatus is not very essential, the main thing being to hold the fabric in shape to dip it in the solution stated and provide for having it shrink in a way to form the top part of the

complete shield, this part, it being understood, corresponding in reality to the middle section of the shield where it fits over the arm-size.

In carrying out my process I have used caustic soda; but quite likely other alkaline solutions might have a similar effect, and I therefore do not limit my invention to the use of this particular shrinking agent.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The herein-described process of making dress-shields of rubber-coated fabric which consists in confining the fabric on a form, shrinking it to the desired shape, and then vulcanizing it.

2. The herein-described process of making dress-shields of rubber-coated fabric which consists in confining the fabric on a form, then dipping the form in a solution of caustic soda and then washing and drying the fabric thereby shrinking it to the form.

3. The herein-described process of making dress-shields which consists in fastening the rubber-coated material of the shield to a form, then dipping the form in an alkaline solution and then drying the fabric, thereby shrinking it to the form..

4. The herein-described process of making dress-shields which consists in fastening the rubber-coated material of the shields to a form, dipping the form in an alkaline solution, then washing the material and finally drying it on the form, thereby shrinking it to shape.

THERON DAVIS.

Witnesses:
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