

(No Model.)

W. S. MENDENHALL.
ROLL PAPER CUTTER.

No. 488,129.

Patented Dec. 13, 1892.

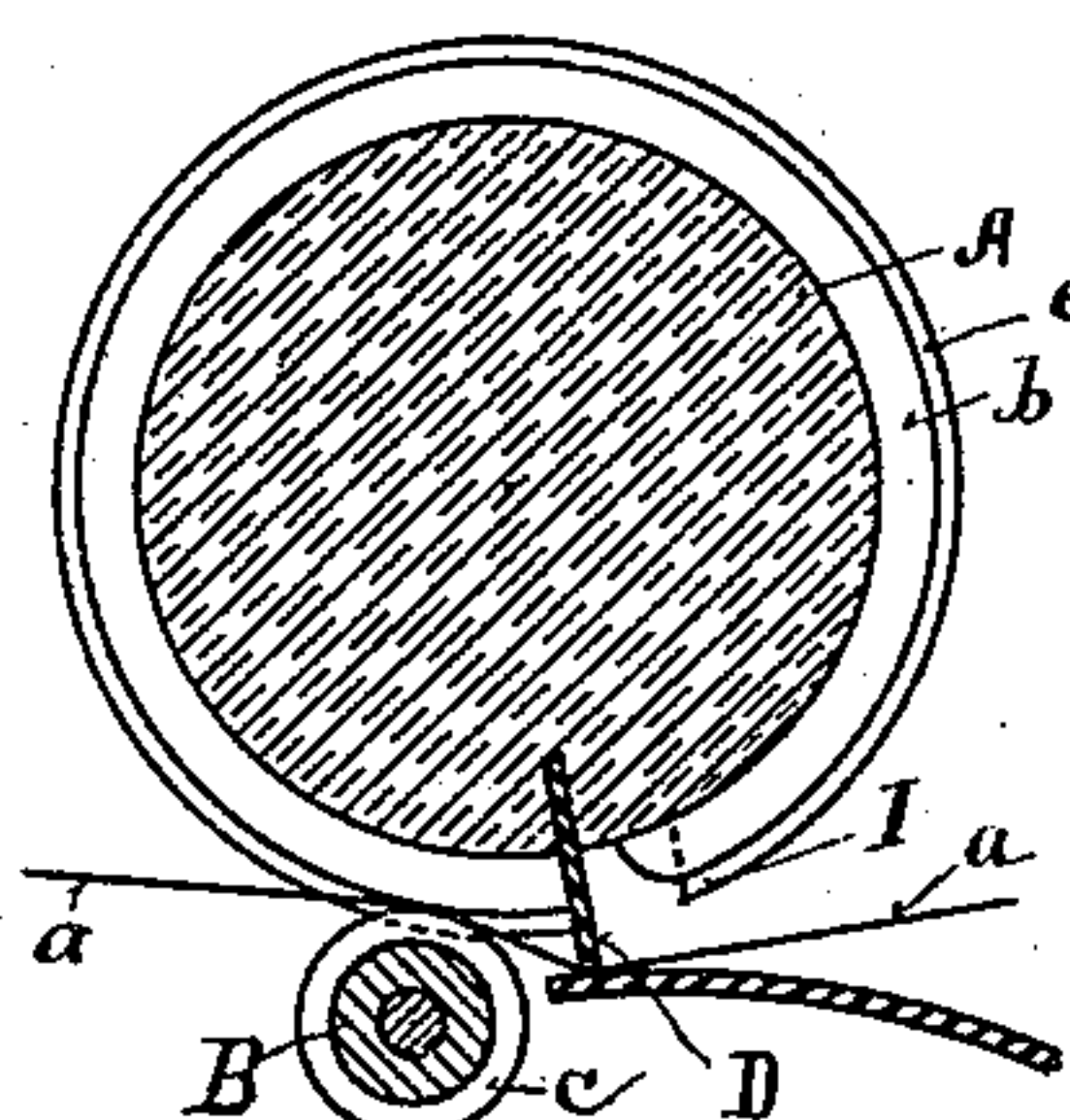
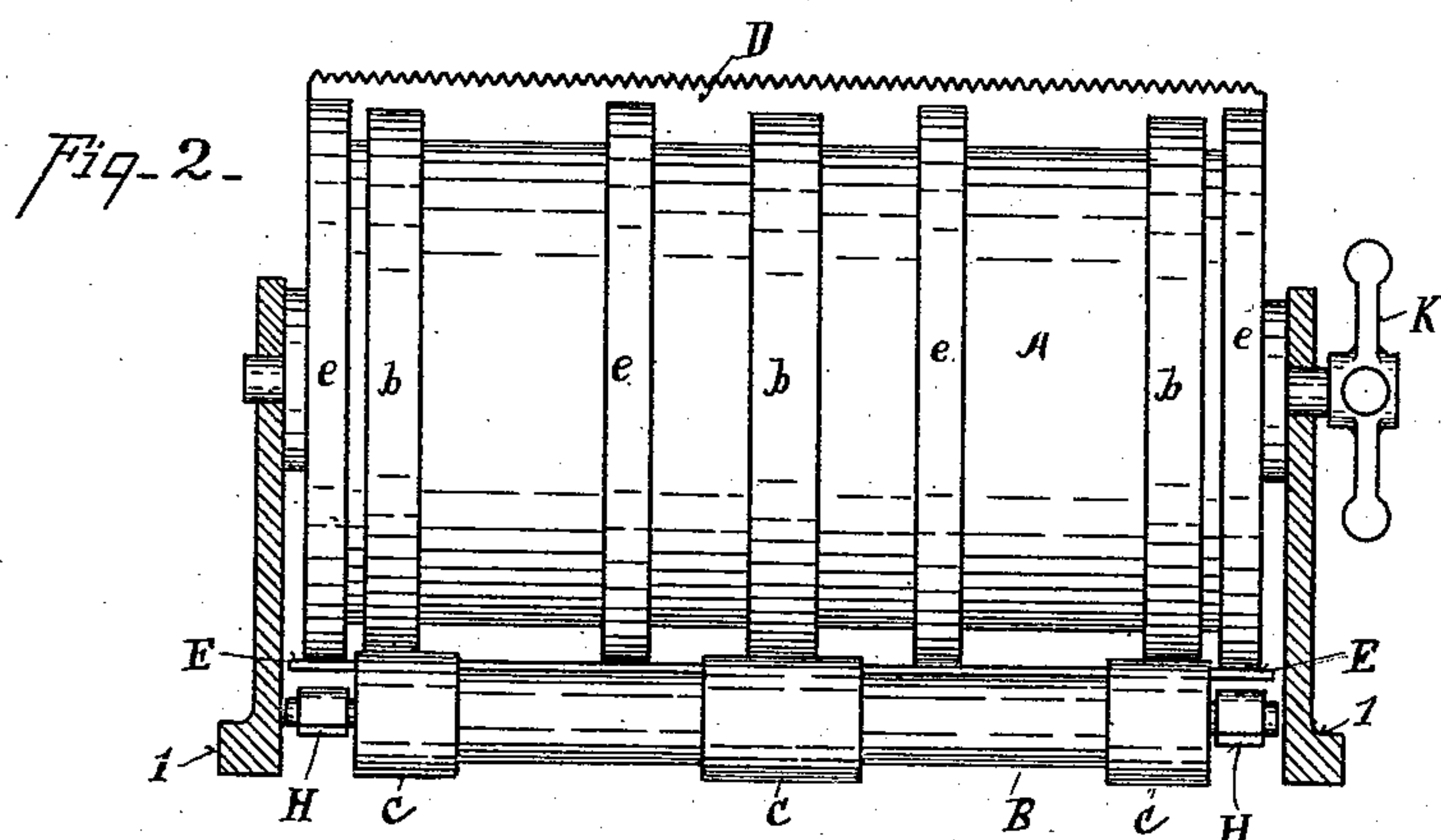
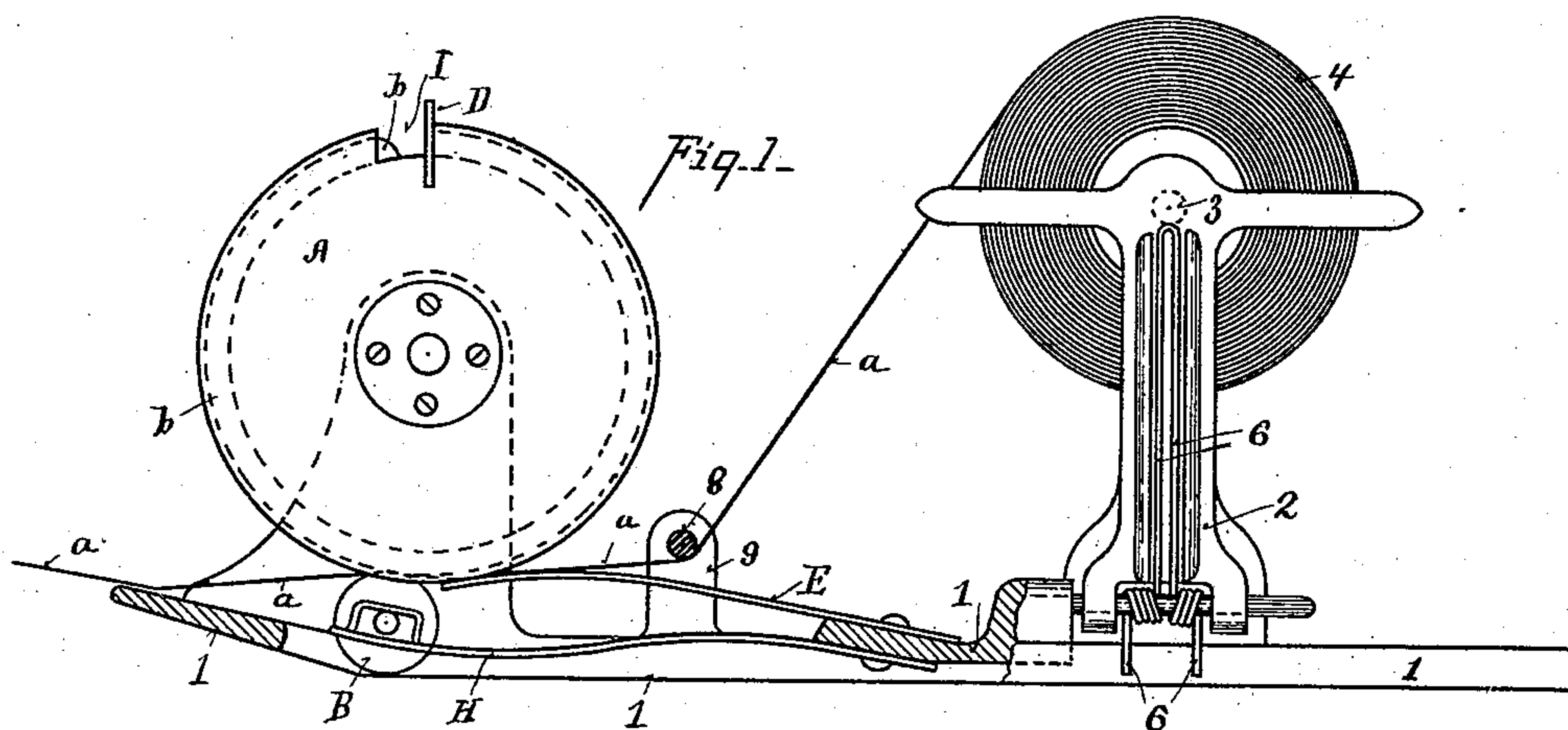


Fig-3 -

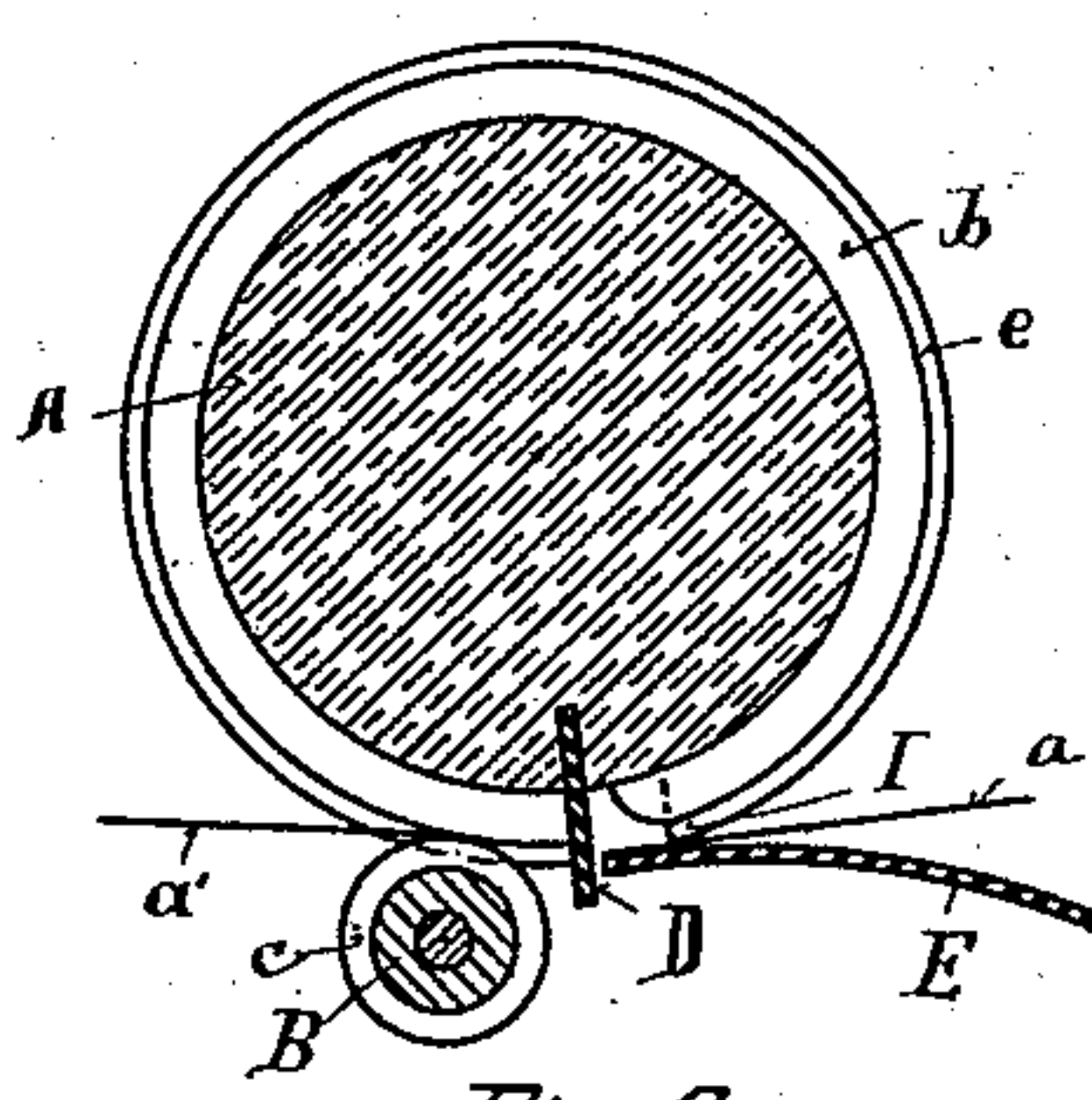


Fig.4.

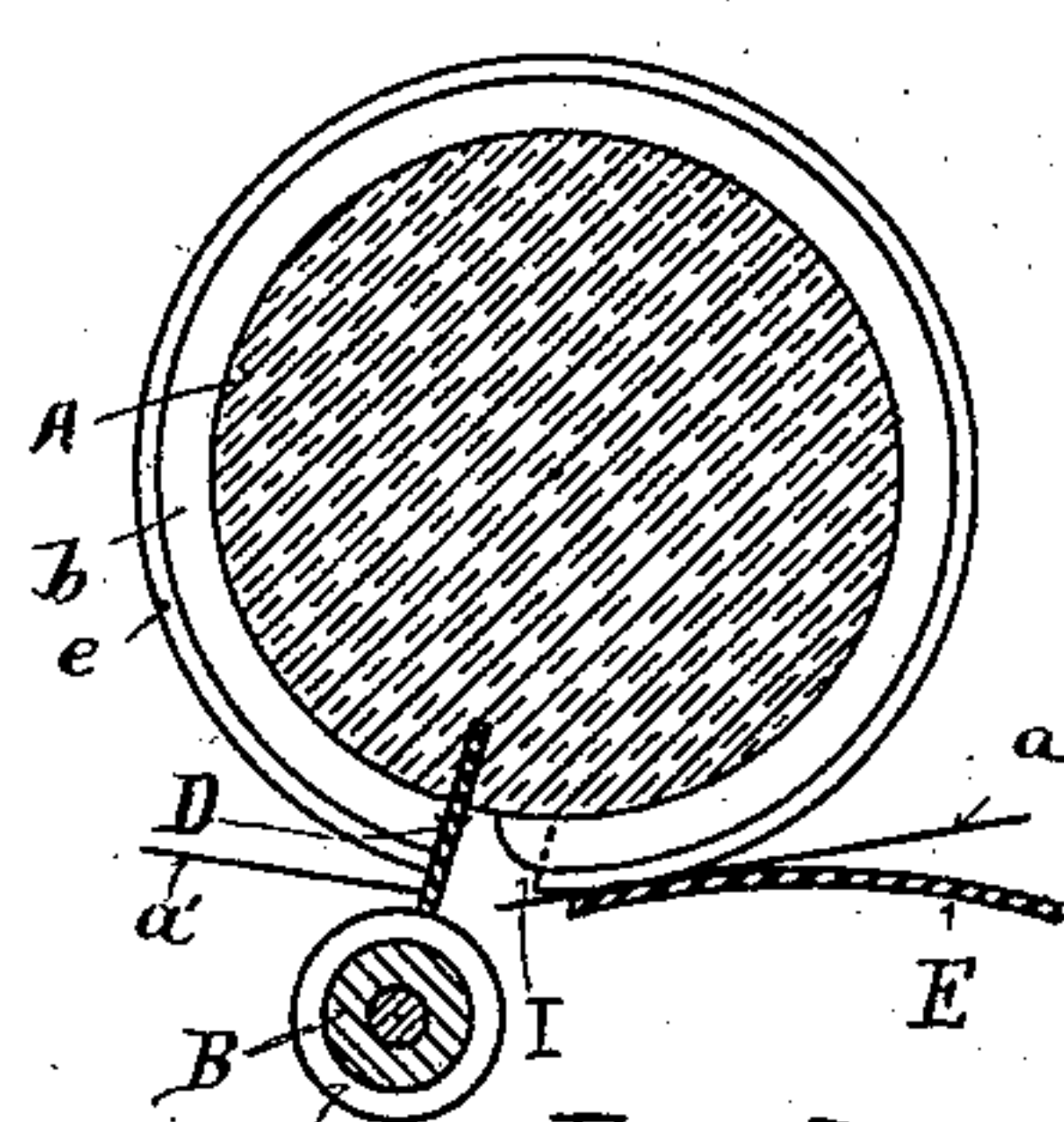


Fig. 5 -

Attest
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UNITED STATES PATENT OFFICE.

WALTER S. MENDENHALL, OF COVINGTON, KENTUCKY, ASSIGNOR TO THE
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ROLL-PAPER CUTTER.

SPECIFICATION forming part of Letters Patent No. 488,129, dated December 13, 1892.

Application filed February 10, 1892. Serial No. 421,025. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. MENDENHALL, a citizen of the United States, residing at Covington, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Roll-Paper Cutters, of which the following is a specification.

The object of my invention is to provide means for feeding and cutting off paper from a roll by revolving the feed and measuring roll, and with suitable means for feeding forward the free end of the paper after the act of cutting, so as to start it in position for measuring.

Another object of my invention is to provide suitable means for measuring or feeding the paper forward to the action of the cutter.

The various features of my invention are fully set forth in the description of the accompanying drawings, making a part of this specification, in which—

Figure 1 is an end elevation of my improvement. Fig. 2 is a front elevation of the same. Figs. 3, 4, and 5 are diagrams illustrating the operation.

1 represents the frame of the machine.

2 represents a hinged post carrying a gudgeon 3 for supporting the paper-roll 4. The opposite post may be stationary or hinged, as desired, and carries a gudgeon to serve as a journal for the paper-roll.

6 represents a spring for holding the post in a vertical position. This hinged post may be turned down to remove the roll, and the spring 6 automatically brings it back into position.

8 represents a tension-rod supported upon posts 9, under which paper *a* passes from the paper-roll to the measuring and cutting roll.

A represents the measuring and cutting roll. In the preferred form of construction I employ coacting feed-roll B.

b represents a series of rubber bands the peripheries of which come in contact with the spools *c* on the lower feed-roll B. Between these spools the roll is preferably cut away. The paper is fed forward by being grasped between the rubber bands *b* and the spools *c*, except during the act of cutting.

At this point the knife D is inserted on roll A, in front of which the bands terminate.

Cutting-knife D is preferably serrated and mounted upon the measuring-roll A.

E represents a spring-plate secured to the base of the machine and projected forward to about the center of the measuring and cutting roll. It supports and holds the paper against the knife during the operation of cutting. It yields or bends downward by contact with the knife in the act of cutting, as seen in Fig. 3; but as the knife passes over the spring it flies back and strips or completes the cutting, as shown in Fig. 4. The coacting-roll B is hinged upon spring-arms, as the spools *c* are normally in contact with the rubber bands *b*; but the knife D must project outward farther than the bands, so as to sever the paper. Hence when the knife has severed the paper, as in position shown in Fig. 4, it comes in contact with the spools of roll B. The spring-arms H on which said roll is journaled are bent downward, so as to allow the knife to pass the roll. This act of cutting and moving of roll B momentarily releases the paper from the grasp of the roll A. In order that the cut end of the paper may be taken up and carried forward between the rolls A B, I provide the following instrumentalities.

e e represent bands on roll A, between the rubber bands *b*, which have greater radial projection than the bands *e*, and they register into the space or grooves between the spools *c c* of roll B. When the spring-plate E flies back after stripping the paper from the cutter, as shown in Figs. 4 and 5, it presses the paper up against these bands *e*, and they are carried forward during the momentary operation of the yielding downward of the roll B. When it comes back into position shown in Fig. 4, these bands *e* and the spring E have carried the paper forward, so that it engages between the rolls A B when the roll B comes back into position. In order to insure the engagement of the end of the paper with these bands, I make a shoulder I in rear of the knife D. The spring flying back carries the paper against the shoulder and secures the engagement of the paper with the roll A during the momentary depression of roll B. During its depression the spring acts with the roll A as a substitute for roll B in feeding the

paper forward. The spring-plate E, therefore, performs two important functions. It holds the paper against the knife and yields with the knife and then flies back to strip or
 5 make a clean cut of the knife, and in this action of going back it brings the paper firmly in contact with the shoulder of roll B and of the bands *e*. By having the bands *e* of greater radial projection than the bands *b* it prevents
 10 the spring from striking against the rubber and wearing it out. It likewise prevents frictional electricity, which would be generated if the spring and rubber were in continuous contact. The bands *e* are therefore preferably
 15 made of paper, wood, or other similar substance. The shoulder I is preferably made of similar material.

K represents a crank attached to the axis of the measuring-roll A.

20 The operation is as follows: The paper *a* is started from the roll, carried around under the tension-rod 8, and brought into engagement between the bands *b* and the spools *c* of the roll B. The crank K is turned, revolving the roll A. The contact of the bands *b*
 25 with the spools *c* carries the paper forward. When the knife D comes around into the position shown in Fig. 3, it engages with the paper, the serrated points are forced through
 30 the paper, the spring yields, and when the knife passes off the end of the spring the spring flies back into the position shown in Fig. 4 and the sheet of paper *a'* is cut off and forced forward by the knife D. As the spring
 35 flies back it carries the end of the sheet of paper *a* against the shoulder I and holds it in engagement against the said feed-roll A until the paper is drawn forward to engage
 40 with roll B, which meantime has come back into position, so that the paper is grasped by the bands *b* and the spools *c*.

An inferior modification would be to omit the feed-roll B and have the paper fed forward by contact of the bands *b* with the ends
 45 of the spring E. The only objection to this form of construction is that the paper becomes electrized by the friction of the rubber against the spring-plate; but when roll B is employed this difficulty is entirely removed.
 50 Having described my invention, what I claim is—

1. The combination, with supports for a paper-roll, of a rotating feeding-roll A, having annular bands *e* and a radiating knife D, and
 55 a spring-plate E, secured at one end and having its opposite free end extending beneath the feeding-roll to co-operate with the knife

thereof to cut a web of paper and by its resiliency springing toward the feeding-roll against the annular bands, substantially as 60 and for the purposes described.

2. In a roll-paper cutter, the combination of the feeding-roll A, provided with a knife D and bands *b*, the coacting roll B, provided with spools *c* and journaled upon spring-arms 65 which yield vertically, and a spring-plate E, co-operating with the knife of the feeding-roll to sever a web of paper, substantially as described.

3. In a roll-paper cutter, the combination 70 of a roll A, provided with a knife D, bands *b*, and radially-projecting bands *e*, the coacting roll B, provided with spools *c*, and having grooves between the spools to register with the radially-projecting bands, and a spring-plate 75 E, extending under the feeding-roll, substantially as described.

4. In a roll-paper cutter, the combination of the measuring-roll A, provided with a knife D and having the shoulder I and bands *b*, the 80 vertically-movable roll B, having the spools *c* bearing against the bands of the knife-carrying roll, and the spring-plate E, coacting with the knife to sever and strip the paper and force it in contact with the shoulder of the 85 measuring-roll, substantially as described.

5. In a roll-paper cutter, the feeding-roll A, provided with the rubber bands *b*, the radially-extending bands *a*, the knife D, and the shoulder I in rear of the knife, in combination with the roll B and the spring-plate E, 90 substantially as described.

6. In a paper-roll cutter, the combination of the measuring-roll A, armed with knife D, having the feeding-bands *b*, the vertical 95 moving feed-roll B, having the spools *c* in contact with the bands *b*, and the spring-plate E, coacting with said knife D to cut and strip the paper and force it in contact with the shoulder I of said measuring-roll, substantially as specified. 100

7. In a paper-roll cutter, the feeding-roll A, provided with the series of rubber bands *b*, the radially-extending bands *e*, the knife D, the shoulder I in rear of said knife, in combination with coacting spring-plate E, substantially as specified. 105

In testimony whereof I have hereunto set my hand.

WALTER S. MENDENHALL.

Witnesses:

C. W. MILES,
T. SIMMONS.