

(No Model.)

2 Sheets—Sheet 1.

A. J. HISCOTT.

DIE FOR MAKING SEAMLESS DRESS SHIELDS.

No. 339,294.

Patented Apr. 6, 1886.

Fig. 1.

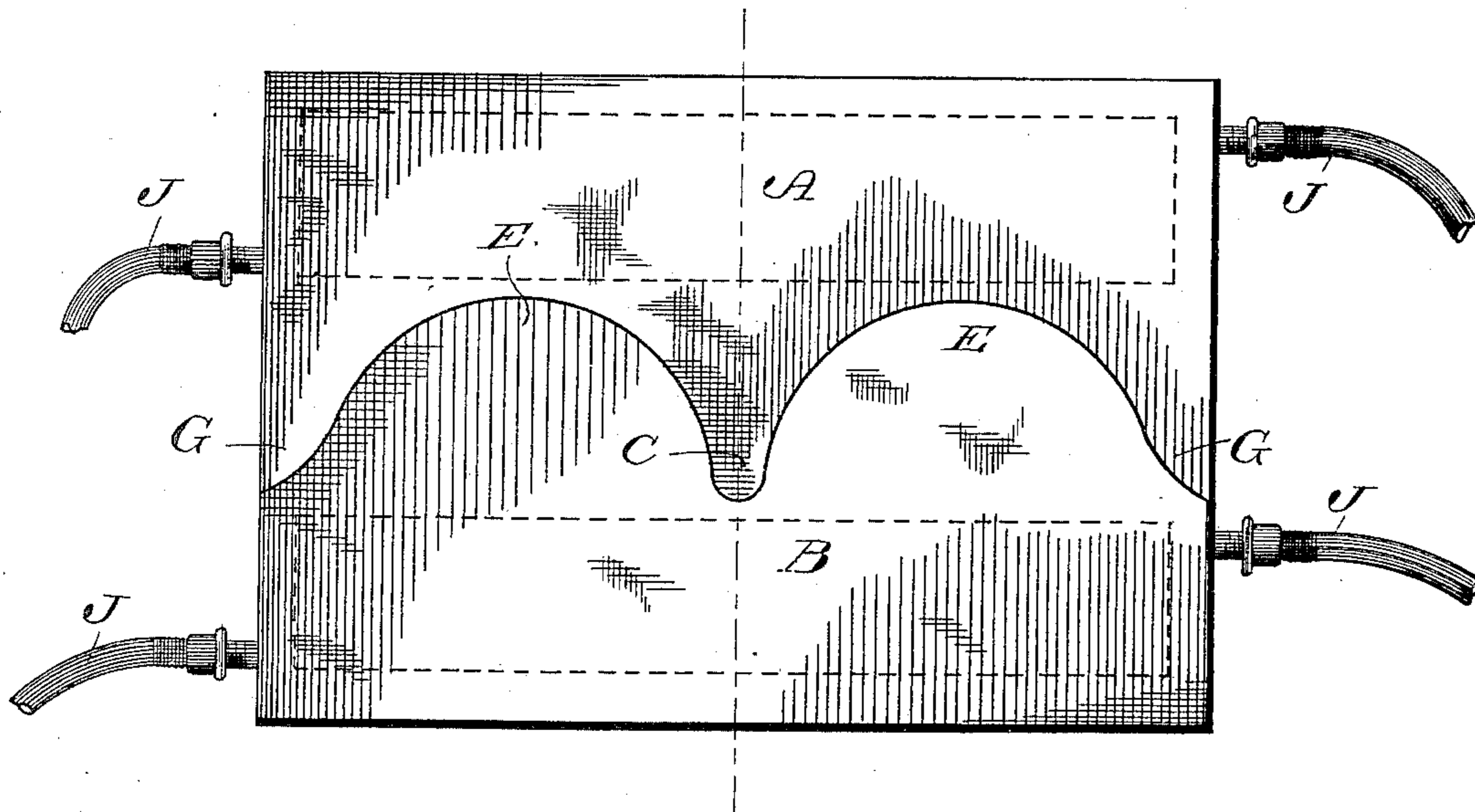
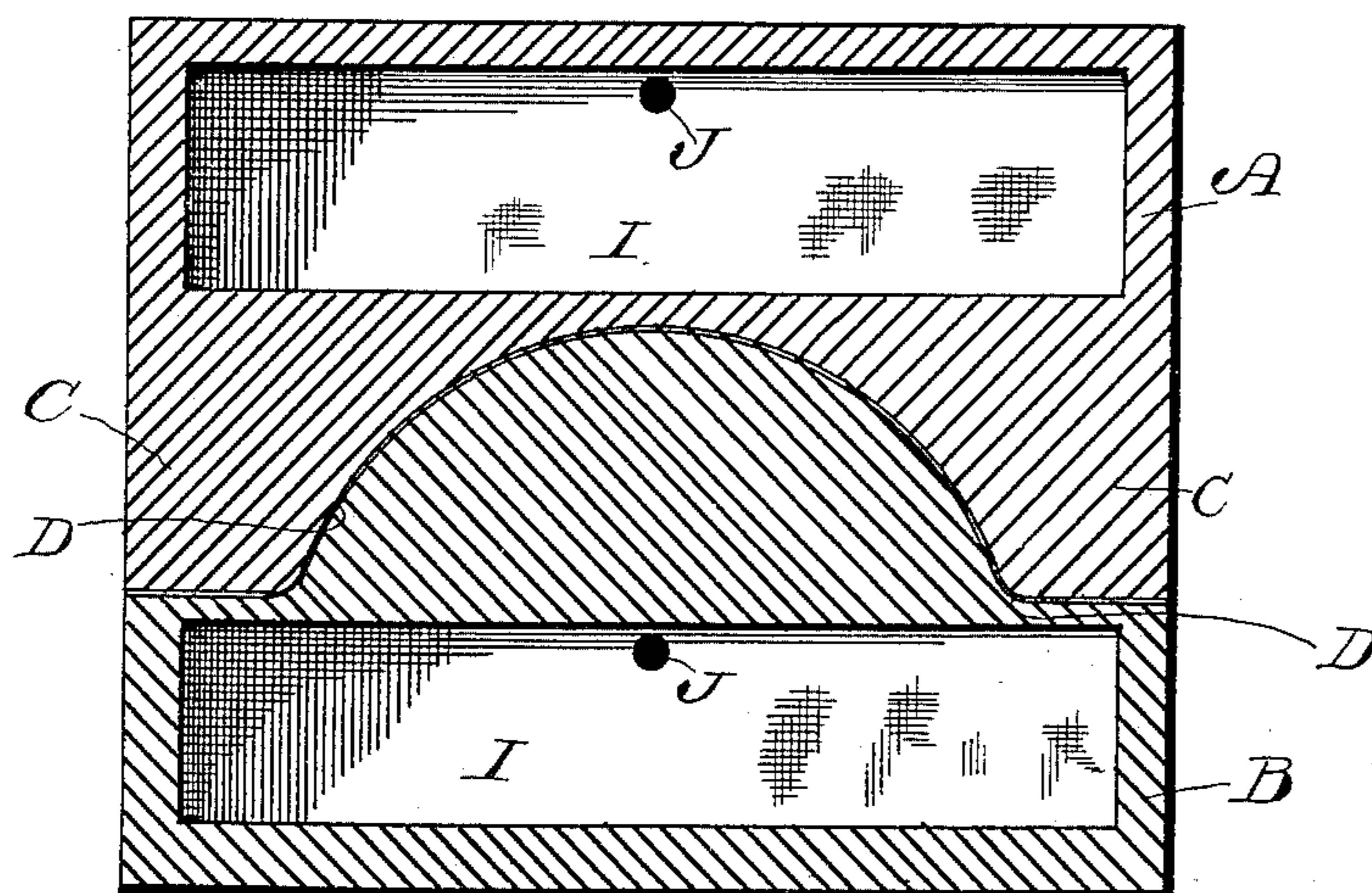


Fig. 2.



Witnesses

S. Williamson

E. Stewart Sumner

Inventor

Alva J. Hiscott

By *Smith & Hubbard*

Attys

(No Model.)

2 Sheets—Sheet 2.

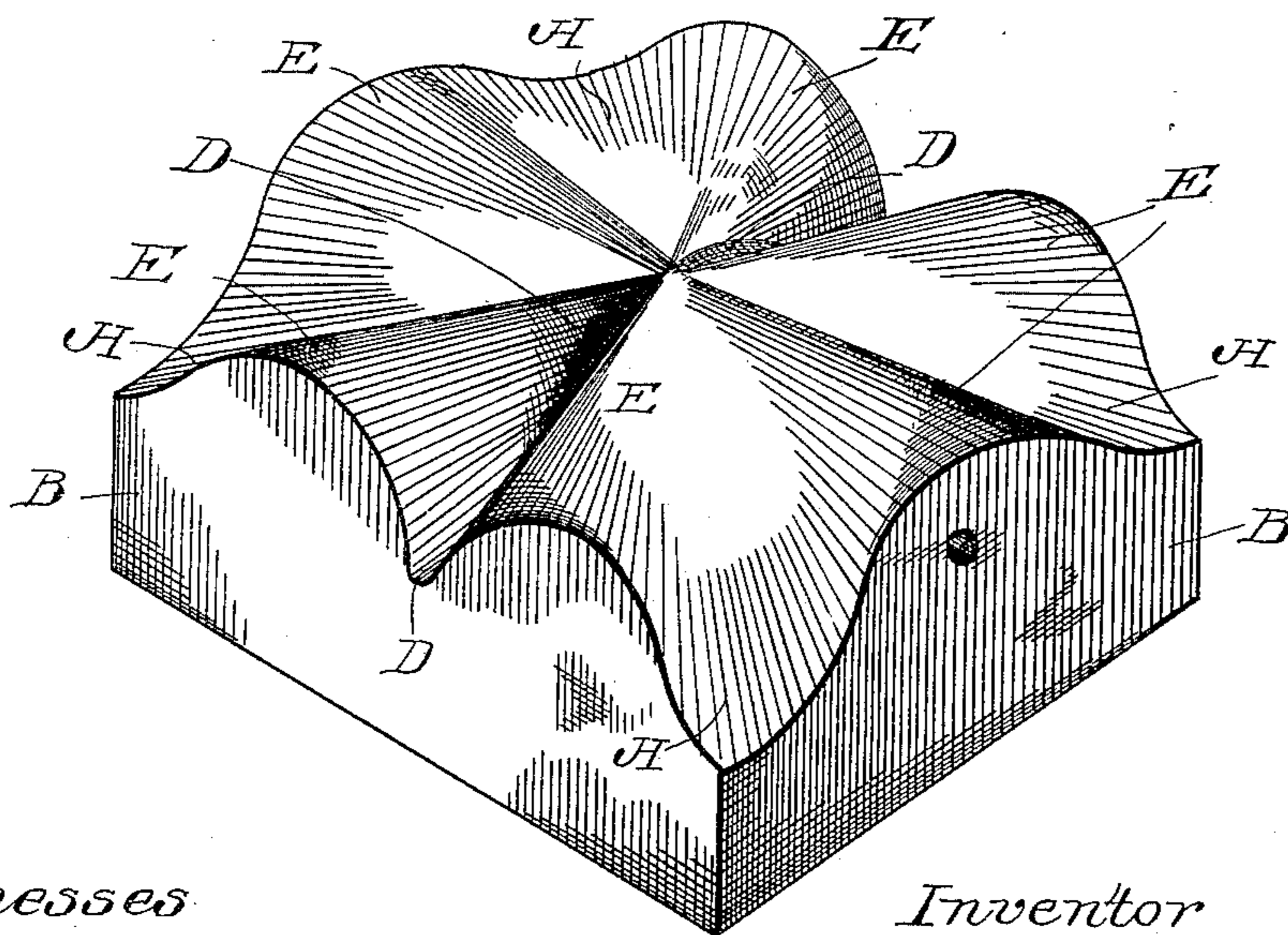
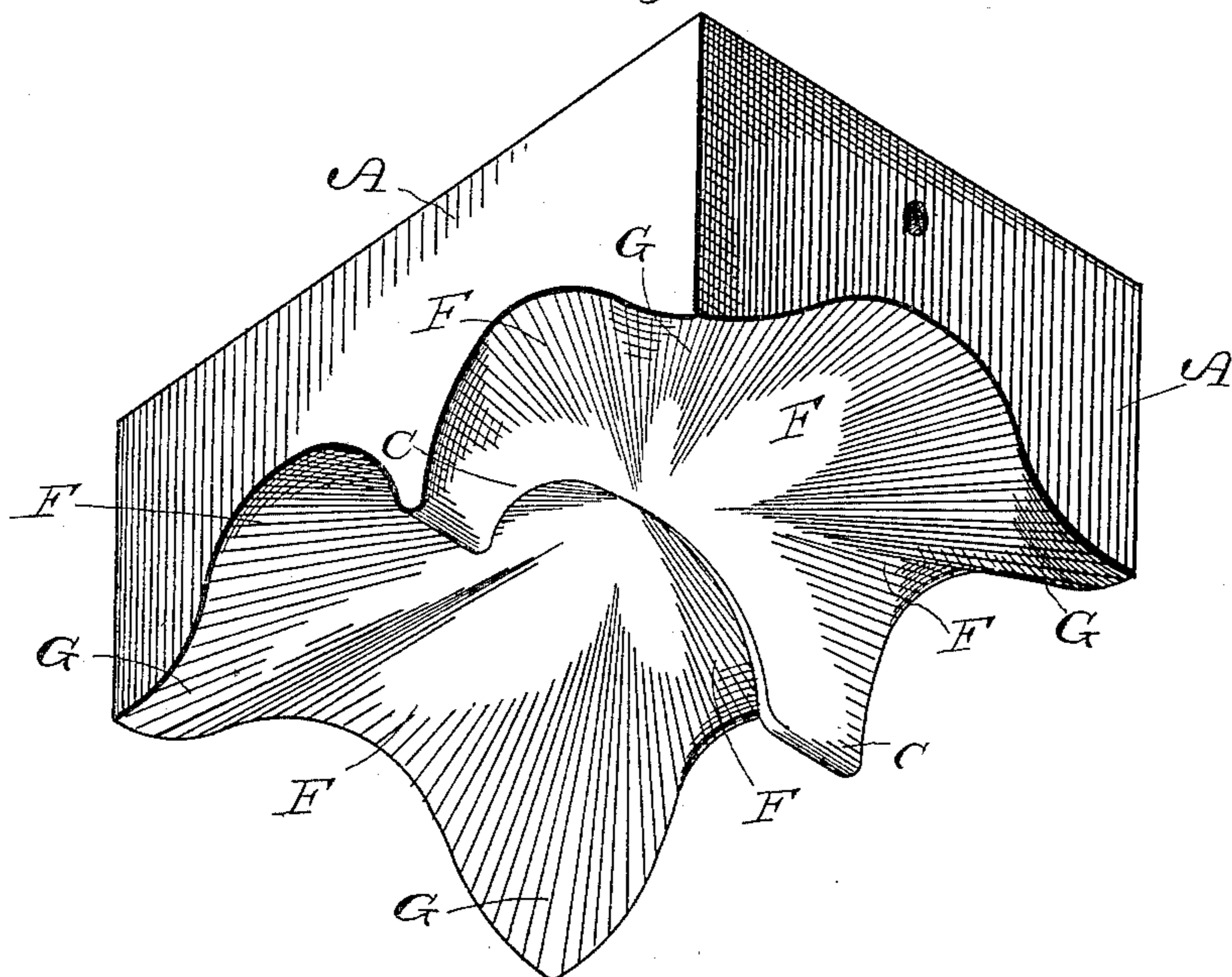
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Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

ALVA J. HISCOTT, OF BRIDGEPORT, CONNECTICUT.

DIES FOR MAKING SEAMLESS DRESS-SHIELDS.

SPECIFICATION forming part of Letters Patent No. 339,294, dated April 6, 1886.

Application filed December 3, 1885. Serial No. 184,647. (No model.)

To all whom it may concern:

Be it known that I, ALVA J. HISCOTT, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Dies for Making Seamless Dress-Shields; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain novel and useful improvements in dies for forming seamless dress-shields, and has for its object to do away with the crescent-shaped dies between which the fabric is shaped, and, furthermore, to produce a most economical shield, which shall also be superior in finish and durability to any shield at present in the market; and with these ends in view my invention consists in a pair of heated dies, which latter shall be so constructed as to uniformly stretch the fabric and to take up the cockles or wrinkles incident to the stretching without undue strain on the fabric.

In order that those skilled in the art to which my invention appertains may fully understand its construction and operation, I will proceed to describe the same in detail, referring by letter to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side-elevation of the molds; Fig. 2, a central vertical cross-section of the molds, and Fig. 3 a perspective of the upper and lower molds separated.

Similar letters denote like parts in the several figures of the drawings.

A is the upper mold, and B the lower.

C is a shaper of crescent form, which depends from the mold, and D is a corresponding depression (see Fig. 3) in the lower mold, to which the contour of said shaper is adapted.

E are radial corrugations in the lower mold, adapted to take up the cockles or wrinkles in the fabric when the latter has been stretched, as will be hereinafter set forth.

F are corresponding depressions in the upper mold, to which said corrugations are closely adapted, and G H are the similar counter-radial corrugations and depressions in the upper and lower molds, respectively.

Both molds each have a steam or hot-air chest, I, (see Fig. 2,) supplied by pipes J.

In carrying out my improved method I proceed as follows: The fabric (which is preferably rubber faced with stockinet) is placed on the lower mold and the upper mold brought down. As the shaper C forces the fabric within the depression D it will of course stretch, and since the corrugations E G and depressions F H tightly grasp said fabric, the radial wrinkles in the latter incident to the stretching will be taken up by said corrugations and depressions, thereby preventing any creasing. Steam or hot air is now introduced within the molds, and the rubber thereby vulcanized in its stretched shape.

Prior to my invention dress-shields have been formed by forcing the fabric within a female die by means of a male former made from sheet iron; but, owing to the fact that the external curvature of the edges of the female die determined the degree of stretching, the fabric was generally distorted, and in many instances the stockinet was torn. Furthermore, in order to get rid of the wrinkles which form during the stretching, it was necessary that the fabric should draw tightly against the said edges, and that the male former should force the fabric to a considerable distance within the female die, and this of course contributed greatly to the irregular stretching. Also, in order to retain the fabric in its stretched shape, it has been necessary hitherto to remove the fabric from the former and fasten it on tin shapers and then subject it to the action of heat.

By my improved dies the vulcanization is simultaneous with the stretching, which of itself is a great gain of time.

The principle which underlies my improvement is that the degree of stretching the fabric so that it will, when finished, assume the concave shape increases uniformly from the center. Therefore the cockles or wrinkles will be radial, and accordingly the radial corrugations and depressions will act as "take-ups" for the said cockles, and the fabric can be firmly held throughout its area and uniformly stretched without any liability of creasing.

I prefer to keep the molds constantly heated so as to be ready for instant use when it be-

comes necessary to make any considerable number of shields.

I am enabled to manufacture dress-shields having different styles or degrees of concave 5 by using different molds, and it is in some instances more convenient and advantageous to have more or less corrugations and depressions, and I do not therefore wish to be confined to any particular number or formation 10 of said corrugations and depressions. Also, I am enabled to use any suitable material in the manufacture of dress-shields other than rubber faced with stockinet, and this is a great advantage, since many fabrics which are 15 suitable for this manufacture cannot be utilized in the method hitherto employed, owing to the fact that said fabrics will not withstand the strain caused by forcing and stretching them between dies.

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

As a new article of manufacture, a pair of dies for manufacturing seamless dress-shields, the male die having a crescent-formed shaper 25 and the female die a corresponding depression, whereby the concavity is given to the upper edge of the shield, both dies being heated and having corresponding male and female corrugations and depressions which 30 radiate from a common vertical center, whereby the cockles or wrinkles incident to the operation of the crescent shaper are taken up, and creasing thereby prevented, substantially as set forth.

35 In testimony whereof I affix my signature in presence of two witnesses.

ALVA J. HISCOTT.

Witnesses:

PHILO H. PRINDLE,
S. S. WILLIAMSON.