

W. E. Lockwood.
Collar Machine.

No. 44,640.

Patented Oct. 11, 1864.

FIG. 1.

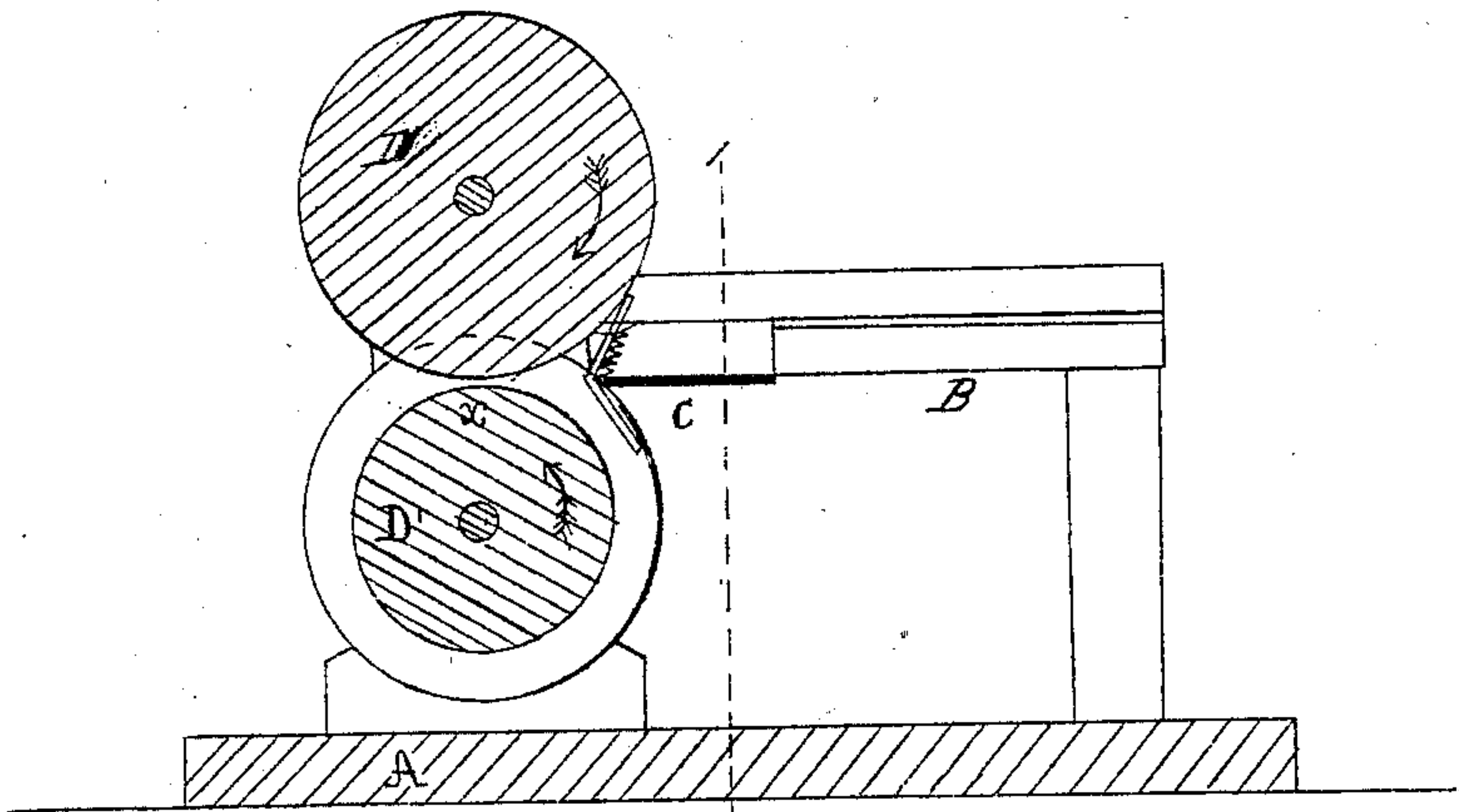


FIG. 2.

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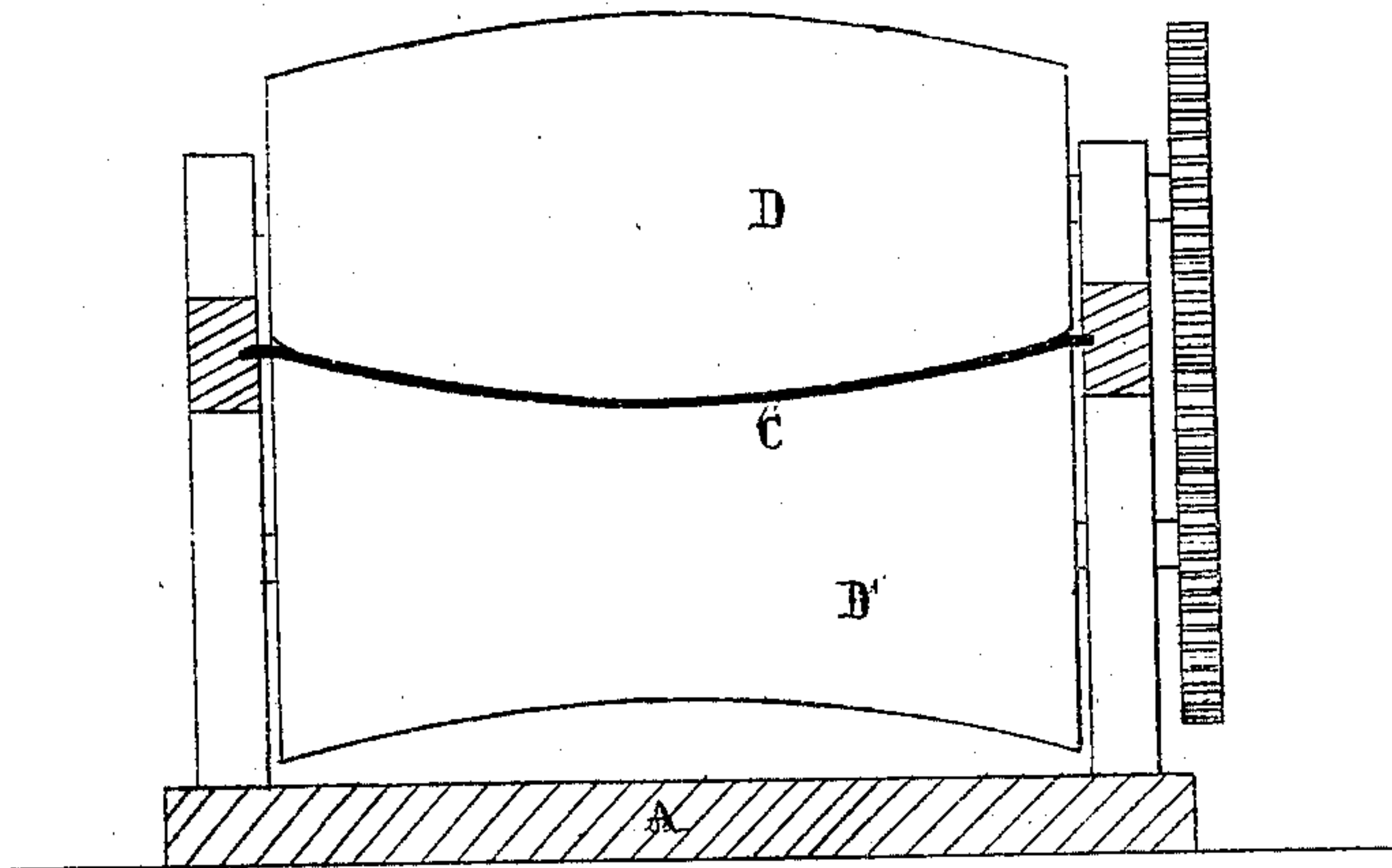


FIG. 4.

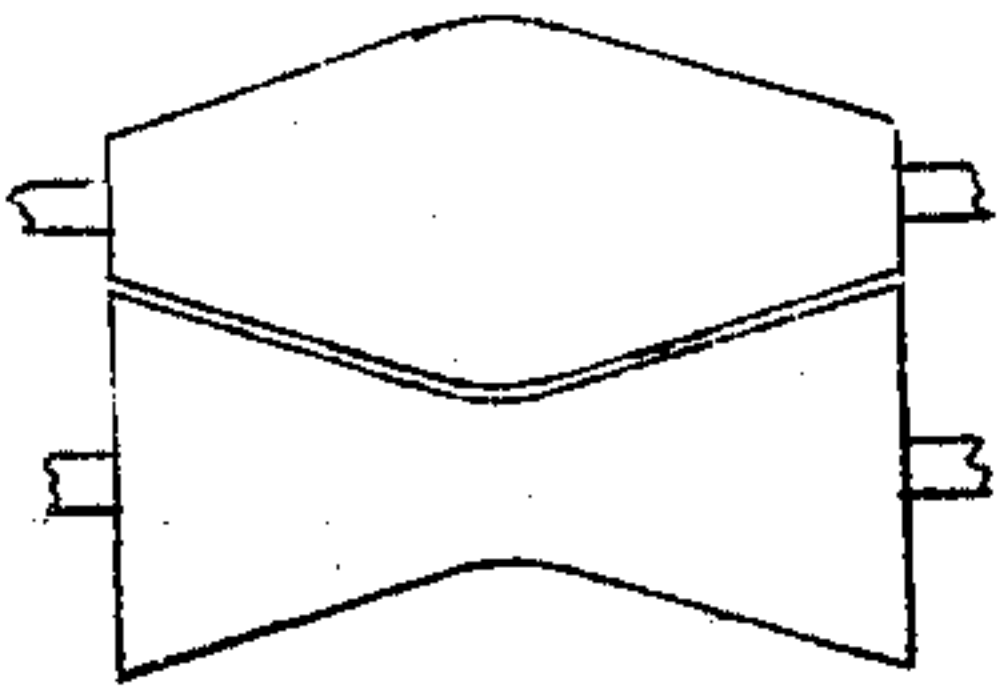


FIG. 3.

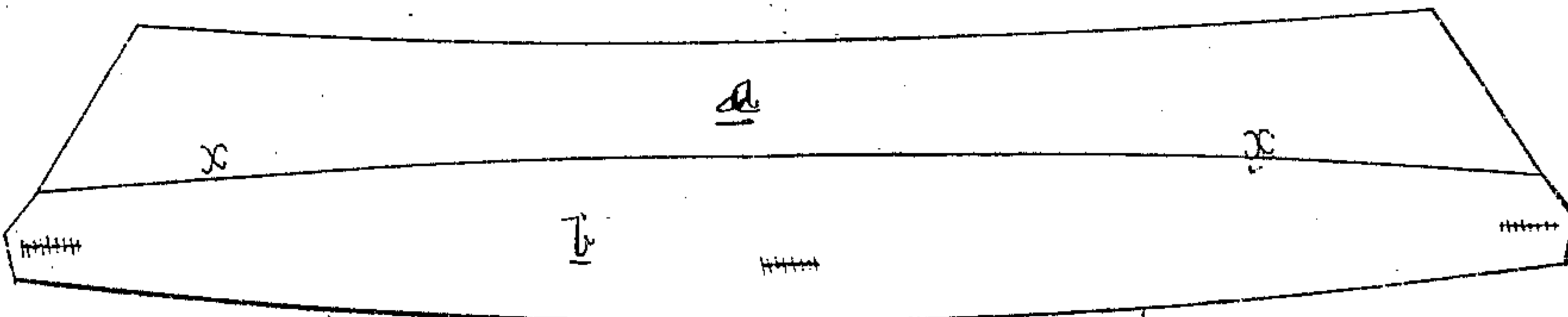
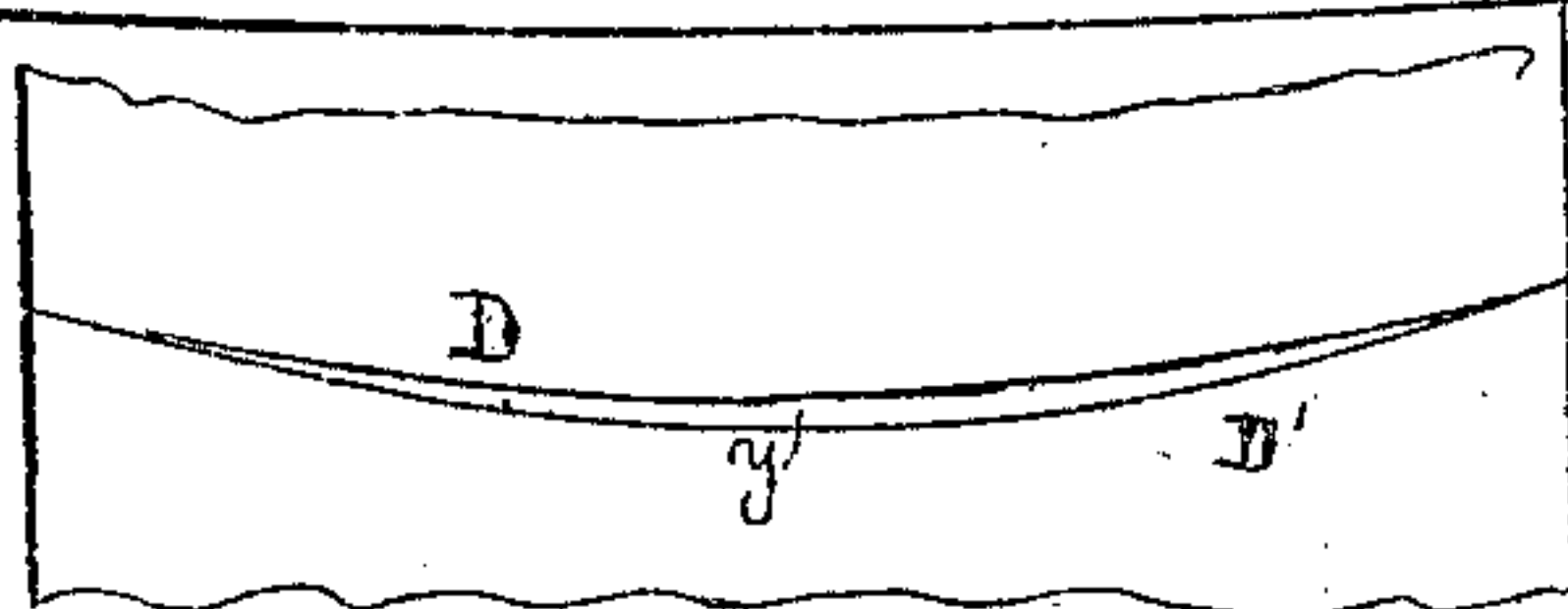


FIG. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM E. LOCKWOOD, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN A PARATUS FOR BENDING AND FOLDING PAPER COLLARS.

Specification forming part of Letters Patent No. 44,640, dated October 11, 1861.

To all whom it may concern:

Be it known that I, WILLIAM E. LOCKWOOD, of Philadelphia, Pennsylvania, have invented an Improvement in Apparatus for Bending and Folding Shirt-Collars; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in the machine for bending and folding paper collars, for which Letters Patent were granted to me as assignee of John F. Schuyler on the 24th day of February, 1863; and my improvement consists in the use, substantially as described hereinafter, of two rollers—one having a concave and the other a convex surface—in combination with a reciprocating plate, so that the line in which the fold is made shall be curved instead of straight, a collar thus folded having a tendency to bend of itself and thus more readily conform to the shape of the wearer's neck without that puckering which is apt to take place in collars folded in a straight line.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a sectional view of the front end of the said patented machine with my improvements; Fig. 2, a transverse sectional elevation on the line 1 2, Fig. 1; Fig. 3, a view of a collar prior to its being bent; Fig. 4, a modified view of the rollers, and Fig. 5 a diagram illustrating part of my improvements.

In the manufacture of ordinary linen collars, of the turn-down or "Byron" class, it has been usual for some years past to make them of two pieces, *a* and *b*, Fig. 3, stitched together, the line on which this junction of the two pieces is made being curved, as shown at *x x*, and the hem presenting a curved ridge, which serves to guide the dresser of the collar who turns the portion *a* over the portion *b*, the bend being made on the line of the ridge. Owing to this arrangement, the collar, when folded and ironed, has a tendency to bend of itself and to approximate in form to that which it has to assume on being applied to the wearer's neck.

In the above-mentioned patented machine the paper blanks were submitted to the action of steam, which reduced them to such a moist and pliable condition that they could be

readily bent and folded without breaking and crumpling the paper. The blanks were then pushed toward a pair of rolls by means of a reciprocating serrated plate, which struck each blank at the part where the collar had to be bent and forced it between the converging surfaces of the rolls, the line of the bend being straight as the rollers and the blade in the said machine were straight; hence the folded collars were flat and had to be subjected to a molding process, in order to impart to them a shape approximating to that which they have subsequently to assume on being applied to the wearer's neck, a shape which in the old-fashioned linen collars had been previously acquired by making the bend in a curved line.

In the drawings, A represents the base-plate of my improved apparatus; B, part of the side frames, and C the serrated plate, which fits in guiding-slots in the frame and to which a horizontal reciprocating motion is imparted, as in the aforesaid patented machine.

D and D' are two rollers turning in the frame and so geared together as to revolve in the direction pointed out by the arrows. The surface of the upper roller, D, is rounded and that of the lower roller concave, the concavity of one roller conforming to the convexity of the other.

The paper blank to be converted into a folded collar is caused to fall with its lower edge on a suitable stop or ledge, as described in my aforesaid patent, and while in a vertical position is struck by the serrated edge of the reciprocating-plate, which bends the collar and pushes the bent portion of the same between the converging surfaces of the two rollers which complete the fold.

It will be observed that the plate C is bent to conform to the rollers—that is to say, the upper surface is made concave to suit the concavity of the roller D, and the under surface convex to conform with the convexity of the roller D'. Owing to this arrangement the line of the bend in the folded collar must be in a curve corresponding with that of the rollers and blade, and this curve will cause the folded collar to assume the bent form best adapted to that of the wearer's neck. At the same time the puckers, which take place in ordinary collars folded with a straight bend, are obviated.

A result approximating to that described

may be arrived at by making the rollers of the modified form represented in Fig. 4, the serrated plate being made to correspond with the rollers. I, however, prefer the form of rollers represented in Figs. 1 and 2.

It will be observed that the surface of the lower roller, D', is cut away at one point to a limited extent, the portion thus cut away being uppermost when the plate C approaches the limit of its forward movement, so that an opening, y, Fig. 5, is presented between the rollers for receiving the bent edge of the collar. This opening does not extend throughout the length of the rollers, but is such that the collar, as it is seized by the rollers, will be held by the same at the opposite ends, while the middle passes freely into the space between the rollers. By this arrangement the collar more readily conforms to the shape of the rollers, without being puckered.

The rollers instead of revolving continuously

may be so geared together as to stop for an instant while the collar is being thrust in between them.

I claim as my invention and desire to secure by Letters Patent—

1. The use of two rollers, one having a concave and the other a convex surface, in combination with a reciprocating plate, C, of a form corresponding with that of the rollers, substantially as and for the purpose herein set forth.

2. Cutting away the circumference of one or both of the rollers at one point, in the manner and for the purpose described.

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

WILLIAM E. LOCKWOOD.

Witnesses:

CHARLES E. FOSTER,
JOHN WHITE.