

(No Model.)

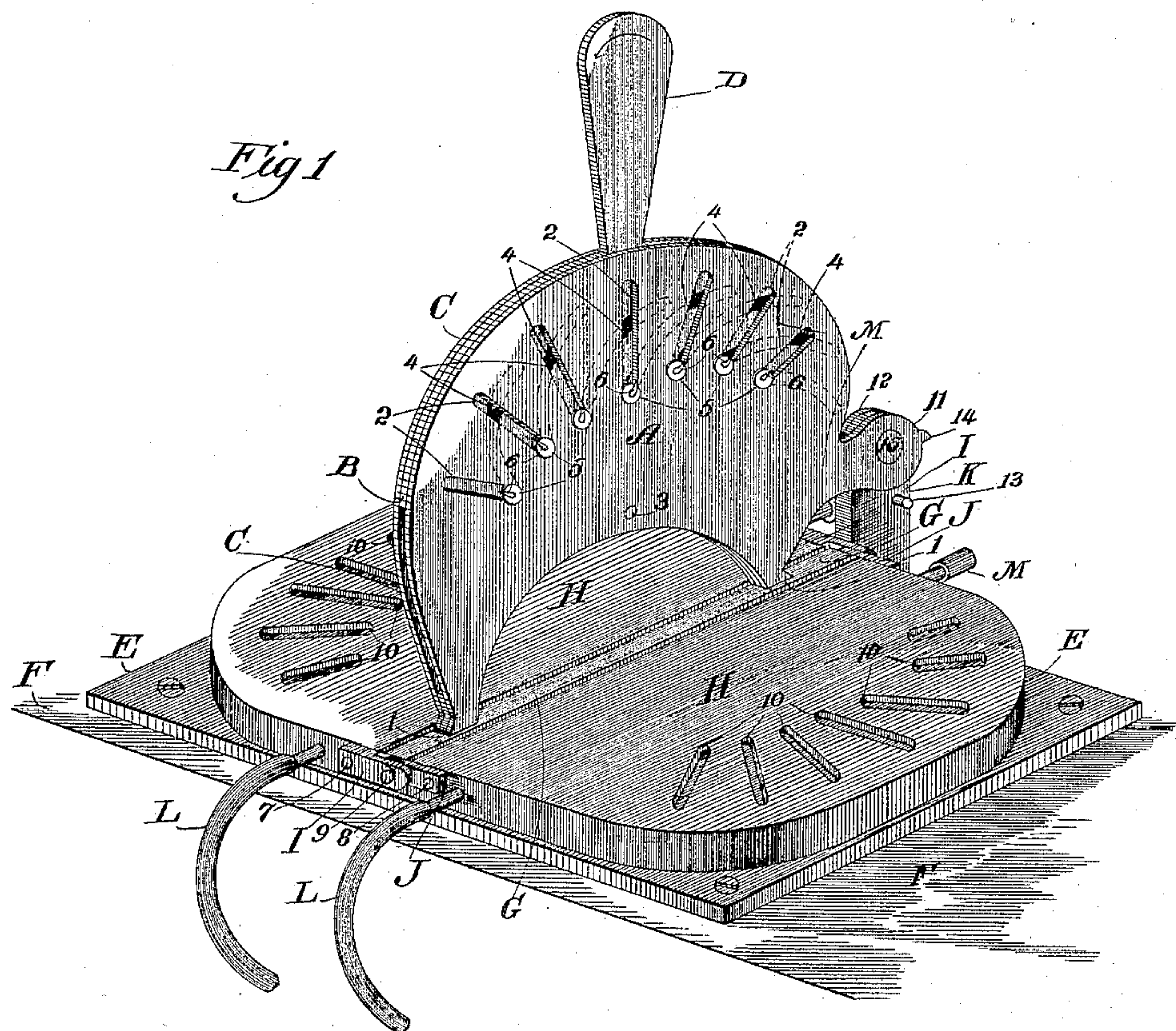
2 Sheets—Sheet 1.

F. W. SMITH, Jr.

APPARATUS FOR MANUFACTURING SEAMLESS DRESS SHIELDS.

No. 399,637.

Patented Mar. 12, 1889.



Witnesses.

A. J. Halper

E. S. Sumner.

Inventor.

Friend W. Smith Jr.

By

S. J. Williamson

city.

(No Model.)

2 Sheets—Sheet 2.

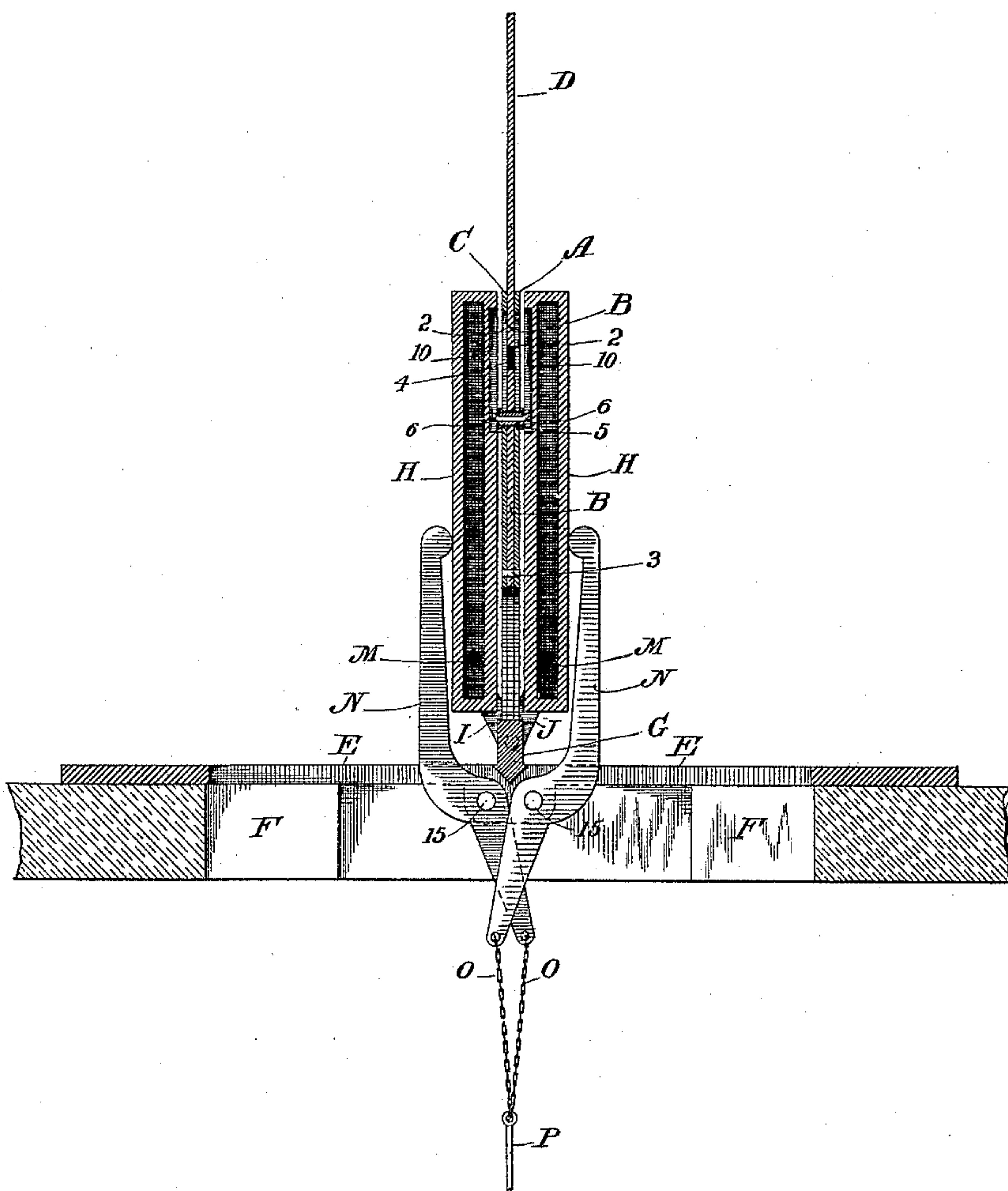
F. W. SMITH, Jr.

APPARATUS FOR MANUFACTURING SEAMLESS DRESS SHIELDS.

No. 399,637.

Patented Mar. 12, 1889.

Fig 2



Witnesses.
A. T. Holt
E. S. Sumner

Inventor.
Friend W. Smith Jr.
By S. Williamson

attg.

UNITED STATES PATENT OFFICE.

FRIEND W. SMITH, JR., OF BRIDGEPORT, CONNECTICUT.

APPARATUS FOR MANUFACTURING SEAMLESS DRESS-SHIELDS.

SPECIFICATION forming part of Letters Patent No. 399,637, dated March 12, 1889.

Application filed October 15, 1888. Serial No. 288,074. (No model.)

To all whom it may concern:

Be it known that I, FRIEND W. SMITH, JR., 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 Apparatus for Manufacturing 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 has reference to certain new and useful improvements in machines for manufacturing seamless dress-shields, and has for its object to improve on the construction shown and described in my pending application for Letters Patent filed in the United States Patent Office on the 10th of January, 1888, under Serial No. 260,278.

The chief aim of my present invention is to render the operation of pinning the fabric perfectly automatic and to vulcanize the stretched shield in a minimum space of time without removing the form or shield from the apparatus.

In the accompanying drawings, Figure 1 is a perspective illustrating my improvement in connection with the former shown in the aforesaid application, and Fig. 2 a central vertical longitudinal section.

Similar letters and figures denote like parts in both the figures of the drawings.

A is the former, having its lower edge crescent-shaped and terminating in lateral projecting points 1.

2 are the slots in said form which determine the line of stretching.

B is the stretching-plate, pivoted at 3 to the former and having cam-slots 4, which extend athwart said guide-slots.

5 are the stretching-pins, which extend through the guide and cam slots and are provided with grasping-points 6.

C is a plate precisely like the former-plate A, pivoted also at 3, the object of this plate C being to present a perfectly-smooth surface to facilitate vulcanization, as will be presently set forth.

D is a handle projecting upward from the stretching-plate and adapted to be swung in the direction indicated by the arrow to di-

verge the stretching-pins 5, as set forth in the aforesaid pending application.

E is a bed-plate secured upon any suitable table, F, and G is a central rib extending upward from said plate.

H are hollow leaves, and I J are lugs which are pivoted at 7 8 to the leaves, these lugs being pivoted at 9 to each other and to the rib G to constitute a double hinge for the purpose of facilitating the folding of said leaves without any danger of cramping. These leaves have scoop-slots 10 in their faces, so extended that when the leaves are folded said slots will register with the guide-slots 2 in the plates A C.

K is a post projecting upward from the table F, and to this post at 16 are pivoted ears 11 12, which extend laterally from the plates A C. A pin, 13, projecting from said post forms a stop, against which a lug, 14, on the ear 11 is adapted to strike, for the purpose of limiting the movement of said plates as they are swung laterally away from the rib G.

L are steam-inlet pipes leading into the hollow leaves, and M are the corresponding outlet-pipes.

N are levers pivoted at 15 to the bed-plate, and O is a chain, the ends whereof are secured to the inner extremities of said levers. P is a pitman which depends from this chain, and may be connected with any suitable treadle mechanism, (not shown,) whereby the leaves may be elevated or allowed to fall by gravity to normal position in a horizontal plane. These levers extend immediately beneath the leaves H, so that the latter are swung on their hinges by the operation of said levers, as will be readily understood. I do not wish to be confined to the use of these levers as a means of operating the leaves, since the latter may be operated by hand or by any suitable contrivances, and I have merely shown said levers in order to afford some illustration of the manner in which my improvement is intended to be used.

The operation of my improvement in connection with the device shown in the aforesaid pending application is as follows: Seamless dress-shields are generally made from the fabric known as "stockinet-faced rubber," and a suitable blank of this fabric having previously been laid flat upon the outspread

leaves the stretching device is swung into the position shown at Fig. 1, so that the grasping-points 1 rest immediately upon said fabric. The leaves are now folded to the position 5 shown at Fig. 2, thus carrying the fabric against the points 6. The handle D is now thrown in the direction indicated by the arrow, thus stretching the fabric into the desired shape. During the operation of stretching 10 the leaves offer no obstruction to the movement of the pins 5 and points 6, since the slots 10 register with the slots 2. The stretched shield is therefore closely embraced by the hot leaves, the result being that a 15 quick vulcanization takes place. In fact, the stretching and complete vulcanization of the fabric consumes considerable less than one minute of time. After vulcanization the leaves are allowed to drop back to normal position and the completed shield is stripped 20 from the points 6 by simply swinging the former-plates back on their pivotal point 16 and throwing the handle D in the reverse direction of the arrow.

25 The automatic pinning on of the fabric has heretofore never been accomplished, and this feature, together with the rapid vulcanization, greatly facilitates the manufacture of seamless dress-shields and cheapens the cost of 30 production.

Having thus described my invention, what I claim as new and useful is—

35 1. The combination, with the former having slots which extend in the direction of the line of stretching and provided with stretching-pins within said slots, of the bed-plate upon which said former is supported, a pair of leaves provided with gouge-slots and hinged to said plate on opposite sides of said 40 former, and means for folding said leaves closely to said former, substantially as set forth.

2. The combination of the form to which the shield is stretched, having stretching devices adapted to be operated through guide-slots in said form, a bed-plate having a central transverse rib, a pair of hollow leaves having slots corresponding with the aforesaid slots, said leaves hinged to said rib at the ends thereof and provided with steam inlet 50 and outlet pipes, and means for folding said leaves closely to said form, substantially as set forth.

3. The combination of the bed-plate E, having transverse rib G, and mounted upon any 55 suitable table, F, the post K, projecting upward from said table and having stop-pin 13, the plates A C, having ears 11 12 extending laterally therefrom and pivoted to the post K, and the lug 14, extending from the plate A, 60 substantially as set forth.

4. The combination, with the plates A C, having slots 2 extending in the direction of the line of stretching, and the plate B, having cam-slots 4 extending athwart the slots 2, said 65 plates having a common pivotal point, stretching devices projecting through said slots 2 4, the bed-plate which supports said former and to which the latter is pivoted, and the leaves H, hinged to said plate and having slots 10, 70 which register with the slots 2 when said leaves are folded against the plates A C, whereby the fabric is automatically attached to the stretching devices and the movements of the latter rendered perfectly free within 75 said leaves, substantially as shown, and for the purpose set forth.

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

FRIEND W. SMITH, JR.

Witnesses:

S. S. WILLIAMSON,
E. S. SUMNER.