

(No Model.)

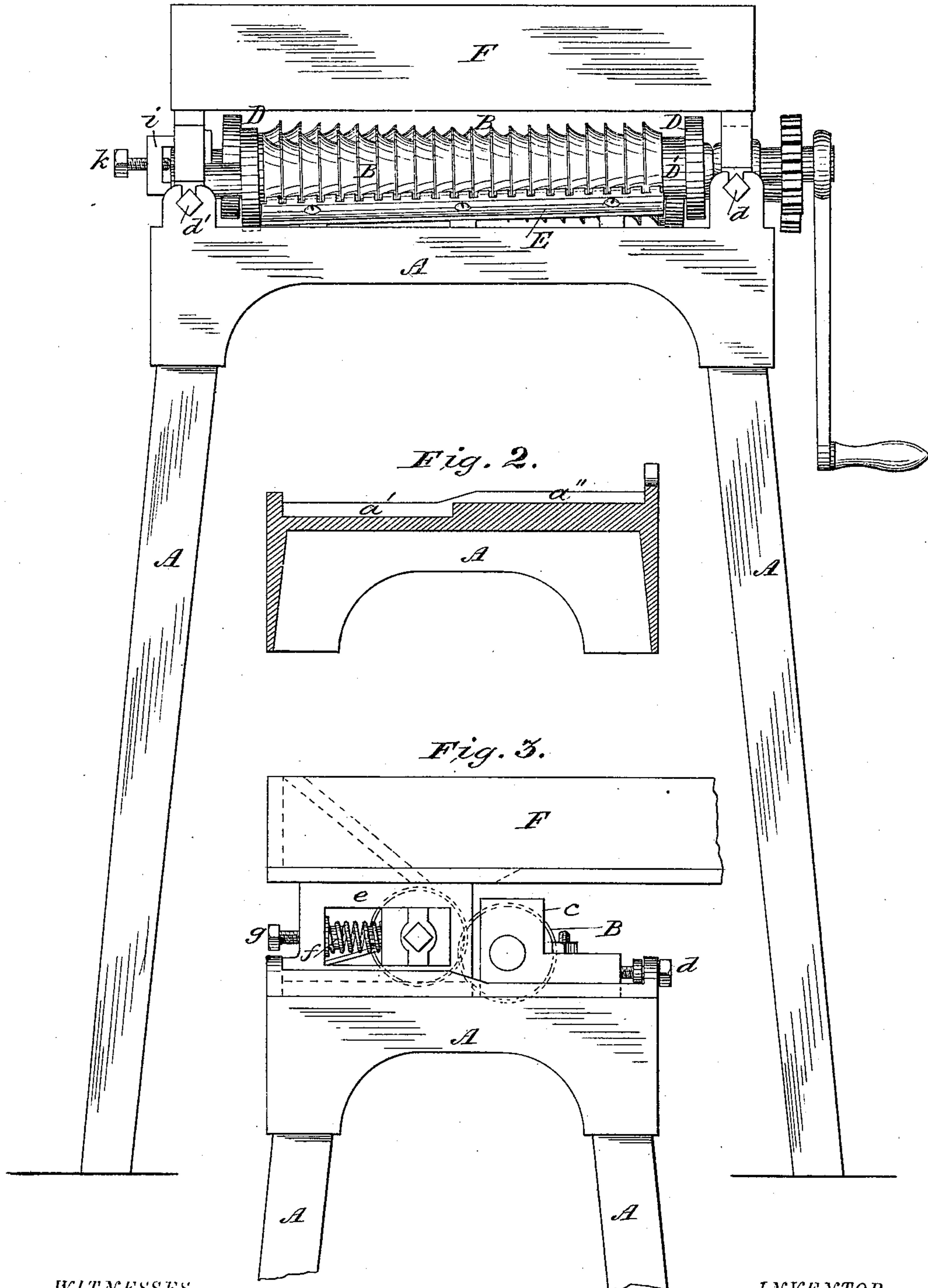
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C. HEMJE.
TOBACCO CUTTING MACHINE.

No. 250,732.

Patented Dec. 13, 1881.

Fig. 1.



WITNESSES
E. W. Craig
A. H. Betz

By

Attorney

J. C. Brecht

INVENTOR

Charles Hemje

(No Model.)

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Fig. 4.

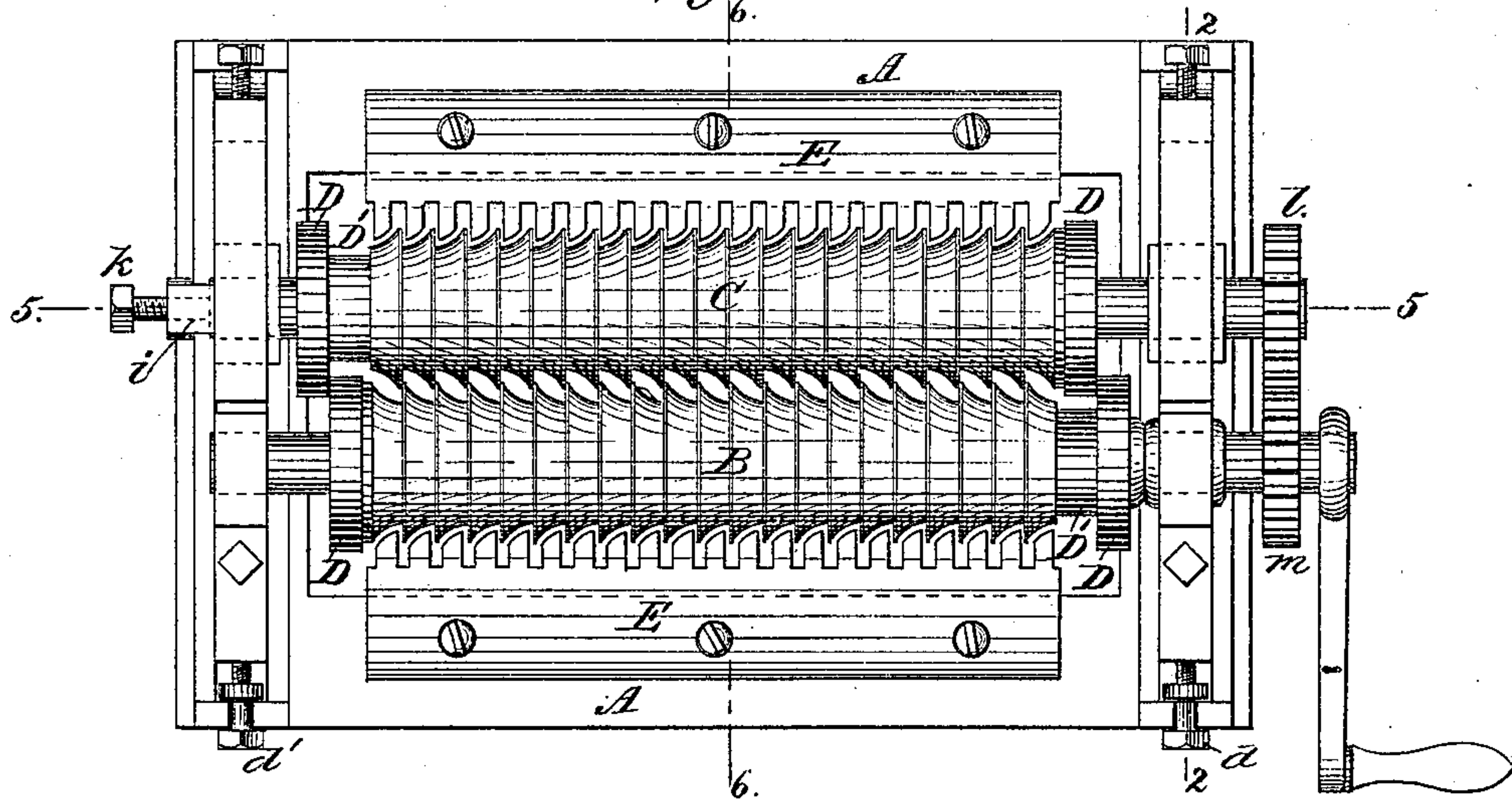


Fig. 5.

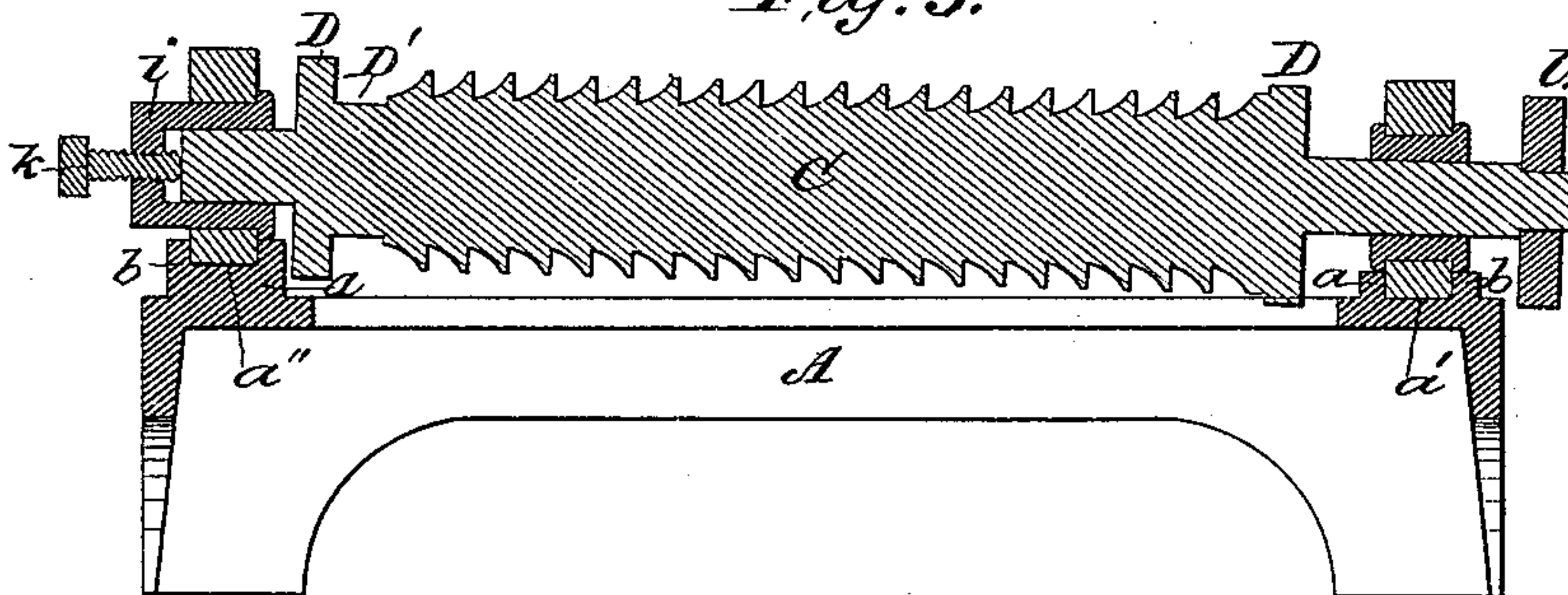
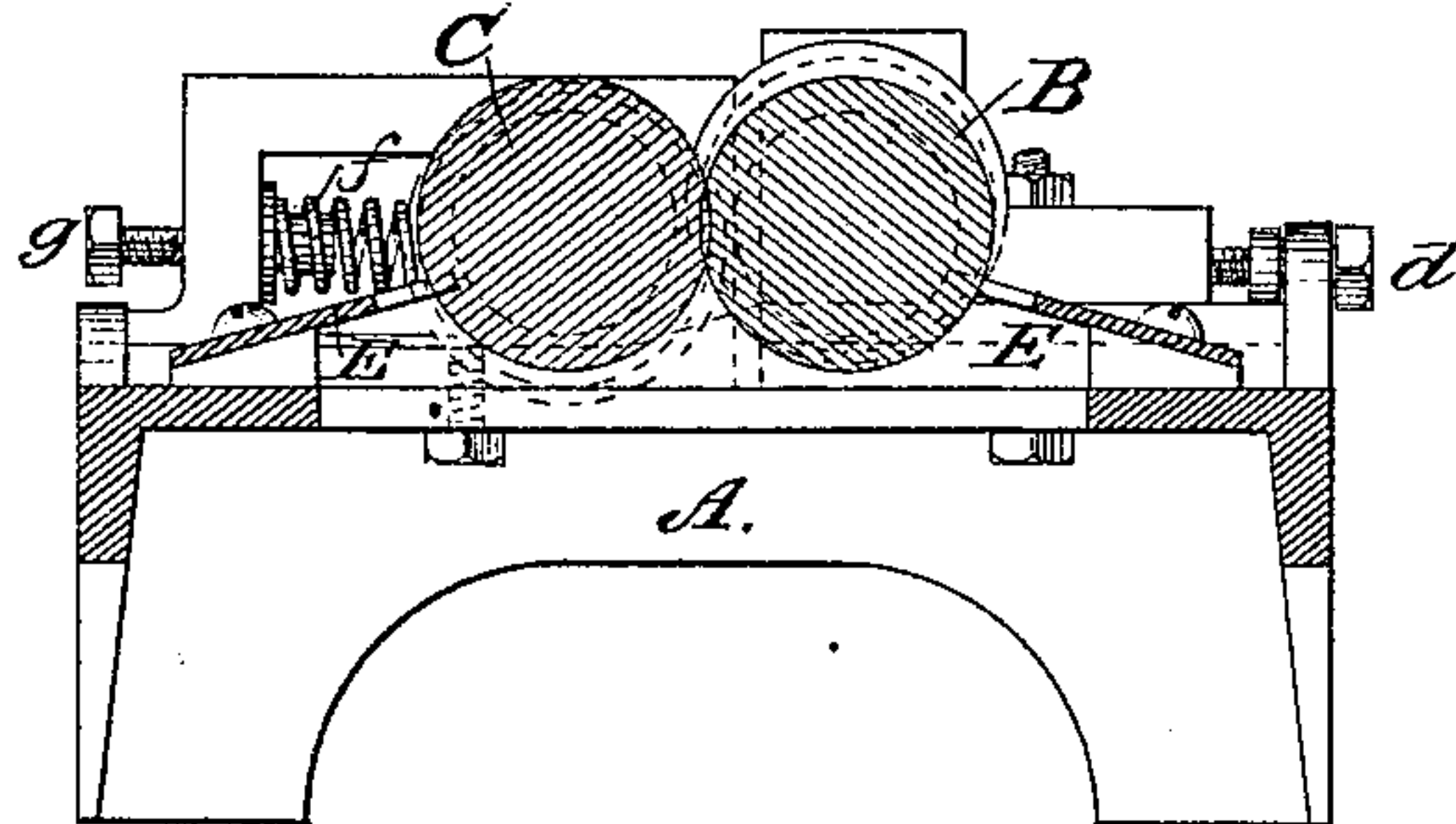


Fig. 6.



WITNESSES

E. W. Craig
A. H. Betz.

INVENTOR

Charles Hemje.

By *Attorney*

T. C. Brecht.

(No Model.)

3 Sheets—Sheet 3.

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Fig. 2.

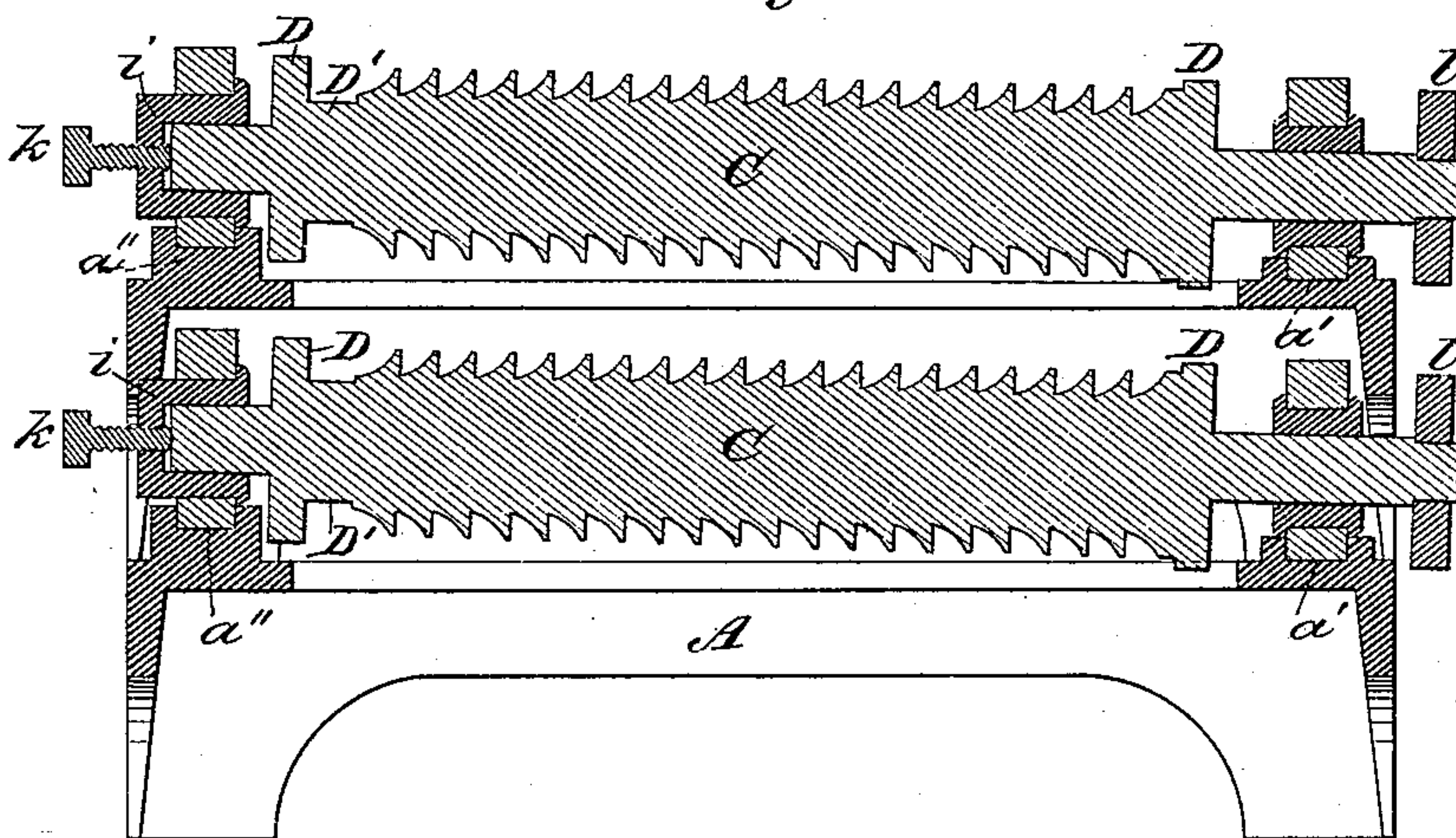


Fig. 8.

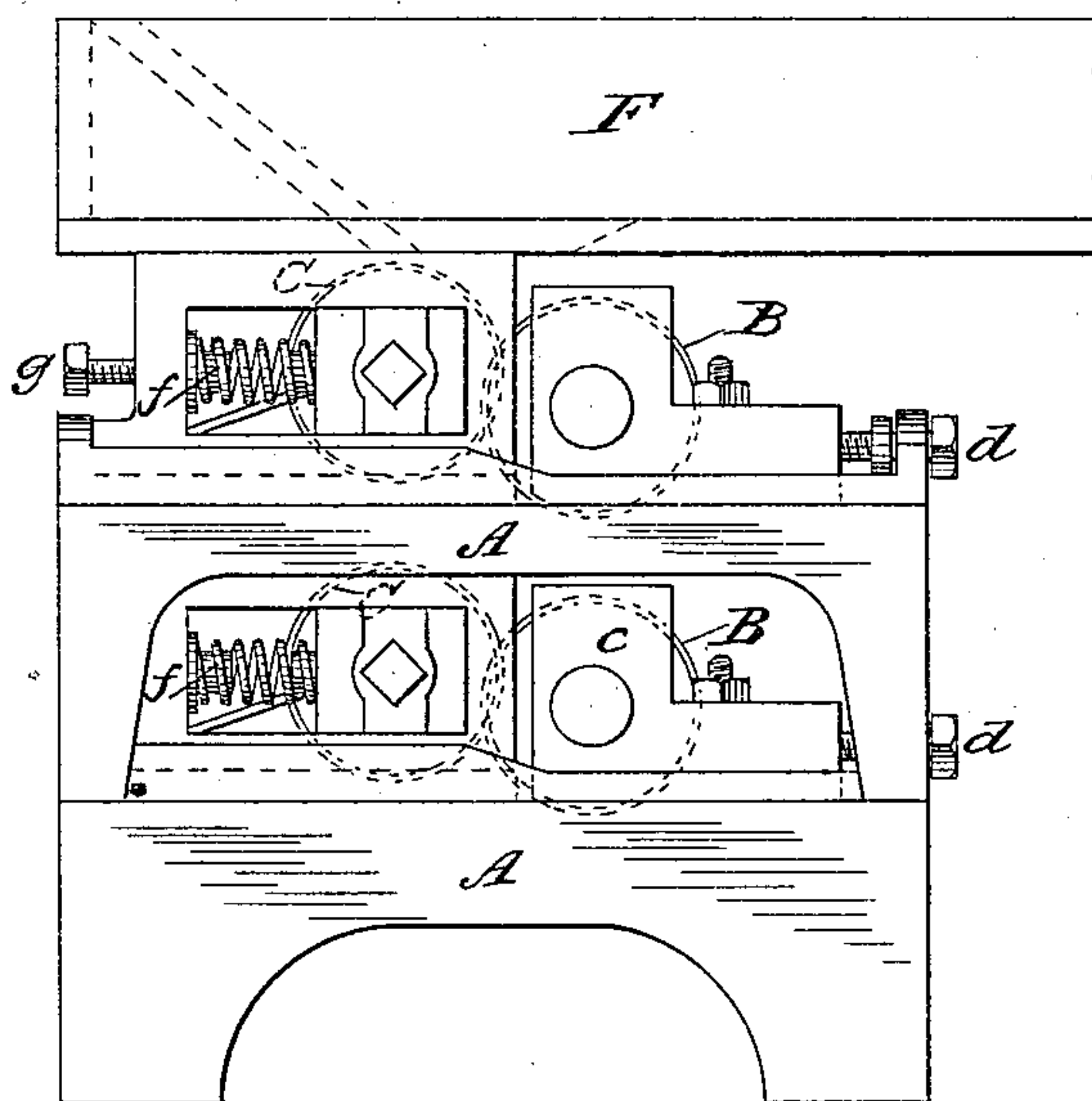
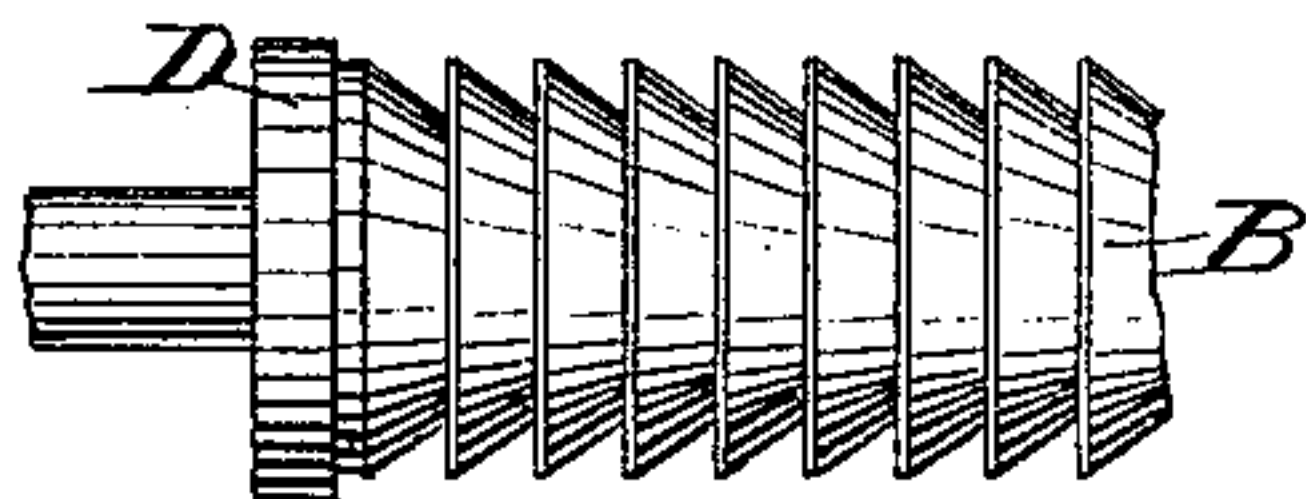


Fig. 9.



WITNESSES

E. W. Craig
A. H. Petz.

INVENTOR

Charles Hemje.

By

Attorney

Charles H
T. C. Brecht,

UNITED STATES PATENT OFFICE.

CHARLES HEMJE, OF WASHINGTON, DISTRICT OF COLUMBIA.

TOBACCO-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 250,732, dated December 13, 1881.

Application filed October 14, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HEMJE, a citizen of the United States, residing at Washington city, in the District of Columbia, have
5 invented certain new and useful Improvements in Tobacco-Cutting Machines; 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 apper-
10 tains to make and use the same.

My invention relates to machines for cutting up leaf-tobacco or tobacco-stems into scraps or small pieces, such as is now frequently used for making the fillers of cigars, or for the cut-
15 ting of smoking-tobacco; and the object is to improve the construction of such machines.

The invention consists in the construction and arrangement of certain parts of a tobacco-cutting machine, as will hereinafter be described, and specifically pointed out in the
20 claims.

In the accompanying drawings, Figure 1 represents a side elevation of my machine, showing especially the inclination of the cutting-
25 rollers to each other. Fig. 2 represents a section through the frame on the line 2 2 of Fig. 4, showing the manner in which the inclination of the cutting-rollers to each other is obtained. Fig. 3 is an end elevation of my ma-
30 chine. Fig. 4 is a plan view of the same. Fig. 5 is a section on the line 5 5 of Fig. 4. Fig. 6 is a cross-section on the line 6 6 of Fig. 4 of my machine. Fig. 7 is a longitudinal section of a double machine. Fig. 8 is an end view
35 of the same. Fig. 9 represents part of a roller with straight or inclined grooves.

In the accompanying drawings, A represents a suitable frame arranged for the reception of the cutting apparatus, the peculiar
40 construction of which will be more fully described farther on.

The cutting apparatus consists of two rollers, B C, grooved in such a manner as to form cutting-edges, the grooves between the cutting-
45 edges being either made curved, as shown in Figs. 1, 4, and 5, or straight and inclined, as shown in Fig. 9. These rollers are placed end for end—that is to say, in such a manner that the straight vertical sides of the cutting-edges
50 face each other. Either on one or both ends of these rollers B C is formed a collar, D,

somewhat larger in diameter than the cutting part of the roller, and opposite this larger collar is a deeper groove, D', in the adjoining
roller, so as to enable the collar on the oppo- 55 site roller to pass through it. These collars lap each other in the same manner as the cutting-edges, only a little more. The shaft of each roller is in a journal-box at each end, which rests in a groove formed by the two
60 ribs *a b* of the frame A.

The journal-boxes *c* of the roller B are plain and fastened to the frame A by bolts, the holes in the boxes through which the bolts pass being elongated or slotted, so as to enable the
65 journal-boxes to be slightly moved by the set-screws *d* and *d'* in the end.

The laps of the cutting-edges of the rollers should be about one-sixteenth of an inch, which can be regulated by the set-screws *d* 70 and *d'*, referred to above.

The journal-boxes of the roller C are stationary, and may be either plain, like those on the roller B, or they can be made to slide in a
stationary outer box, *e*, and supplied with a 75 strong spring, *f*, to keep them in place.

A set-screw, *g*, passes through the outer box, and can be tightened or loosened, so as to properly regulate the tension of the spring.

As nails and other hard substances are frequently found among leaf-tobacco, this spring
journal-box is of great value in this machine, allowing the roller to move away from the other
roller and let the nail pass through without
injuring the cutting-edges, which would not 85 be the case if the roller C were stationary.

If the rollers are placed horizontally and parallel to each other on the frame, so that the cutting-edges would bear flat against each other, they would not cut well, and to make them cut
90 properly two things are necessary: The first is that the rollers should be placed at a very small angle to each other—that is to say, on the same side of the frame A the one roller should be slightly higher than the other one—so that
95 the cutting-edges do not bear flat against each other, but only touch at one point, thereby producing the shear-cut. To obtain this cut the space between the ribs of the frame on which the journal-boxes rest is not made flat, but in
100 two diagonally-opposite corners. The bearing-point for the journal-boxes is made somewhat

higher, as is plainly shown in Figs. 2 and 5. The same object can be attained by having inclined planes between the ribs, said inclined planes to run in opposite directions. The
 5 second requirement is that the cutting-edges of the rollers should be firmly held against each other. If a spring journal-box is used for one of the rollers, a bridge, *i*, is formed on the sliding journal-box, extending outside of the end
 10 of the roller-shaft, and through this bridge a set-screw, *k*, passes and bears against the end of the roller *C*, thus giving the required pressure to the cutting-edges. With plain journal-boxes the set-screw can pass through a plate
 15 attached directly to the frame.

The enlarged collar and its corresponding groove on one or both ends of the rollers are of the greatest importance, and serve to take any undue strain from the cutting-edges, which
 20 may be occasioned by tightening up the set-screw *k* too much. If any hard substance—such as a nail—gets into the machine, the rollers would spread apart, and as the lap of the cutting-edges is only about one-sixteenth of an
 25 inch, the pressure of the set-screw would force the cutting-edges past each other and probably break or injure them. For this reason the preventer-collars *D* are made stronger and of a larger diameter, so that if the rollers should
 30 spread beyond the lap of the cutting-edges they will not be allowed to move endwise by the pressure of the set-screw *k*.

Scrapers or combs *E* are secured in any suitable manner and position, but preferably as
 35 shown, to prevent the grooves of the rollers from clogging up, which might be otherwise the case if wet tobacco is cut on the machine.

A feed-box, *F*, is arranged on top of the machine, so as to leave merely an opening large
 40 enough for the tobacco to get to the rollers. The rollers are geared together by cog-wheels *l m*, or any other suitable contrivance, and on the end of one of the rollers a suitable crank or pulley is secured to operate the machine
 45 either by hand or power. As the tobacco is cut into strips only by the first operation of the machine it has to be run through a second time to make the scrap; but two sets of rollers of the same kind could be arranged, one on
 50 top of the other, so that the cutting of scraps

or smoking-tobacco can be performed in one operation. The two machines can in this instance be geared together by cog-wheels, endless chain, or any other suitable device, although it would be advisable to gear the two
 55 machines in such a manner that the lower one would run a little faster than the upper one, to prevent it from being overfed by the top one.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, 60 is—

1. In a tobacco-cutting machine, the thrust-collars of greater diameter than the cutting-edges of the rollers, and arranged at one or both ends, in combination with one or more
 65 sets of cutting-rollers having curved or straight inclined grooves, as shown, and for the purpose set forth.

2. In a tobacco-cutting machine, a frame, *A*, provided with raised seats in two diagonally-
 70 opposite corners, for the pillow-blocks of the journal-boxes, in combination with the cutting-rollers *B C*, substantially as specified.

3. In a tobacco-cutting machine, a frame, *A*, provided with raised seats in two diagonally-
 75 opposite corners, for the pillow-blocks of the journal-boxes, in combination with the cutting-rollers *B C*, having thrust-collars of greater diameter than the rollers, substantially as described. 80

4. In a tobacco-cutting machine, the rollers *B C*, provided with thrust-collars of greater diameter than the rollers, in combination with the sliding spring journal-boxes, arranged substantially as and for the purpose specified. 85

5. In a tobacco-cutting machine, the rollers *B C*, provided with thrust-collars of greater diameter than the rollers, in combination with the sliding spring journal-boxes and the frame
 90 *A*, having raised seats in two diagonally-opposite corners for the pillow-blocks of the journal-boxes, substantially as set forth.

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

CHARLES HEMJE.

Witnesses:

A. H. BETZ,
 C. S. DRURY.