

(No Model.)

C. E. KEATOR.

METHOD OF FINISHING HAT BODIES.

No. 411,663.

Patented Sept. 24, 1889.

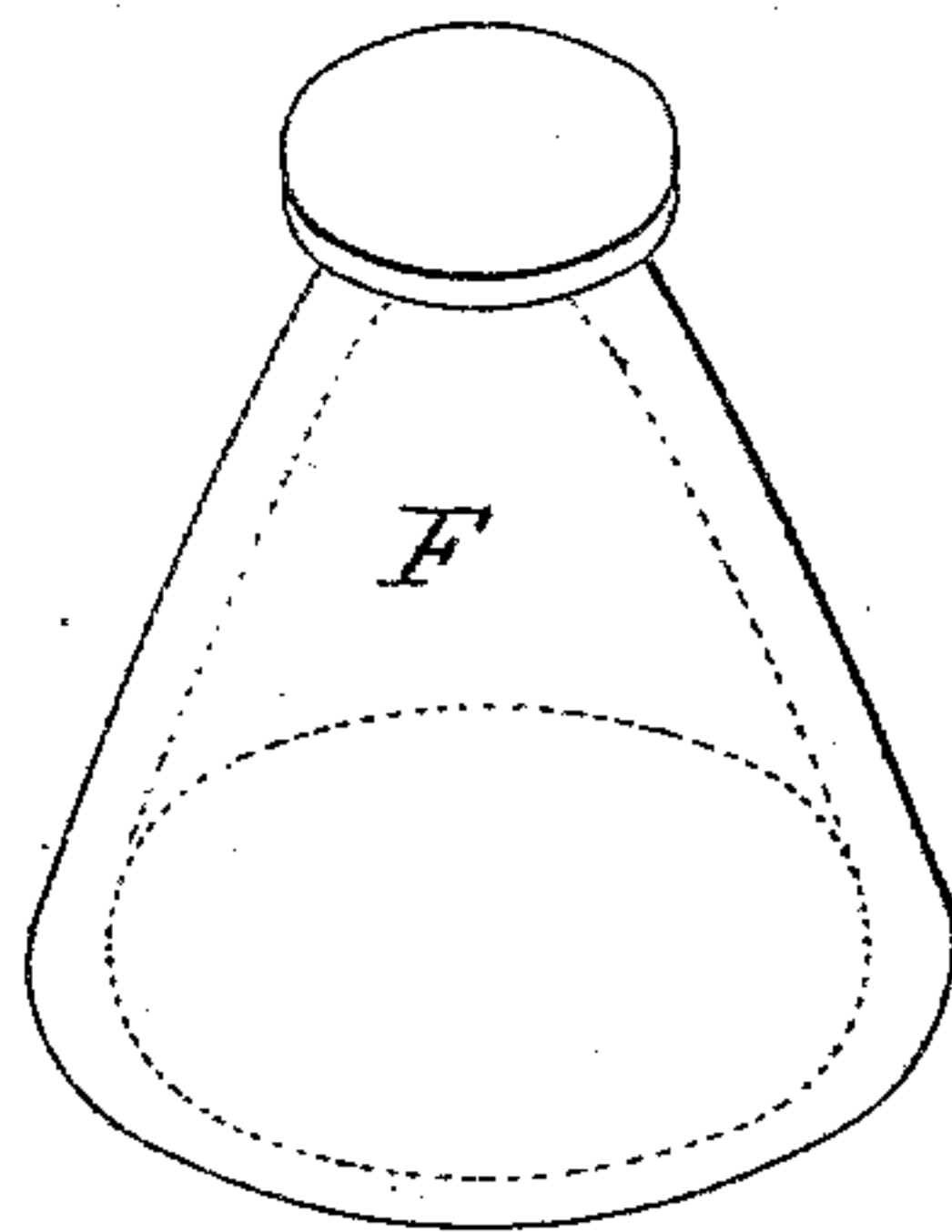
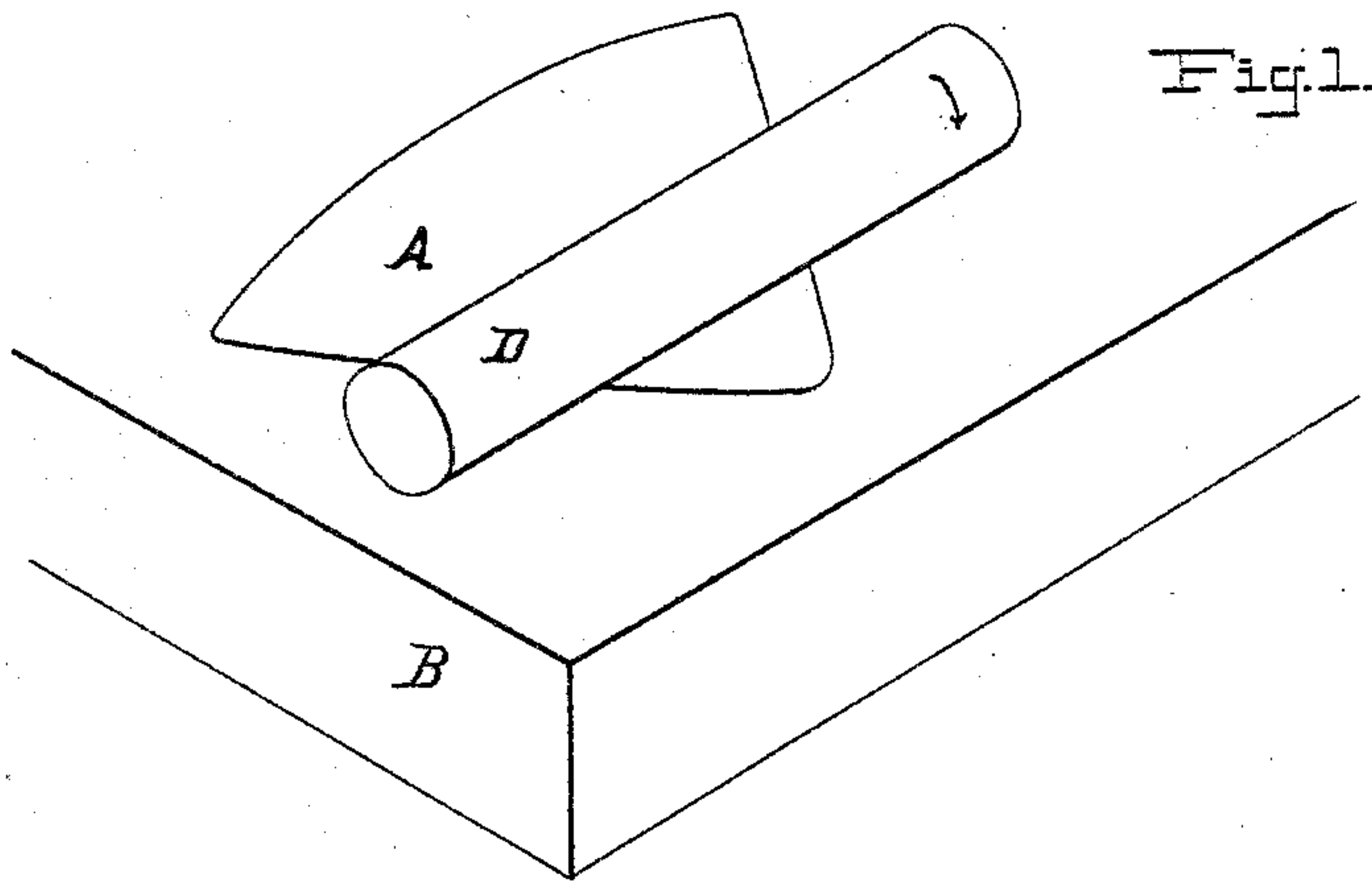
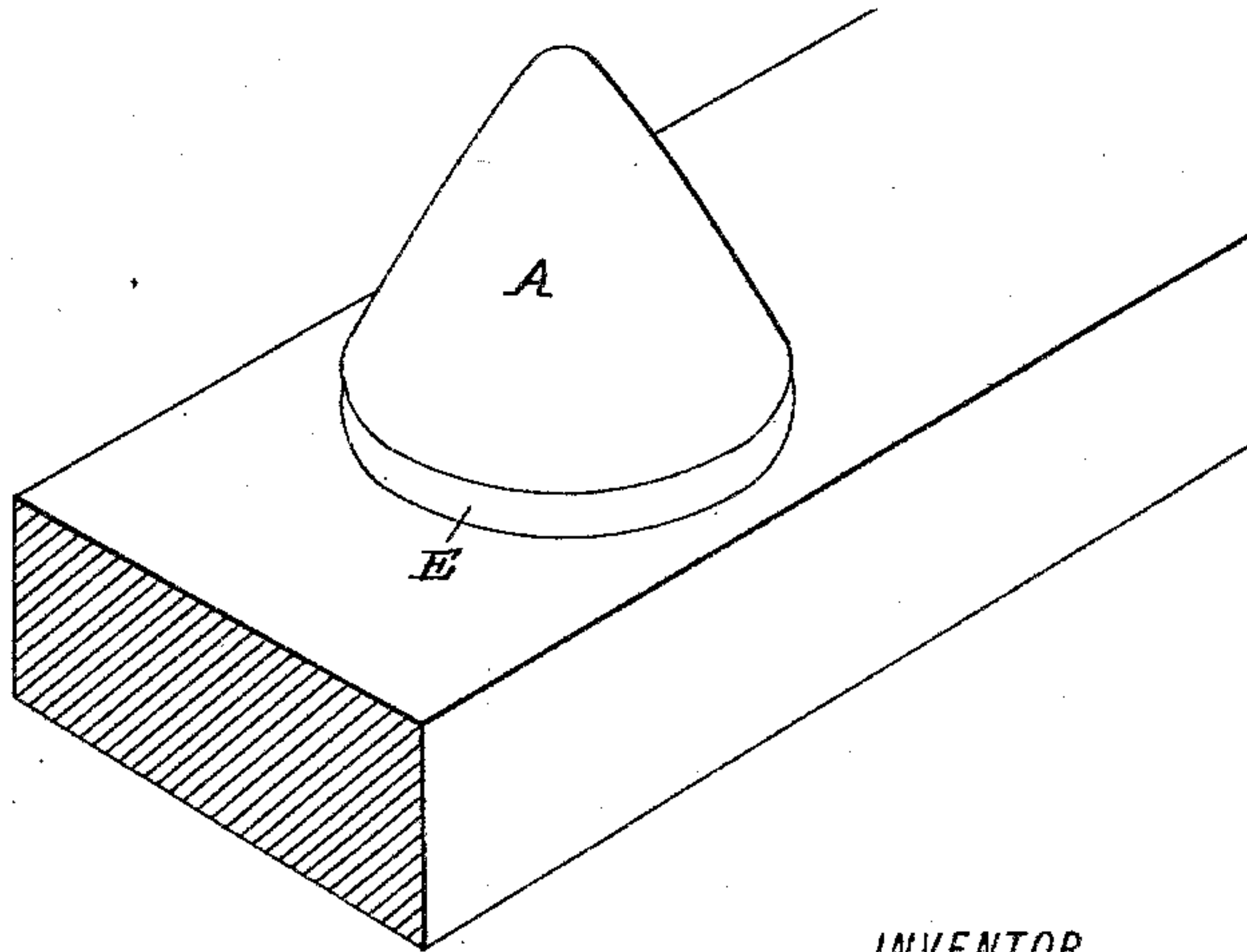
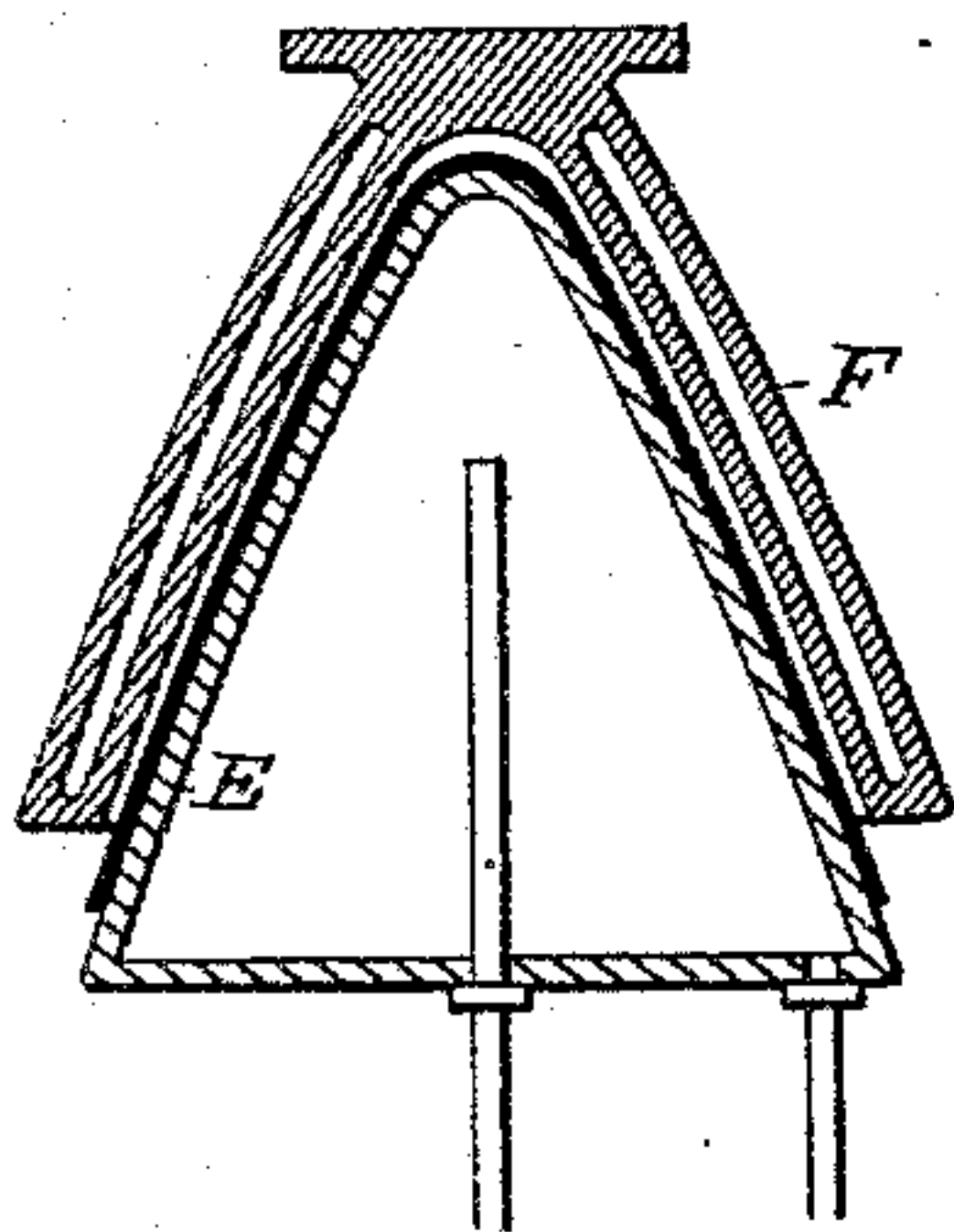


Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES E. KEATOR, OF BROOKLYN, NEW YORK.

## METHOD OF FINISHING HAT-BODIES.

SPECIFICATION forming part of Letters Patent No. 411,663, dated September 24, 1889.

Application filed April 8, 1889. Serial No. 306,308. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. KEATOR, a citizen of the United States, and a resident of Brooklyn, Kings county, New York, have invented an Improved Method of Finishing Hat-Bodies, of which the following is a specification.

My invention relates to that step in the manufacture of felt hats in which the finishing of the hat-body is completed after it comes from the battery and before it goes to the hat-shaping machine.

In the accompanying drawings, Figure 1 is a view illustrating the ordinary method of finishing a hat-body by hand. Fig. 2 is a perspective view illustrating my method, and Fig. 3 is a sectional view in further illustration of my invention.

In the making of hats as ordinarily carried out the final step in the treatment of the hat-bodies before shaping is known as the "pinning-out" process, and as carried out by hand consists in subjecting the collapsed or folded hat-body A upon a bench or table B, Fig. 1, to the pressing or rolling action of a rolling-pin D. This pin is rolled over the hat-body under considerable pressure, preferably from the wide end of the hat-body to the point, with the result of pressing out the remaining water and of smoothing the hat-body and completing the felting, so that it is then ready to go to the shaping-machine after it has been left to dry sufficiently on drying-shelves. Various machines have been devised or proposed for the treatment of hat-bodies at this stage, but usually they have operated upon the hat-bodies in the folded or collapsed form, as in the hand process above described. These processes, however, have been attended with the very serious drawback that croze marks or creases are left in the hat-body from point to margin on the lines on which the hat is folded, and in the subsequent operation these marks give considerable trouble, insomuch that in many cases, even in the hands of skilled workmen, it is impossible to get rid of the marks, and the hat-bodies or partially-completed hats have to be thrown away.

It has been proposed to "pin out" hat-bodies by subjecting them to pressure be-

tween rotating cones; but this does not give them a uniform pressure, and in such cases the tip or apex of the hat-body has either been left untouched or has been operated on by additional small rollers, which would form lines or marks between their paths on the hat-body.

It is the object of the present invention to get rid of these difficulties, and this I do by subjecting the hat-bodies to heat and a uniform pressure practically all over their surfaces while they are held in their natural conical shape unfolded, so as to be free from creases.

In carrying out my invention I prefer to make use of the machine which forms the subject of an application for a patent filed by me April 8, 1889, Serial No. 306,307. For the purpose of explaining my method, however, it will suffice to refer to the devices shown in Figs. 2 and 3, and which may be used in carrying this improvement into effect.

I provide a pair of conical formers or male and female dies E and F, between which the hat-body A is placed. These formers or dies are of such a shape that the ordinary conical hat-body as it comes from the battery will fit between them sufficiently to be practically free from folds or creases. I prefer to make both dies hollow and steam-heated, as shown, although it will suffice if one be heated.

To carry out my invention, the hat-body, as it comes from the battery and containing more or less moisture, is placed upon the male die or within the female die, and the two dies are then pressed together, so that the hat-body is then subjected to heat and a uniform pressure all over, and so completely dried and smoothed while it is in its normal conical shape, so that it is free from creases or folds. The dies may be separated and brought together again as often as may be found desirable during this treatment of the hat-body; but in most cases I prefer to give a short reciprocating motion to one of the dies in order to give a pounding or rubbing action upon the hat-body as it is thus held in its normal conical shape free from creases or folds. This will more thoroughly complete the felting as well as the smoothing and drying of the hat-body. The hat-body



thus completed ready for the shaping operation will be found to be entirely free from creases or folds, and can therefore be handled in subsequent operations by comparatively  
5 unskilled workmen.

I claim as my invention—

1. The mode herein described of finishing a hat-body to make it ready for the shaping operation, said mode consisting in subjecting  
10 the said body to heat and a uniform pressure all over while held in its conical form and free from folds or creases, substantially as set forth.

2. The mode herein described of finishing

hat-bodies to make them ready for the shaping operation, said mode consisting in subjecting the hat-bodies to heat and a pounding action uniformly over their whole surfaces while held in their conical form free from folds or creases, substantially as set  
15 20 forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. KEATOR.

Witnesses:

S. C. CONNOR,  
HUBERT HOWSON.