

(No Model.)

2 Sheets—Sheet 1.

E. C. FORD & G. T. JACOBS.
ROLL PAPER HOLDER AND CUTTER.

No. 448,138.

Patented Mar. 10, 1891.

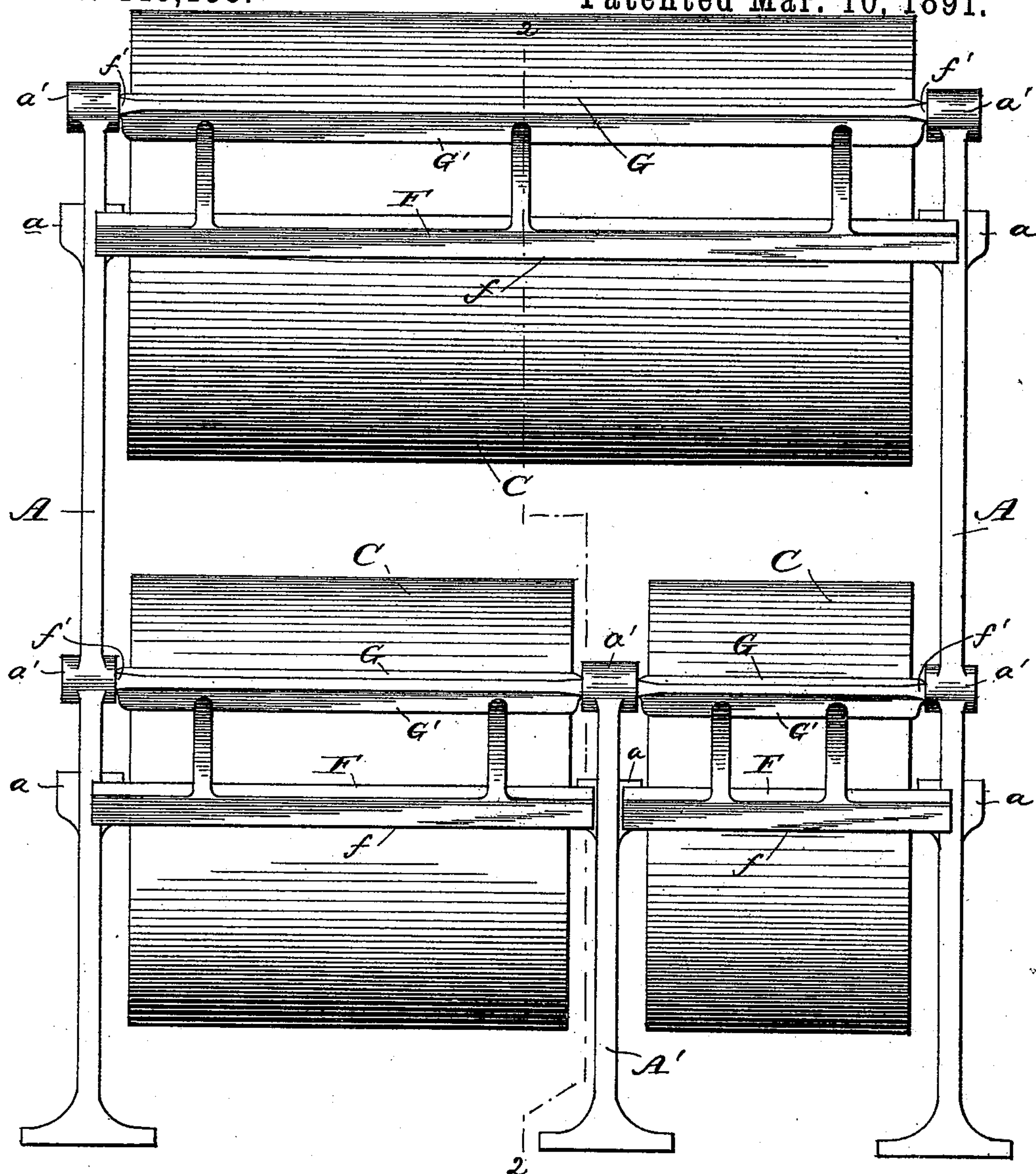


Fig. 1.

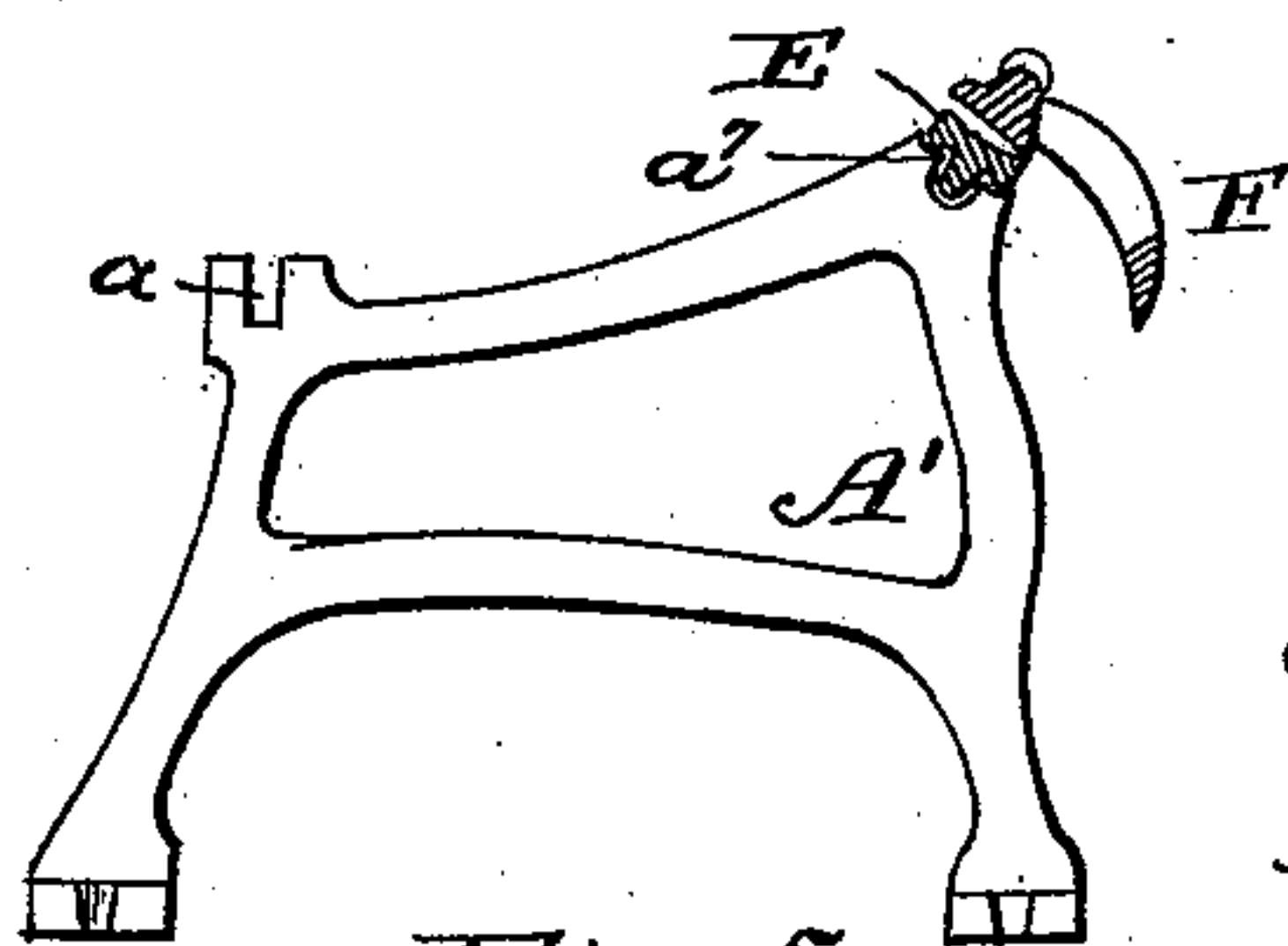


Fig. 5.

Witnesses:-

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Fig. 2.

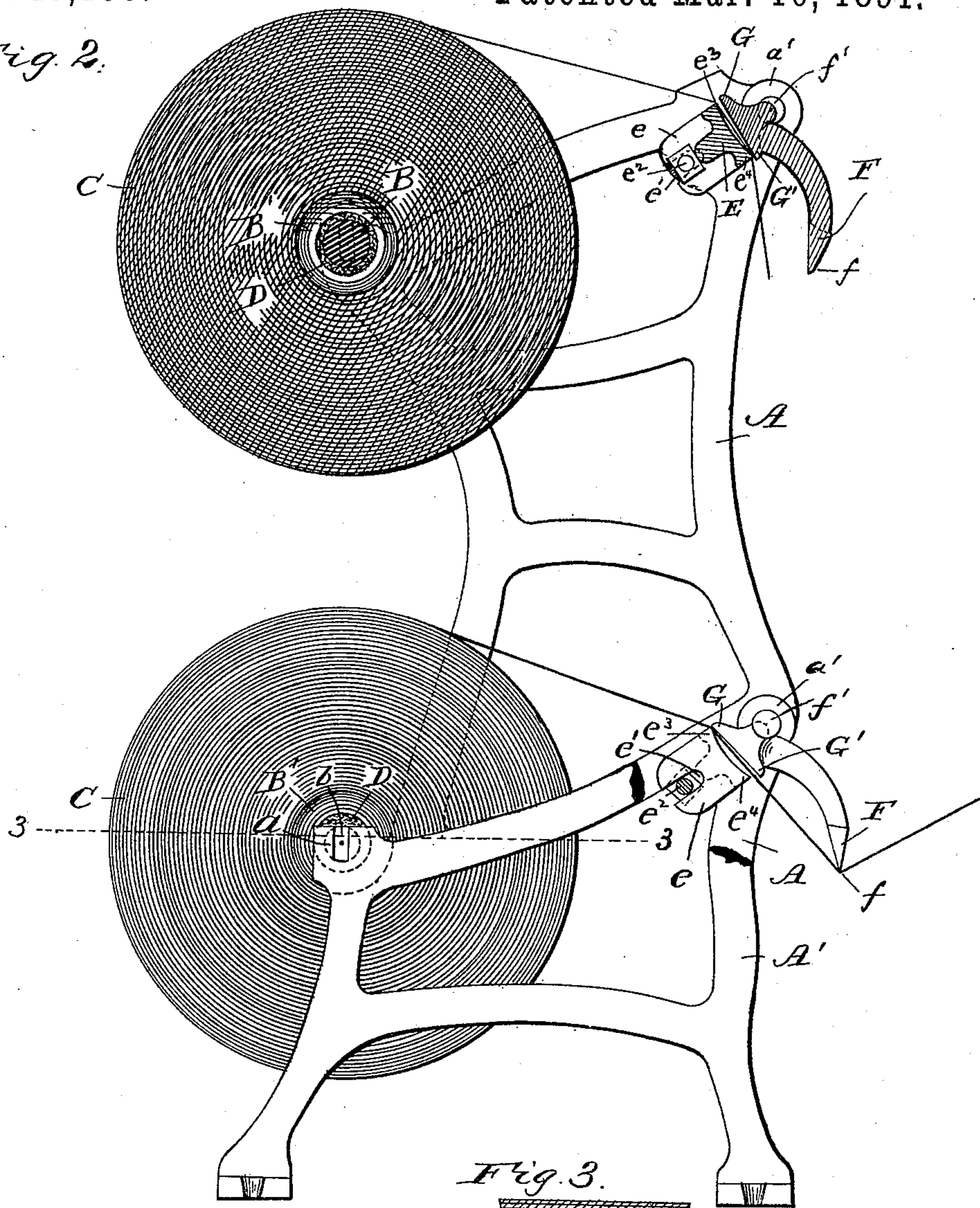


Fig. 3.

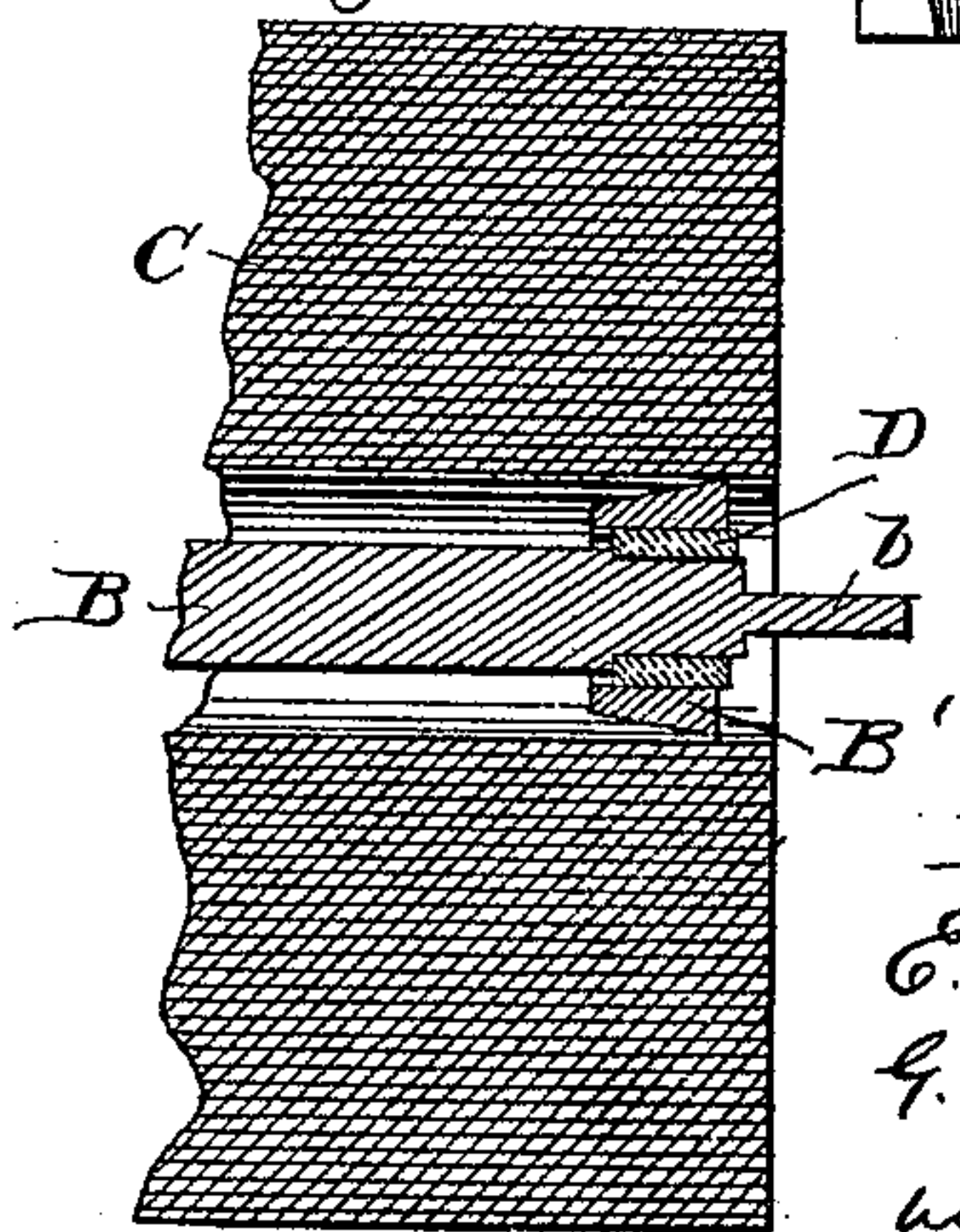
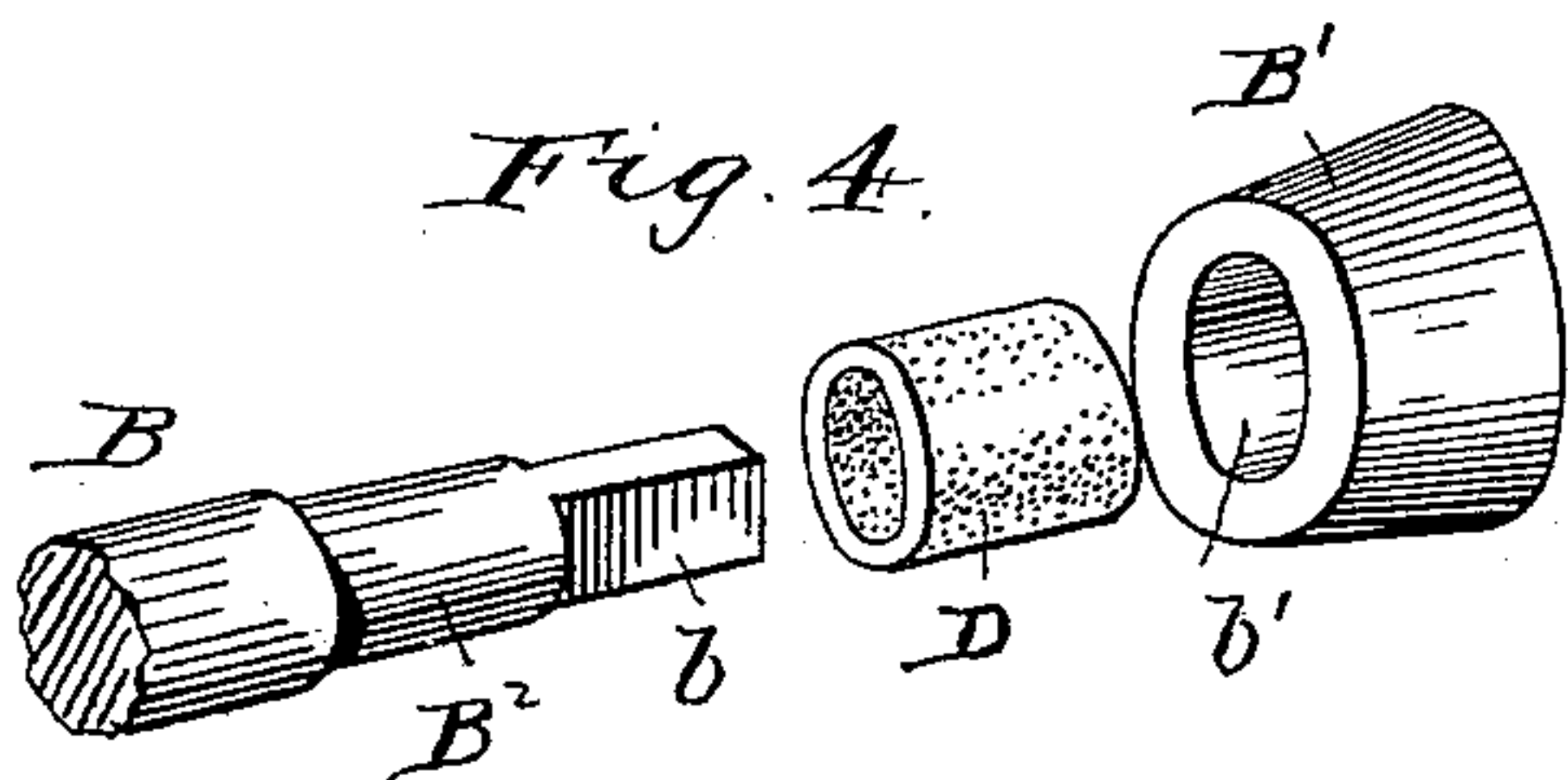


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD C. FORD AND GEORGE T. JACOBS, OF WASHINGTON, DISTRICT OF COLUMBIA.

ROLL-PAPER HOLDER AND CUTTER.

SPECIFICATION forming part of Letters Patent No. 448,138, dated March 10, 1891.

Application filed May 23, 1890. Serial No. 352,959. (No model.)

To all whom it may concern:

Be it known that we, EDWARD C. FORD and GEORGE T. JACOBS, citizens of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Roll-Paper Holding and Severing Machines; and we do 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.

Our present invention relates to that class of paper holding and severing machines in which the paper is mounted in the shape of and furnished from a roll controlled by a suitable tension device and adapted to be severed in the desired lengths by a cutter bar or knife, against the edge of which the paper is forcibly drawn by the user.

Our present improvements are directed to a simplified means whereby the free edge of the paper is always held in position to be conveniently grasped by the fingers of the user and the roll automatically prevented either from accidental backward rotation or from forward movement while the paper is being drawn against the knife-edge to be severed.

Our improvements are further directed to the tension device, which controls the forward movement of the roll and tends to prevent any overrunning thereof.

With these ends in view our invention consists in the essential parts and combinations thereof hereinafter set forth and claimed, our invention extending, however, to all other combinations which, though different from those which we have hereinafter particularly illustrated and described, are the equivalents thereof and adapted to realize either wholly or in part the uses and advantages of our invention.

In order to make our invention more clearly understood, we have shown in the accompanying drawings means for carrying the same into practical effect.

In said drawings, Figure 1 is a front view of a roll-paper holding and severing machine embodying our improvements. Fig. 2 is a sectional view of the same. Fig. 3 is a sectional view on line 3 3, Fig. 2, of a portion of the roll and one of its tension-bearings. Fig. 4 is

a perspective view of the parts separated which form such bearing. Fig. 5 is a side view of a modified form of intermediate frame, showing in section a continuous paper support and continuous knife.

Referring to the drawings, A indicates the end frames, adapted to be firmly secured to any desired base. They are rigidly held at a suitable distance from each other, as through the medium of such base or by a brace bar or bars extending from one frame to the other and secured to each. These frames are provided with bearings *a* for the ends of the axes of the rolls, the height or size of the frames and number of such bearings being dependent upon the number of rolls which it is desired to support upon them. The bearings may be round or half-round to permit of the rotation of the axis; but we prefer to form them squared or angular, as shown, and correspondingly shape or flatten the ends *b* of the axis or axes B, so that the bearings will hold it stationary, causing the roll to turn upon the axis as paper is drawn off. We are thus able to provide a simple but effective tension device adapted to prevent any overrunning of the roll under the impulse acquired from the pull on the paper.

B' are bearings, preferably conical in external form and adapted to be fitted tightly and securely held within the ends of the roll C. The ends of the axis B are provided with corresponding journals B², which are, however, of less diameter than the interiors *b'* of the said bearings.

D are sleeves, of rubber or equivalent material, of a size to fit tightly over the journals B² and neatly within the bearings B'. A resistance or tension is thus in a very simple manner applied to the rotation of the roll, with the result that the desired length of paper may be easily drawn off, but the rotation of the roll will cease immediately with the pull on the paper.

E indicates a longitudinal support or bar carried by the frames A, and over which the free edge of the paper is adapted to be passed and sustained in a given position, where it may be readily grasped by the user, whatever be the size of the roll. The ends of this support are preferably flanged, as shown at *e*,

and provided with slots e' , enabling it to be adjusted into parallelism with and to a proper distance from an opposing part or surface, hereinafter described, by means of bolts e^2 , which pass through said slots and apertures in the frames A, and can be screwed up, after the support E is adjusted, to clamp the flanges e firmly against the frames. The support E is by preference slightly hollowed, so that it presents to the paper two edges or surfaces—an upper e^3 and a lower e^4 .

F is a knife having an edge f , and hinged or pivoted upon the frames A so as to be capable of oscillation within certain limits. Such hinging is conveniently effected by means of journals f' , formed with or secured to the knife and fitting in bearings a' in the frames A.

G indicates a part or surface operated or moved by the knife when the latter oscillates, and adapted when so moved to hold the free end of the paper against the opposing edge or surface e^3 , already described. It will be readily seen from the relation of the parts that, the desired quantity of paper having been pulled from the roll and drawn across the edge f of the knife, the latter will first be moved to cause the paper to be grasped between the parts G and e^3 and held from further unwinding while it is divided where it is drawn against the knife-edge. It will also be seen that the operation of these devices is irrespective of whether the roll be of full diameter or nearly consumed. We have also provided a second part or surface G' on the opposite side of the axis of the knife from the part G and adapted to be moved by the downward oscillation of the knife to its normal position into engagement with the paper and press the latter against the lower surface e^4 , already referred to. The free edge of the paper will thus at all times be held in proper position, and the roll cannot be accidentally turned backward to draw said edge off from the support E and cause delay and annoyance in the use of the machine.

The gravitating effect of the knife is sufficient in the construction illustrated to hold the paper securely between the parts G' and e^4 ; but a spring may be applied in an obvious manner to the knife, if desired, to give a greater pressure.

In order to provide for a plurality of rolls, giving different widths of paper, one or more intermediate frames A' may be employed, having bearings a for the rolls. The intermediate may also have bearings a' for the knives on each side thereof; but the knife

and also the support E may be continuous, running from one outside frame A to the other and across both rolls, as indicated in Fig. 5, in which the intermediate A' merely comes up to and at a' fits the inner side of said support, being formed without any perforation for the clamping-bolt of the support and without any bearing a' for the knife.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. In a roll-paper holding and severing machine, the combination, with a frame or support for the roll, of a longitudinal support for the free edge of the paper, and an oscillating knife having parts or surfaces on opposite sides of its axis acting to hold the paper against said support in either position of the knife, substantially as set forth.

2. In a roll-paper holding and severing machine, the combination, with a frame or support for the roll, of a longitudinal support for the free edge of the paper, and an oscillating knife having a part constituting a tension-bar operated by the movement of the knife, said support and bar acting to hold the paper between them in either position of the knife, substantially as set forth.

3. In a roll-paper holding and severing machine, the combination, with a frame or support for the roll, of bearings adapted to fit within the roll, a stationary axis held from rotation on said frame and passing through said bearings, and rubber sleeves interposed between the interiors of the bearings and the exterior of the axis, substantially as set forth.

4. In a roll-paper holding and severing machine, the combination, with a frame or support for the roll, of exteriorly-conical bearings adapted to be wedged within the ends of the roll, a stationary axis held from rotation on said frame and passing through said bearings, and rubber sleeves interposed between the interiors of the bearings and the exterior of the axis, substantially as set forth.

5. The combination, with the frames A A and the continuous knife pivoted thereon, of the continuous support E and the separate intermediate bracket A', shaped to fit the said support, substantially as set forth.

In testimony whereof we have hereunto affixed our signatures in presence of two witnesses.

EDWARD C. FORD.
GEORGE T. JACOBS.

Witnesses:

H. N. LOW,
D. H. CURRY.