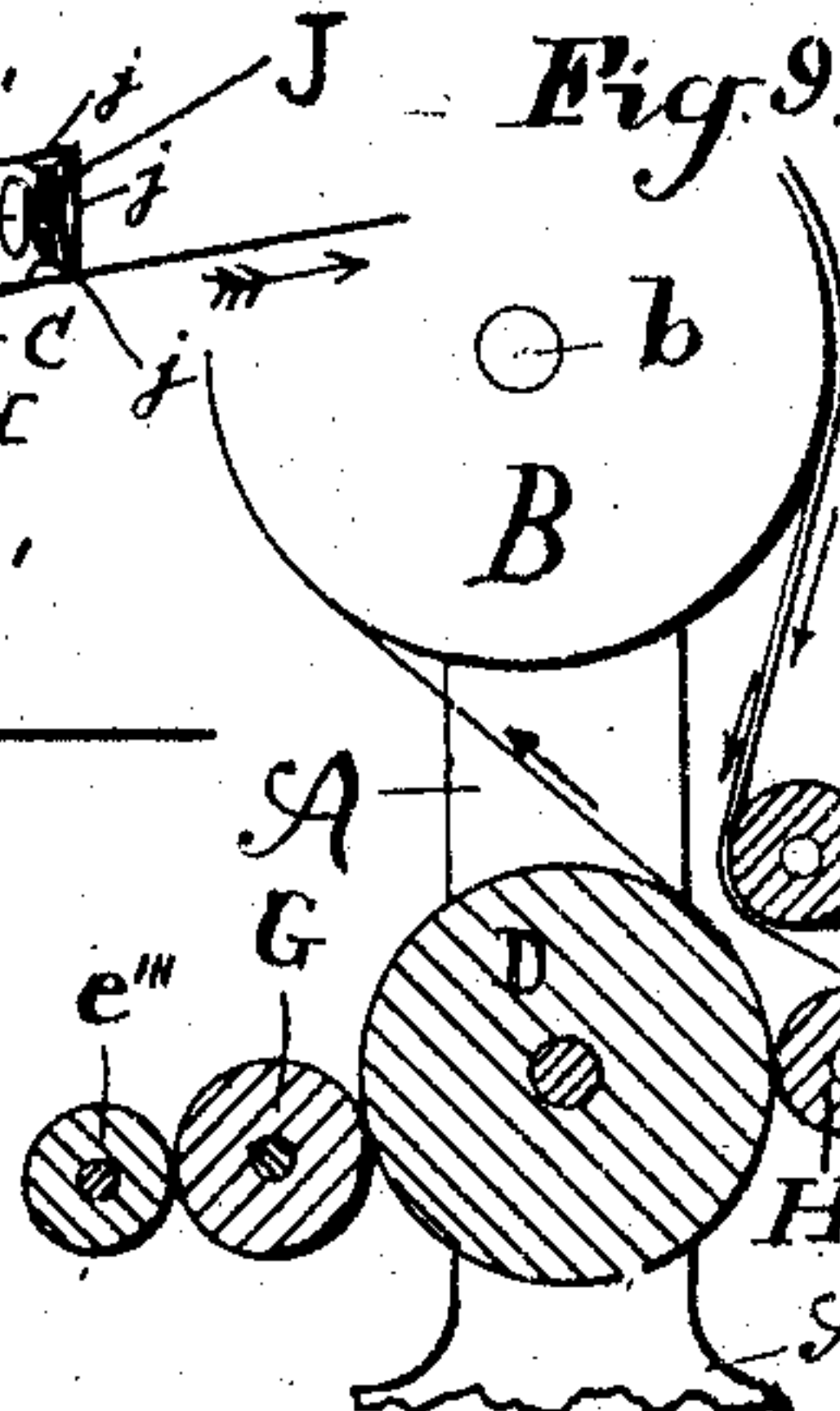
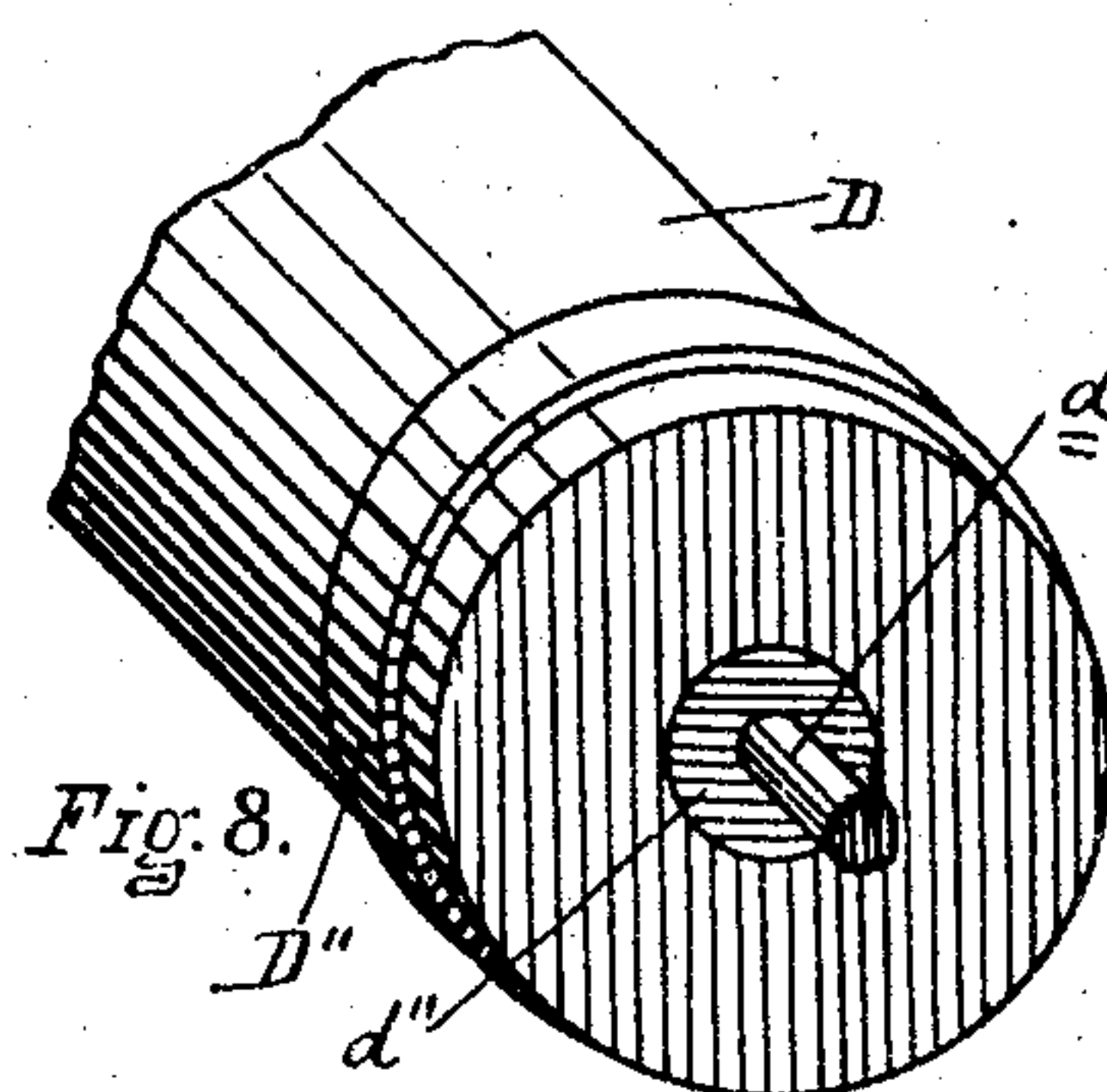
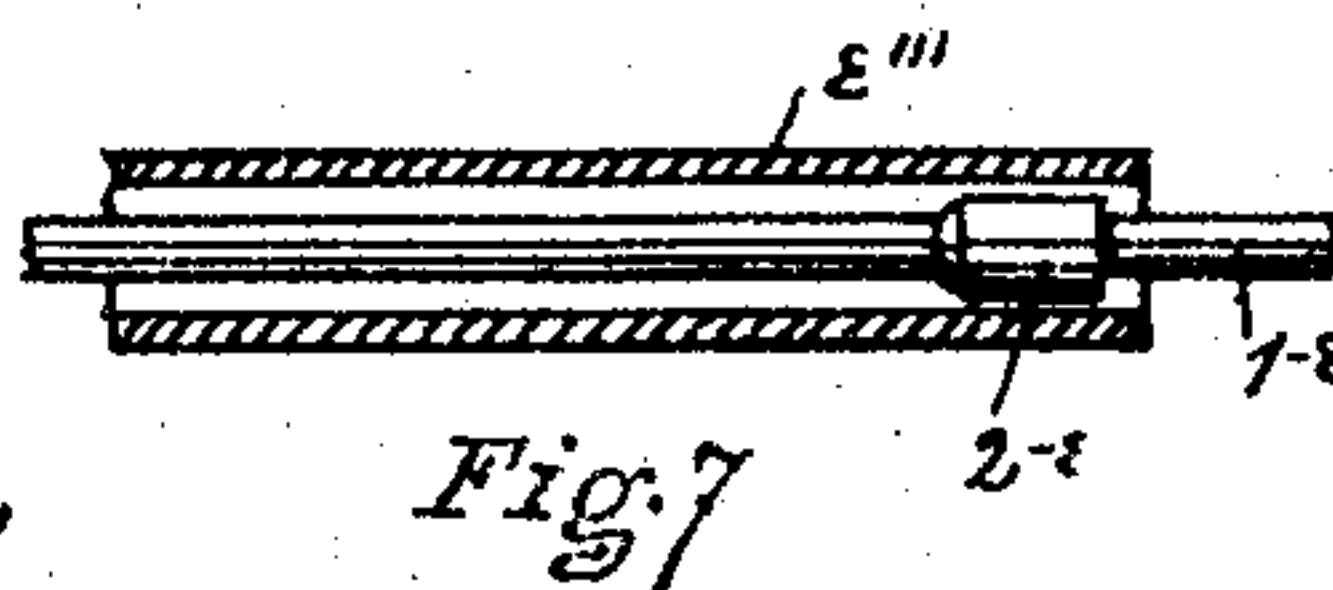
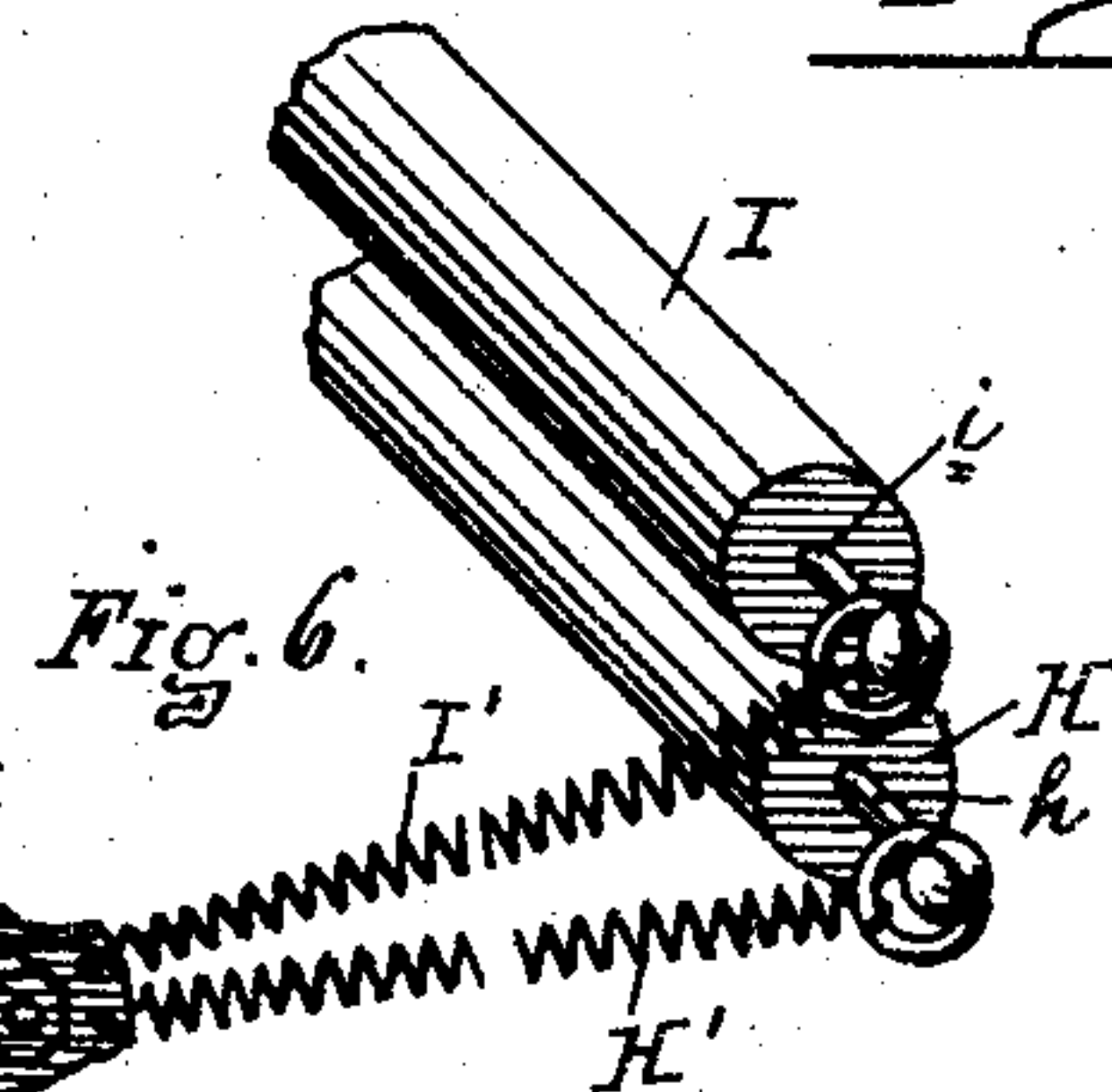
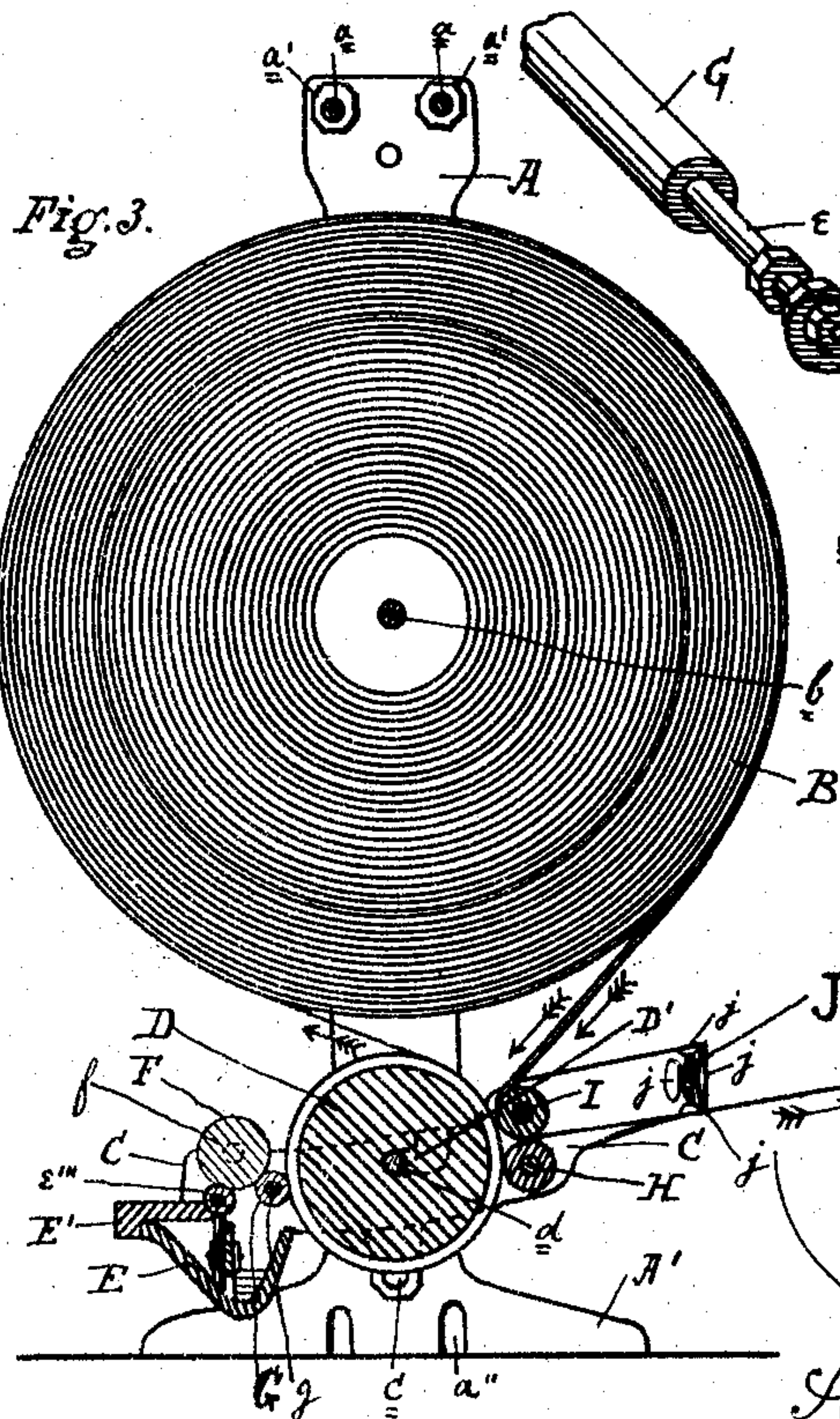
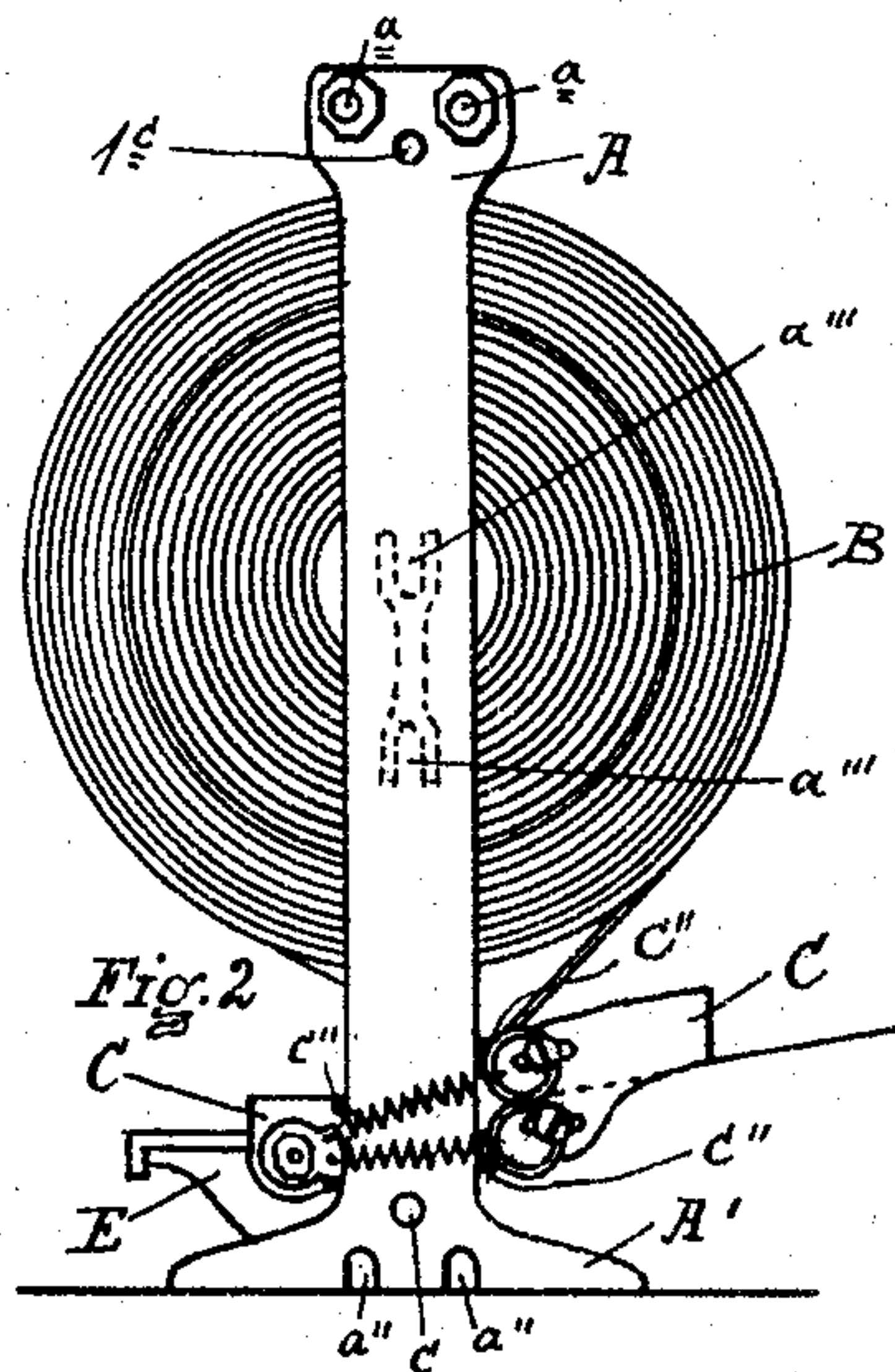
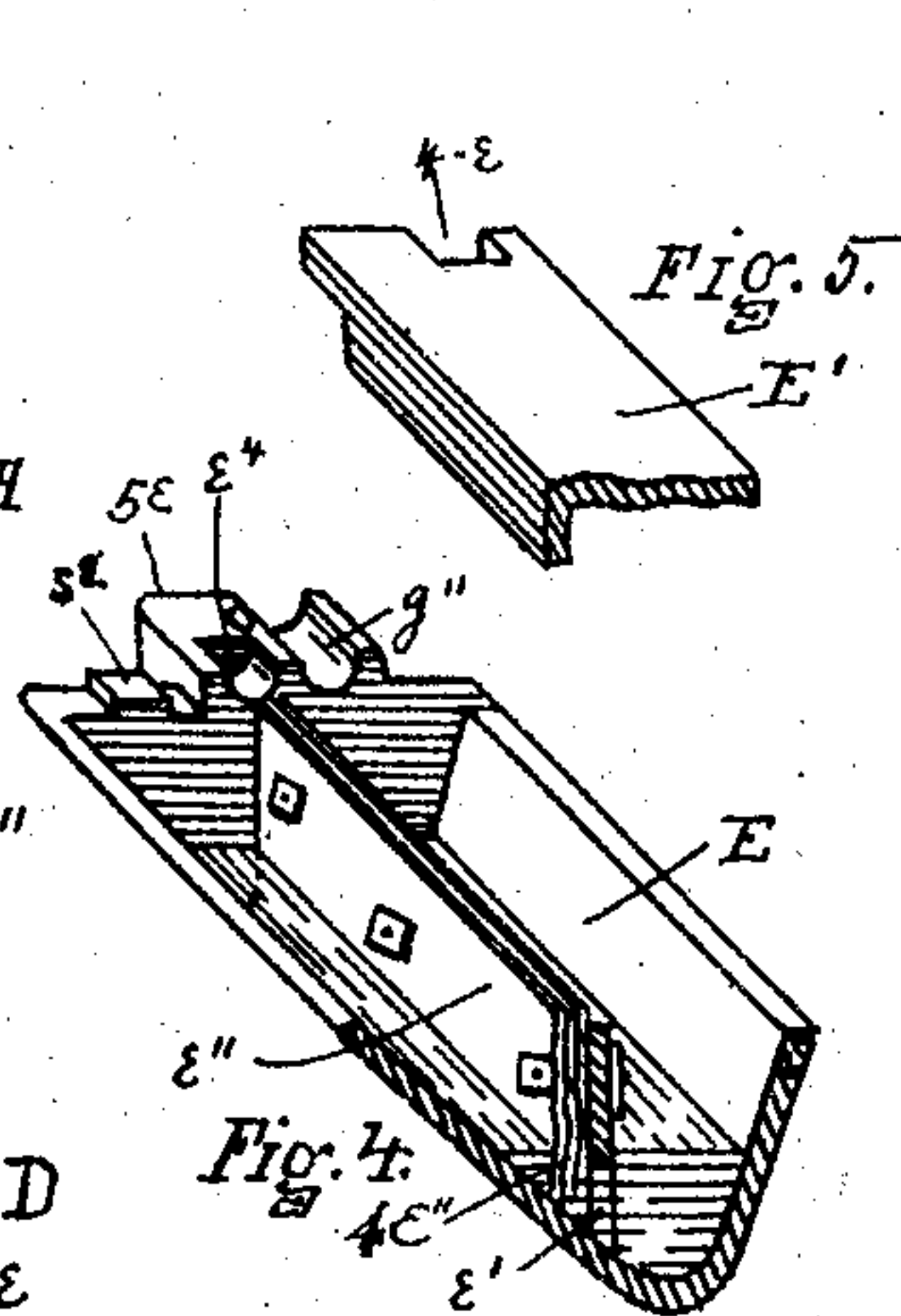
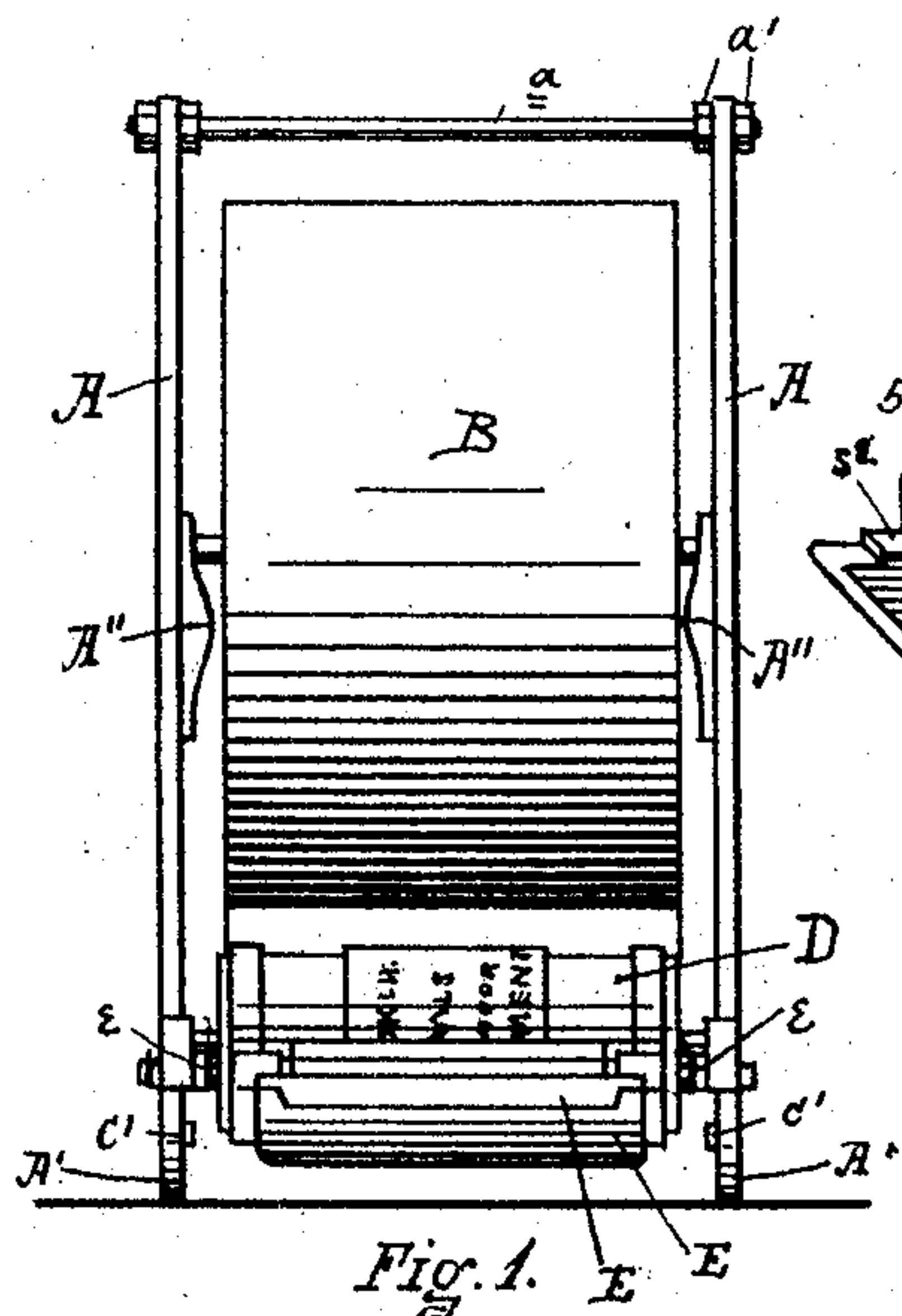


No. 778,433.

PATENTED DEC. 27, 1904.

F. G. WILLARD.
ROLL PAPER CUTTER AND PRINTER.

APPLICATION FILED DEC. 23, 1903.



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ROLL-PAPER CUTTER AND PRINTER.

SPECIFICATION forming part of Letters Patent No. 778,433, dated December 27, 1904.

Application filed December 23, 1903. Serial No. 186,354.

To all whom it may concern:

Be it known that I, FREDERICK G. WILLARD, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Roll-Paper Cutters and Printers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improved roll-paper cutter and printer; and I declare that the following is a full, clear, concise, and exact description thereof sufficient to enable one skilled in the art to make and use the same, reference being had to the accompanying drawings, in which like letters and numerals refer to like parts throughout.

Among the features of my device is the fact that the device is applicable to be supported on the top of the counter at any suitable point, or by the inversion of the side pieces may be suspended from a shelf or from underneath the counter.

Another feature is that after the printing is done the paper is rewound on the roll, the printing being done long enough before the paper is used to enable it to dry, and, further, the printing attachment may be removed altogether and the device used as a support for a roll of paper and a cutter of the same.

Other features of my device will appear from the following description, my invention consisting in the improved particular construction of different parts and the combination of those parts.

In the drawings, Figure 1 is a rear view of the device. Fig. 2 is a side view of the same with the type-cylinder removed. Fig. 3 is a side view in vertical section including the type-cylinder. Fig. 4 is a perspective view in section of the ink-vat and wick, while Fig. 5 is a like view of the cover therefor. Fig. 6 is a perspective view of certain rolls, which will be particularly referred to; and Fig. 7 is a longitudinal section view of one of said rolls. Fig. 8 is a perspective view of a portion of the type-cylinder, and Fig. 9 illustrates the manner in which the paper is supported on the rolls and passed therebetween and also

the general position of the different rollers as modified from the showing of Fig. 3.

Referring to the figures more in detail, A illustrate side frames which support various parts of the device. Across the top are secured rods *a a*, fastened in place by lock-nuts *a'*, so as to give the proper space between the vertical frames A. The side bars are provided with a base portion *A'*, giving the apparatus proper supporting-surface and is provided with slotted openings *a''* for a purpose hereinafter pointed out. The inner face of each side piece A is provided with a supporting-lug *A''*, which is shown to be recessed at each end, as shown at *a'''*, to receive the shaft which supports the paper-roll. This recess is provided in each end, because the side frames are inverted when the device is to be supported beneath a shelf or counter, for which purpose the portion *A'* is provided with lugs to receive screws or bolts, but which need not be particularly shown. When this inversion is made, the holes *1°* are used to support the transverse frame C hereinafter described. Between the ends of the supporting-lugs *A''* there is a rib which flares outward from each end to the middle, the purpose of which is to keep the paper-roll and its mounting in proper position between the frames and to provide the least friction-surface of the former on the latter. The reference-letter *A''* refers to the lug, but is directed particularly to the flaring rib.

B illustrates the roll of paper, which is supported on the shaft *b*, the ends of which are supported in the recess *a'''* of the lugs *A''*.

Near the base of the frames I mount the transverse frame-piece C, which is secured to the side frames by screws or bolts passing through openings *c* or otherwise. The inner face of the standard or frame A is provided with a small lug *c'*, Fig. 1, to hold the nut from turning when a bolt is used to secure the side frame and the transverse frame. The transverse frame is suitably provided with shoulders engaging the vertical frames A to hold the transverse frames in rigid engagement thereon, the shoulders being indicated at *c''* in Fig. 2. In the inner face of the trans-

verse frame is a recessed bearing D' , which supports the shaft d , which carries the type-cylinder D . It will be seen that this mounting is provided with an opening at one end, so that the type-cylinder may be removed and a different one inserted at any time and without disconnecting the side frames A . The type-cylinder is of suitable size and has upon its face proper arrangement of letters suitably mounted thereon, which may be done by gluing a rubber or metal printing-sheet or securing such a sheet in any other suitable manner or by any other proper way of securing type to the cylinder. Each end of the type-cylinder is provided with a rubber collar D'' , which provides suitable surface for the play thereon of the adjacent parts. At each end of the type-cylinder is a rubber gasket or collar d'' , which is provided to keep the type-cylinder in proper lateral position in the operation of the device. Alongside the type-cylinder I provide an ink-reservoir E , which is clamped to a rod e , which secures the proper space between the vertical frames A at the bottom of said frames. The rod e is provided with suitable lock-nuts to hold it and the ink-reservoir also in suitable position to the type-cylinder, the frame C having slots for such purpose. The reservoir is given the general outline shown in Fig. 4 and has vertically-disposed therein a rigid mounting e' , which supports the wick e'' by bolts or screws, as shown in Fig. 4. This wick is preferably made of a plurality of thicknesses of cotton cloth and extends from the liquid in the reservoir to the small roller e''' , which is pivotally mounted in the reservoir-frame in bearing e^4 . Adjacent to the roller e''' , which is preferably of metal and may be for convenience called a "feeding-roller," I pivotally mount the distributing-roller F on the shaft f , which is loosely supported by the frame of the ink-reservoir, the roller F being preferably of felt with a covering of sateen to take the ink from the feed-roller e''' . Adjacent to the roller F , I mount the inking-roller G on the shaft g , which is supported on rod e and is of suitable material to receive the ink from the distributing-roller F and deliver it to the face of the type on the type-cylinder D . This roller I preferably make of wound felt covered with sateen, which I find provides an admirable material for supplying the type. It is not essential that I should employ the roller F , since I can feed the ink direct from the feed-roller to the inking-roller, as shown in Fig. 9, in which case those two rollers are brought into contact, which, however, is not the case when the roller F is used. In order to get the proper adjustment between the roller e''' and the inking-roller G , I make the former of a metal tube and pass therethrough the shaft 1^e , which supports collars 2^e , which I make of suitable diameter to bring the surface of the roller e''' into the proper contact with the inking-roller G , the

purpose being fully accomplished when the tube e''' is carried loosely on collars 2^e , the diameter of which determines the degree of contact between the feed-roller and the inking-roller. The inking-roller G is made on a metal tube that slips on rod e , that passes through the end of the reservoir-frame at g'' . If a distributing-roller F is employed, the adjustment, as will be readily understood, is relative to that roller, it being the intent to provide means for regulating the supply of ink to the printing device by an adjustable mounting in the series through which such supply is made. It will also be clear that the members of such series may be given the form and construction best adapted to accomplish this result. The roller G forms a cover for that portion of the ink-reservoir, the outer portion being covered by a plate E' , suitably held in place by lugs on the end of the reservoir, as illustrated at 4^e and 5^e in Figs. 4 and 5. On the other side of the vertical frames and supported in the transverse frame I provide impression-roller H , mounted on a shaft h , which is mounted in a slot in frame C , as shown in Fig. 2. Between the ends of this impression-roller and a proper mounting I pass a tension, (illustrated by spring H'), and which has sufficient strength to hold the impression-roller in proper contact with the type-cylinder and at the same time allow sufficient freedom of the impression-roller for the proper operation of the machine. The shaft h in the right end of the impression-roller H is in the form of a screw-eye or other suitable means for turning the same. This is used to assist the sheet of paper up the back of the impression-roller between it and the type-cylinder. It is also used to turn the impression-roller H when printing sacks or loose sheets on the machine, which can be done by removing the roll of paper or by taking its end from the rollers H and I and passing the sacks down between the impression-roller and the type-cylinder. Above the roller H and slightly nearer to the vertical frame I mount roller I on the shaft i , which is supported in a groove in the transverse frame and is held under tension I' , which, however, is lighter than that of the roller H . The roller I is provided with a bushing in the end at the left side, so that the shaft i , which is in the form of a screw, can be easily removed with the fingers and the roller I taken from the machine altogether. This bushing and screw are placed at that end because the friction of the tension-ring on spring I' keeps the screw in the bushing in the turning of I . Fig. 6 illustrates the connection of the rollers H and I with the inking-roller G , the figure merely illustrating the spring connection between the former rollers and the fixed parts of the machine. The tension H' keeps the rollers H and D in proper contact and the latter properly against roller G . At this end of the transverse frame C , I mount the blade J ,

which is supported at each end within the lugs *j*, which are cast in the end of the transverse frames and which provides an edge on which the paper is torn. This blade *J* stands substantially vertical and at right angles to the line of paper from roller *I*, so as to bring the sheet of paper immediately against the cutting edge.

The assembling of these various parts and the operation of the device is best shown in Fig. 3. The roll of paper is mounted on its shaft and the whole slipped into the bearing *a'''* on the lug *A''*. The end of the paper is then passed downward, as shown by the inner arrow at the right hand in that figure, around the roller *H* and between it and the type-cylinder *D*, at which point it receives the impression of the type. It is then passed, as indicated by the arrows, around the roll of paper and downward again inside of the roller *I* and between that and the roller *H* and outward under the knife *J*, as shown. The purpose of placing the roller *I* near to the vertical frames is to give the end of the paper an upward tendency, so that it can be easily grasped and prevent the end which would naturally tend to curl on roller *H* from doing so, as it is inclined, especially when the roll *B* is small. As already indicated, the roller *H* must be kept close to the type-cylinder, playing on the collars *D''* thereon, so as to make suitable printing on the paper and to keep the type-cylinder in motion at all times. The roller *I* is mounted with a much looser tension, so as to give abundance of freedom in the paper as it passes around the rollers and at the same time keep it properly confined and in place and at the same time supply sufficient resistance to keep the roll of paper from turning when severing the paper across the cutting edge and to hold the outer sheet against the under sheet, causing the roll of paper to be under control at all times. For instance, if one end of the roll happens to be slightly farther from the inking-roller than the other end the paper will not come off evenly unless there is freedom in unrolling the paper. The roller *I* provides for this and at the same time keeps the paper in proper place. There are sometimes inequalities in rolls of paper, and it is essential to a successful device that such conditions should be met. The slight tension of *I'* permits roller *I* to move readily from the cylinder *D* and slackens the paper between the paper-roll and the roller *H*, and thus gives room for inequalities by permitting the slack paper to slip down and around roller *H* and up on the back surface of the paper-roll.

In case it is not desired to use the printing device on this construction the roller *D* may be removed and the paper passed directly between the rollers *H* and *I*, as shown in Fig. 2.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a roll-paper cutter and printer, frames, a paper-roll, a printing means, an inking device comprising a vat, a wick and feeding means from the wick to the printing means, in combination, substantially as shown. 70

2. In a roll-paper cutter and printer, vertical frames, journals therein for the support of a paper-roll, the said frames being reversible and the journals being compounded to support the roll in either position of the frame, a type-cylinder, an inking device adjacent thereto, an impression-roll slidingly mounted adjacent to the type-cylinder, tension means applied to the said impression-roll confining the same and the type-cylinder and the inking-roll of the inking device in operative contact, in combination, substantially as shown. 80

3. In a roll-paper cutter and printer, vertical frames provided with supporting-lugs, the said lugs comprising a journal-bearing at each end and a rib therebetween, the said rib extending laterally from the frames and providing a contact-point for a paper-roll, a paper-roll mounted in the frames, a type-cylinder and an inking device mounted independent of the paper-roll, an impression-roller mounted in adjustable contact with the type-cylinder and holding the latter in adjustable contact with the inking means, in combination, substantially as described. 95

4. In a paper-roll printer and cutter, frames, a paper-roll pivotally supported therein, a type-cylinder pivotally supported therein independent of the paper-roll and its mounting, an inking device, an impression-roll, tension means applied to the said roll and to the fixed portions of the machine holding the tension-roll and the type-cylinder and the inking device in operative contact, a removable friction-roll slidingly mounted passing the paper from the paper-roll to the impression-roller and permitting free movement of the paper in the printing and unwinding of the same, in combination, substantially as described. 100

5. In a roll-paper cutter and printer, frames, a paper-roll loosely mounted thereon, in combination with an inking device, the said device comprising an ink-reservoir, a wick and rolls adjustably mounted to receive the ink from the wick and to properly feed the same to the type-cylinder, said inking device being adjustably mounted relative to said cylinder, substantially as described. 110

6. In a roll-paper cutter and printer, a frame, a paper-roll mounted thereon, a printing device supported therein, rolls for the interpassing of the paper therebetween and to the printing means each of said rolls being mounted under tension to control the feed of the paper, in combination, substantially as shown. 125

7. In a roll-paper cutter and printer, a reversible frame, means for mounting thereon a paper-roll, a paper-roll, printing means, rollers loosely mounted and provided for feeding the paper therebetween and under separate ten- 130

sion applied to each roller to a cutting edge, a cutting edge, substantially as shown.

8. In a roll-paper cutter and printer comprising a frame, the combination of a printing means and rollers adjustably mounted to supply ink thereto and rollers provided to carry the surface to be printed to and from the printing means, and means for severing the printed article, substantially as described.

9. In a roll-paper cutter and printer, reversible frames, a paper-roll mounted thereon, printing means, adjustable ink-feeding means adjacent thereto, and rolls yieldingly mounted feeding the paper to and from the printing means and regulating the pressure of the printing means against the ink-feeding means, in combination, substantially as described.

10. In a roll-paper cutter and printer, a frame, a paper-roll, a printing means, means for supplying ink to the latter, and rollers yieldingly mounted controlling the pressure between themselves, the printing device and the inking device, in combination, substantially as described.

11. In a roll-paper cutter and printer, frame-pieces provided with supporting-lugs which comprise a plurality of journal-bearings with a rib extending laterally from the frame and providing contact-points for a paper-roll, a paper-roll, printing means, inking means, means mounted in yielding contact with the printing means controlling the tension of the

paper passing between the controlling means and the printing device, in combination, substantially as shown.

12. In a roll-paper cutter and printer, a frame, a paper-roll mounted thereon, printing means and rollers provided with tension for feeding the paper to and from the printing means and conveying the same to a severing edge, and a severing edge, in combination, substantially as shown.

13. In a roll-paper cutter and printer, a frame, a paper-roll mounted thereon, a printing means, ink-supplying means, and rolls provided with tension for controlling the paper in its movement from the paper-roll to a severing edge, in combination, substantially as shown.

14. In a roll-paper cutter and printer, frames, a paper-roll, a printing means, an inking device comprising a vat, a wick and feeding means between the wick and the printing means, the said feeding means comprising rolls adjustable in relation to the vat and the printing means, in combination, substantially as shown.

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

FREDERICK G. WILLARD.

Witnesses:

HARRY E. GOLDEN,
E. T. DE GIORGI.