

No. 742,807.

PATENTED OCT. 27, 1903.

O. E. THARP.

WALL PAPER PASTING AND TRIMMING MACHINE.

APPLICATION FILED NOV. 17, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

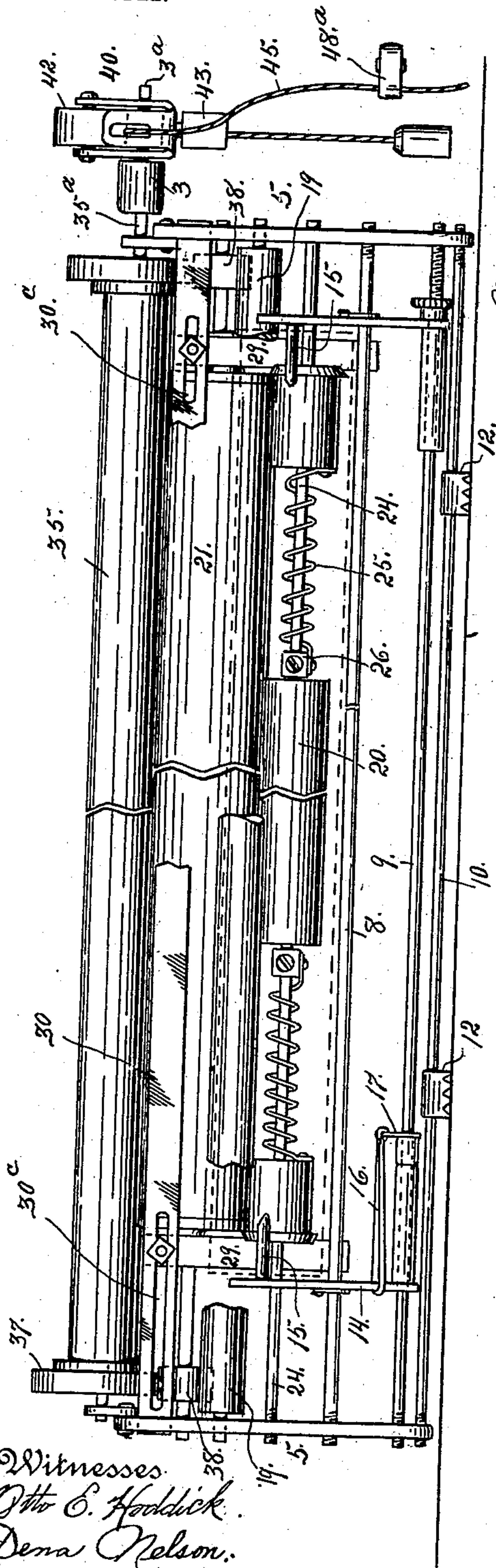


Fig. 1.

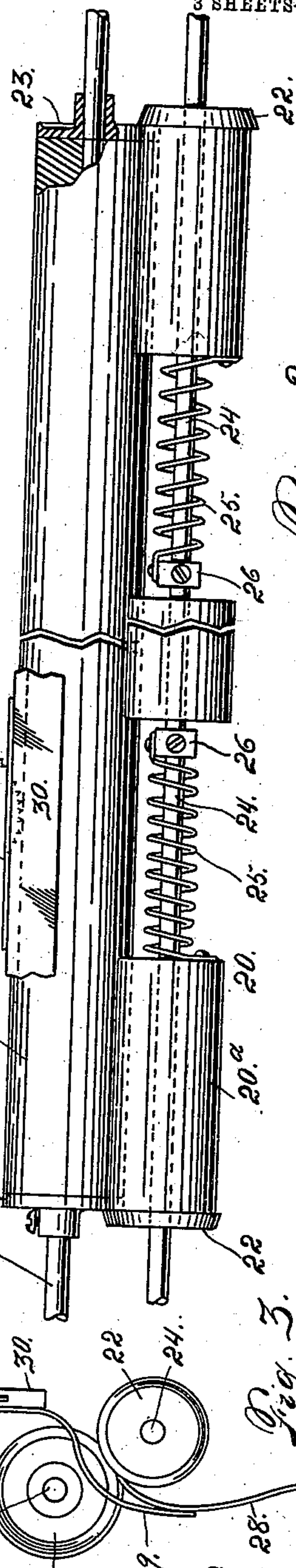
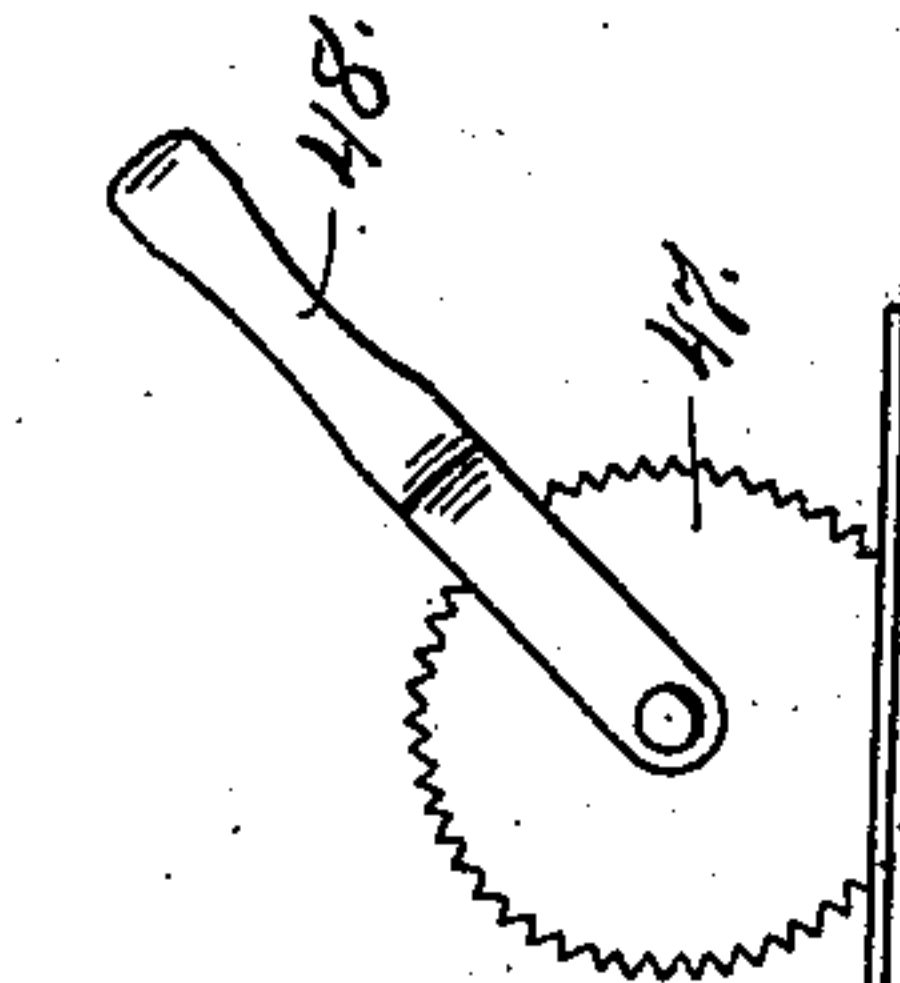


Fig. 2.

Fig. 3.

Witnesses
Otto C. Haddock.
Dena Nelson.

Inventor
Orrin E. Tharp.
BY *[Signature]*
Attorney

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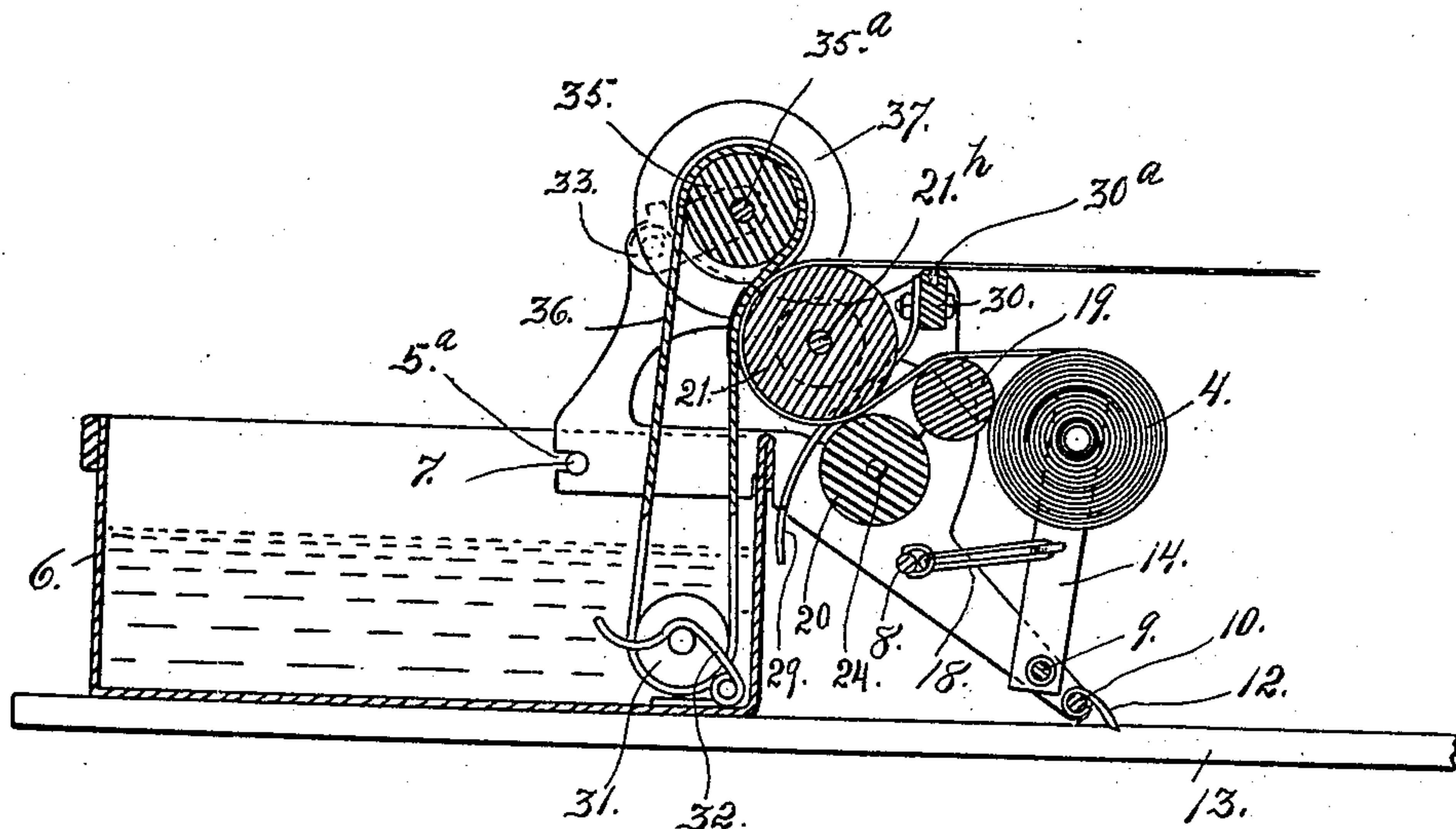


Fig. 4.

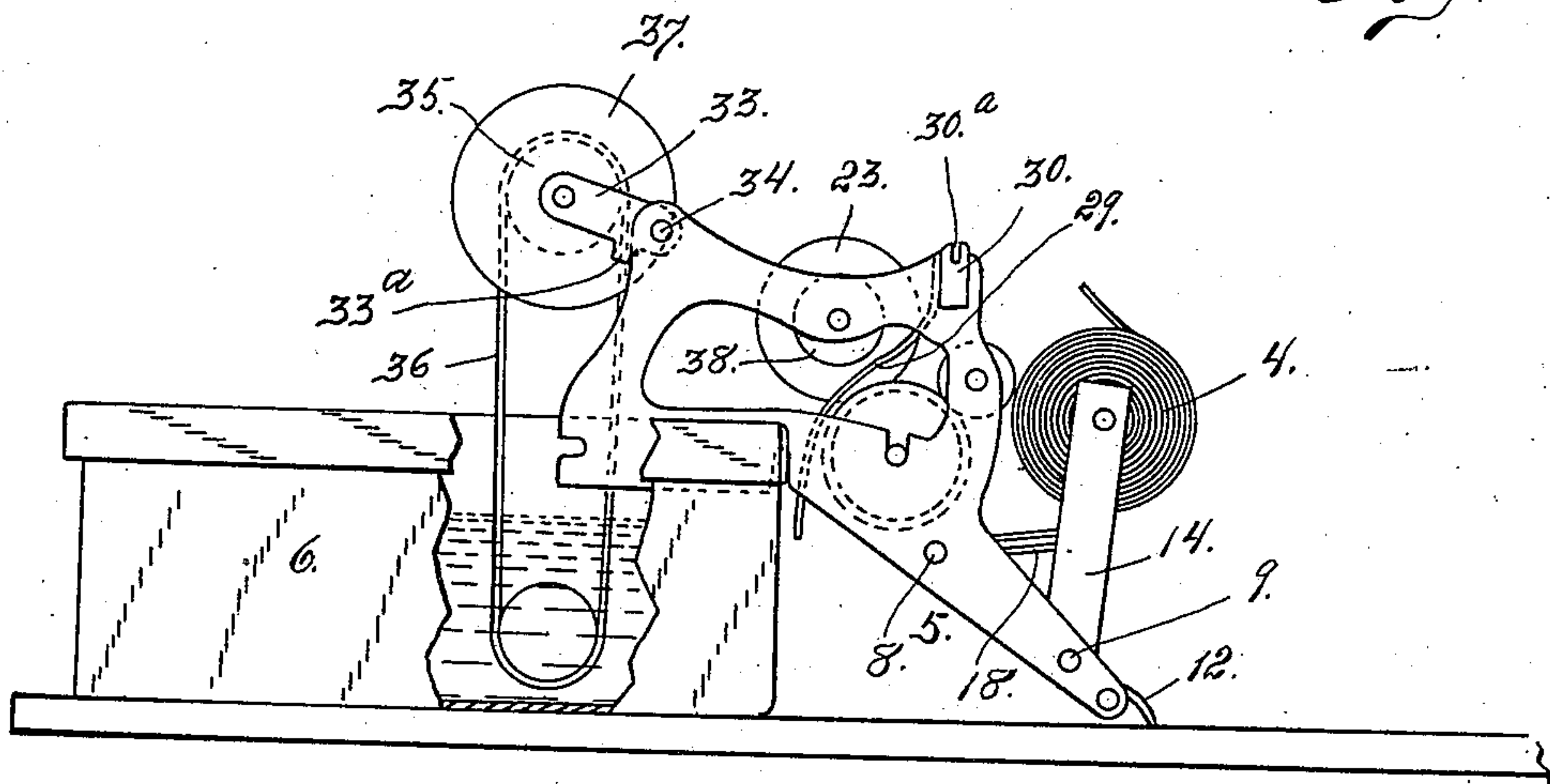


Fig. 5.

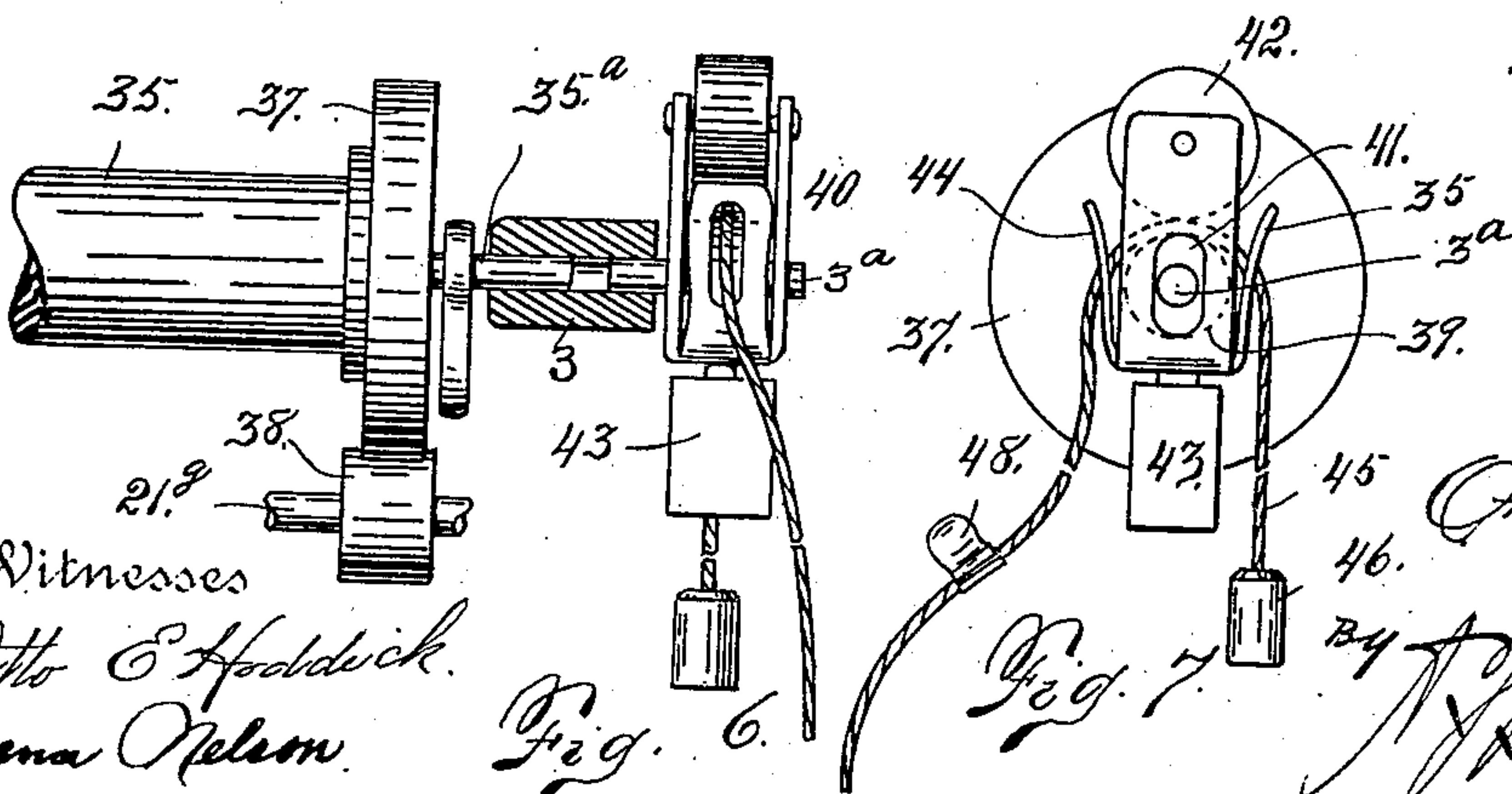


Fig. 6.

Fig. 7.

Orrin C. Tharp.
Inventor

Attorney

Witnesses
Otto E. Holdwick.
Dena Nelson.

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3 SHEETS—SHEET 3.

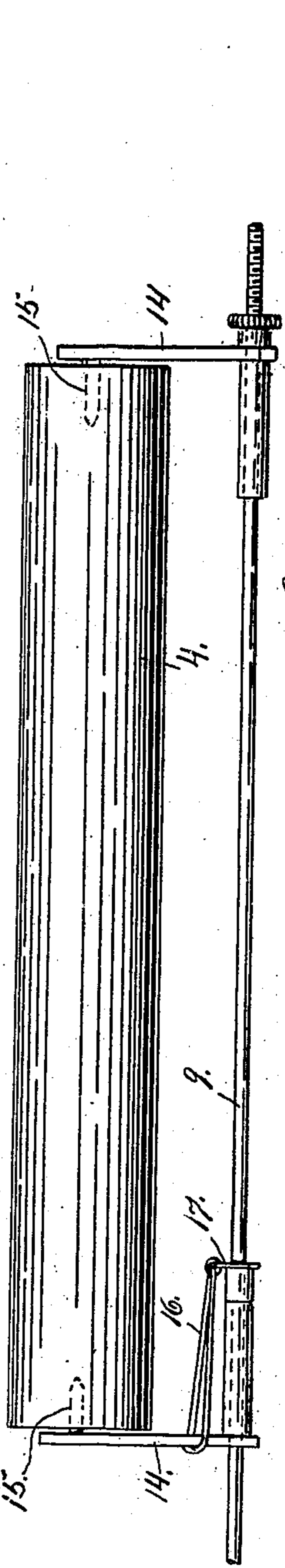


Fig. 8.

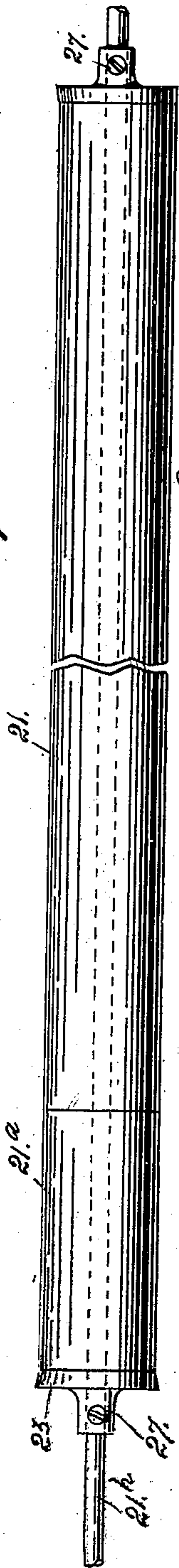


Fig. 9.

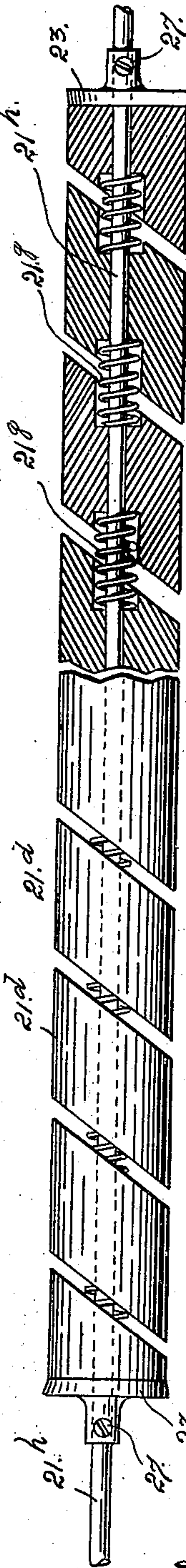


Fig. 10.

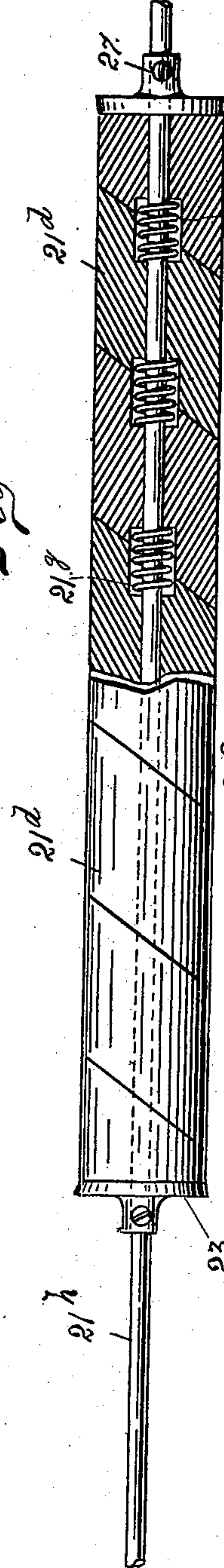


Fig. 11.

Witnesses
Otto E. Hordlick
Dena Nelson.

Inventor
Orrin E. Tharp.
By *[Signature]*
Attorney

UNITED STATES PATENT OFFICE.

ORRIN E. THARP, OF DENVER, COLORADO.

WALL-PAPER PASTING AND TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 742,807, dated October 27, 1903.

Application filed November 17, 1902. Serial No. 131,660. (No model)

To all whom it may concern:

Be it known that I, ORRIN E. THARP, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Wall-Paper Pasting and Trimming Machines; and I 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in machines for applying the paste to wall-paper or similar material and simultaneously trimming the same.

The improvement also includes means for automatically indicating any predetermined length of strip as the strips are drawn from the roll of paper and passed through the machine. The cutting-rolls are also adjustable endwise to vary their length to correspond with paper of varying width. The roll of paper is mounted in front of the machine, and the strip of paper drawn therefrom is first passed over a tension-roller, thence between the trimming-rolls, thence up over the main trimming-roll, and thence forwardly across a grooved gage-plate, where the strips of predetermined length are cut off by a roller-cutter which follows the groove of the gage-plate. As the paper is drawn upwardly over the main cutting-roll or platen it is brought into contact with an endless paste-belt mounted on rollers, one being located above the other, the lower roller being in the bottom of a tank containing the paste, while the upper roller is above the tank. All of the rolls or rollers are journaled in a suitable framework composed of the end members, except the paste-belt rollers. The lower one of these, as shown in the drawings, is held down by a couple of springs located in the bottom of the paste-tank, while the upper roller is journaled in two arms movably mounted on the end frames. The device for indicating the predetermined length of strip is mounted on one extremity of the upper paste-belt roll.

Having briefly outlined my improved construction, as well as the various functions it is intended to perform, I will proceed to describe the same in detail, reference being made to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a front view of my improved machine, parts being broken away and the roll of paper omitted. Fig. 2 is a detail view illustrating the two cooperating cutting-rolls. A fragment of the gage-plate is shown in this view, together with the cooperating roller-cutter. Fig. 3 is an end view of the construction shown in Fig. 2. Fig. 4 is a section taken on the line 4-4, Fig. 1, showing the parts in operative relation. Fig. 5 is an end view of the apparatus, showing the upper paste-belt roller thrown back from the operative position. Fig. 6 is a fragmentary front view, and Fig. 7 an end view, of the upper paste-belt roll shown in connection with the device for automatically indicating the length of the strip as predetermined. Fig. 8 shows the roll of paper mounted in position on its standards, one of which is adjustable and spring-held to accommodate rolls carrying different widths of paper. Fig. 9 is a detail view of the main trimming-roll or platen, with an auxiliary extension-roll part applied. Fig. 10 shows an endwise-expansion construction for this roll, the tension of the springs having acted to expand the roll endwise to the length shown in Fig. 9. Fig. 11 shows the same construction with the roll shortened and the interposed springs compressed or placed under tension.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate each of two end frames, adapted to be connected with a paste-containing tank 6 in any suitable manner. As shown in the drawings, (see Fig. 4,) the rear part of each frame is slotted, as shown at 5^a, to engage a pin or stud 7, mounted on the end of the tank at some distance from its front wall. These frame members extend thence forwardly over the upper edge of the front wall of the tank and thence downwardly, their forward extremities resting on the table or other surface on which the apparatus is placed. As shown in the drawings, the two frame members are connected by rods, (design-

nated 8, 9, and 10, respectively.) Upon the rod 10, which occupies the foremost and lowest position, are mounted a couple of dogs 12, which engage the base 13 and overcome any tendency of the machine to move forward during the operation of drawing the paper forwardly between the trimming-rolls. The supply-roll of paper 4 is mounted on two standards 14, having inwardly-projecting studs 15, which enter the central opening in the supply-roll ends. One of the standards 14 is slidably mounted on the rod 9 and is connected with a spring or elastic band 16, attached to a stop 17, fast on the rod. The device 16 has sufficient tension to hold the standard in operative relation with the supply-roll end. The object of this construction is to adjust the roll-holding standard to accommodate supply-rolls carrying paper of varying widths. The standards 14 are pivotally connected on the frame and are connected by elastic devices or springs 18 with the rearwardly-located rod 8, whereby the supply-roll is held in constant engagement with a tension-roller 19 as the paper is unwound and the supply-roll diminishes in diameter. The tension-roller 19 is journaled in the frame. In the rear of the tension-roller are located the two trimming-rollers (designated 20 and 21, respectively) between which the paper is drawn as it leaves the tension-roll. These rolls 20 and 21 are provided at both ends with cooperating cutting-disks 22 and 23, which are slightly beveled to form cutting edges. These disks trim the edges of the paper as the latter is drawn between the rollers 20 and 21. The roll 20 is divided and provided with two members 20^a, which are slidable on the spindle 24. As shown in the drawings, the two end parts of the roll are adjustable, and each is connected with one extremity of a coil-spring 25, the other extremity of the spring being connected with a stop 26, adjustable on the spindle by means of a set-screw for regulating the tension of the spring. The tension of the three springs is so regulated that they have a tendency to draw the roll members 20^a inwardly on the spindle, so that the cutting-disks 22 thereon shall engage the cooperating disks 23 of the roll 21. It will be observed that the disks 22 and 23 slightly overlap each other. Hence when the length of the roll 21 is properly regulated the springs 25 draw the roll members 20^a inwardly until their cutting-disks 22 engage the cutting-disk 23, the tension of the springs being sufficient to hold the cutting-disks in operative relation. The roll 21 may have an extension-piece 21^a, placed upon the spindle between the cutting-disk 23 and the body of the roll, the part 21^a being slidable on the spindle. The position of the disks 23 on the roll-spindle may be regulated by set-screws 27.

In Figs. 10 and 11 another form of construction is shown for regulating the length of the roll. In this form of construction the roll is designated 21^c and is composed of a number

of parts 21^d, which are movable on the roll-spindle 21^h. Between these parts 21^d are located coil-springs 21^g, which are normally under sufficient tension to cause the members 21^d to separate when either of the cutting-disks is loosened for the purpose. In use the cutting-disk is moved on the spindle to regulate the length of the roll and fastened and the springs 21^g expand to form spaces between the members 21^d. (See Fig. 10.) The trimmings 28 (see Fig. 3) cut from the paper are guided downwardly by curved metal strips 29, located at the ends of the roll 21 and adjustably mounted on the gage-plate 30, whereby they may be regulated to correspond with the length of the rolls 20 and 21. As shown in the drawings, the gage-plate is slotted longitudinally, as shown at 30^c. The strips 29 are fastened to the said plate by passing screws or bolts through an opening formed in the strip and through the slot 30^c. The bolt is fastened by means of a nut, whereby it is held in any desired position of adjustment. When it is not desired to trim the paper, these parts 29 may be moved outwardly on the gage-plate, so that they may not interfere with drawing the paper through the machine.

In the bottom of the paste-carrying tank 7 is located a roll 31, which, as shown in Fig. 4, is held down by springs 32, attached to the tank and passing over the spindle extremities of the roll. This roll may, however, be loose and hold the bolt in place by gravity. (See Fig. 5.) It is thought that the springs may be preferable, since they permit the using of a roll of much less weight than is required where the roll is placed loosely in the tank for the purpose of maintaining the belt at the proper tension. Journaled in arms 33, pivotally connected with the frame members, as shown at 34, is a roll 35, which cooperates with the roll 31 and supports the belt 36, which moves through a quantity of paste in the tank. The arms 33 are provided with short lugs 33^a, which limit the movement of the arms 33 when the roll 35 is thrown rearwardly away from the roll 31 to disengage the belt 36 from the roll 21. (See Fig. 1.) The roll 35 is provided at each extremity with a disk 37 of larger diameter than the roll. Each of these disks engages a small pulley 38, mounted on the extremity of the spindle 21^h belonging to the roll 21.

On one extremity of the spindle 35^a of the roll 35, outside of the disk 37, is mounted a cylindrical piece of wood 3, provided with an opening which fits over the protruding end of the spindle 35^a. In this part 3 is inserted a short spindle part 3^a, upon which is made fast a small pulley 39. The parts 3 and 3^a are arranged to be disconnected from the spindle extremity for convenience in assembling the mechanism. A bifurcated frame or yoke 40 straddles the pulley 39 and is provided with vertically-elongated openings through which the spindle 3^a passes. Jour-

naled in the top of this frame is a pulley 42. The gravity of the frame normally holds the face of the pulley 42 in engagement with the face of the pulley 39, and to increase this pressure the lower extremity of the frame is provided with a weight 43. The frame 40 is provided with outwardly-projecting arms 44, slotted to receive a cord 45, to one extremity of which is attached a weight 46. This cord is drawn through between the pulleys 39 and 42, and when the paper is pulled forwardly over the roll 21 (see Fig. 4) the pulley 39 is moved to allow the cord under the influence of its weight to move to indicate the length of the strip of paper, it being assumed that the weight is at its upward limit of movement when the operation begins. The length of the strip of paper is determined by measuring the first strip and making a mark thereon at the proper point. The strip is then wound on the roll 4 and drawn through the machine until the mark indicating the required length reaches the gage-plate 30, when the strip is cut off by the use of the disk cutter 47, journaled on a handle 48, the cutter following the groove 30^a of the plate. While the strip has been passing through the machine the weight 46 has moved downwardly a certain distance. A small clasp 48^a is then attached to the cord in front as close to the roller 31 as possible. The cord is then pulled forwardly between the pulleys 39 and 42 until the weight 46 is raised to its upward limit of movement. The paper is again drawn through the machine until the cord has passed rearwardly between the pulleys far enough to bring the clasp 48 to its upward limit of movement, when the operator will know that the strip of paper in front of the gage-plate is of the required length. The strip is then cut off and the operation repeated as long as the strips required are of uniform length. Every time the length of the strip is changed the first strip or length is measured and marked, as aforesaid, after which the measuring is automatic, as will be readily understood.

From the foregoing description the use and operation of my improved machine will be readily understood. The paper is first fed from the roll 4 over the tension-roller 19 between the rolls 20 and 21 and then drawn upwardly between the belt 36 and the roll 21, and thence over the latter and across the gage-plate 30 at the top. The forward pull of the paper operates the rolls, and the paper is brought into contact with the paste on the belt, which is traveling through the paste during the operation of the machine.

Having thus described my invention, what I claim is—

1. In a wall-paper-trimming machine, the combination with a suitable frame, of standards pivotally mounted on the frame for holding the paper-supply roll, a tension-roll adjacent the paper-supply roll, and elastic means connected with the standards for holding the

paper-supply roll constantly against the tension-roll as the paper unwinds from the supply-roll.

2. The combination with a suitable frame provided with a transverse rod, of two standards pivotally mounted on said rod for supporting the paper-supply roll, one of the standards being slidable longitudinally on the rod and yieldingly retained to accommodate rolls of paper of varying widths, a tension-roll adjacent the paper-supply roll, and elastic means connected with the standards for holding the paper-supply roll constantly against the tension-roll as the paper unwinds from the supply-roll.

3. In a wall-paper-trimming machine, the combination with the trimming-rolls, of a gage-plate extending parallel with the rolls and having a groove in its upper edge, and parts adjustably mounted on the gage-plate adjacent the ends of the trimming-rolls for guiding the trimmings or selvage downwardly.

4. In a wall-paper-trimming machine, the combination with coöperating trimming-rolls, of a gage-plate extending parallel with the rolls, said plate having a groove in its upper edge and provided with longitudinal slots, and parts mounted on the gage-plate adjacent the ends of the trimming-rolls for guiding the trimmings or selvage downwardly, and fastening devices passed through the said parts and engaging the longitudinal slots of the gage-plate, whereby the said parts are adjustable on the plate.

5. In a paper-trimming machine, the combination with a suitable frame, of two coöperating trimming-rolls journaled therein and provided at their extremities with overlapping cutting-disks for trimming the edges of the paper as it is drawn through the machine, parts adjustably mounted on the frame adjacent the ends of the rolls for guiding the trimmings downwardly, said parts being adjustably mounted, and a gage-plate extending parallel with the rolls for the purpose set forth.

6. The combination of two coöperating trimming-rolls having overlapping coöperating cutting-disks at their ends, one of the rolls being divided, having a space between its members, the two end members being slidable on the roll-spindle and being spring-held to cause their disks to engage the disks of the coöperating rolls, a gage-plate extending parallel with the trimming-rolls and having a groove in its upper edge, and parts adjustably mounted on the gage-plate and located adjacent the ends of the rolls for guiding the trimmings downwardly.

7. As an improved article of manufacture, an endwise-expansible trimming-roll for use in a paper-trimming machine and consisting of members having parallel inclined opposing faces.

8. An endwise-expansible trimming-roll having cutting-disks at its extremities, said

roll being composed of a spindle and a number of members slidable freely on the spindle and having parallel inclined opposing faces, springs interposed between the said members and under tension to expand the roll, one of the cutting-disks being adjustable longitudinally on the spindle for the purpose set forth.

9. The combination with means for holding a roll of paper in place, of two cooperating trimming-rolls and an endless paste-applying belt suitably mounted adjacent one of the trimming-rolls, and a paste-containing receptacle through which the belt passes.

10. The combination with a paste-containing tank and a suitable frame connected therewith, of a roll located in the tank, another roll mounted above the tank, an endless paste-applying belt mounted on said rolls, and cooperating trimming-rolls conveniently located to the end that as the paper is drawn around one of these rolls, it is brought into contact with the said belt.

11. In a wall-paper pasting and trimming machine, the combination with a paste-containing tank, and a frame connected therewith, of means mounted on the frame for supporting a paper-supply roll, two cooperating trimming-rolls adjacent the tension-roll, an endless paste-applying belt adjacent the trimming-rolls, and a gage-plate extending parallel with the rolls and having a groove in its upper edge, substantially as described.

12. The combination in a paper pasting and trimming mechanism, of an automatically-operated device for measuring predetermined strip lengths.

13. In paper pasting and trimming mechanism, the combination of cooperating cutting-rolls, and an endless paste-applying belt having a relatively slow movement.

14. In a paste-applying and trimming machine, the combination of cooperating trimming-rolls, an endless paste-applying belt, a roll over which the paste-belt passes, and a

suitable connection between the paste-belt roll and one of the trimming-rolls, whereby the paste-belt roll has a relatively slow movement.

15. The combination of a paste-belt roll, trimming-rolls conveniently located with reference to the belt, and an automatically-operated measuring device connected with one of the rolls.

16. The combination of trimming-rolls, a paste-belt roll, an endless belt passing around said roll, a relatively large disk mounted on the belt-roll, a relatively small pulley mounted on one of the trimming-rolls and engaged by the disk, the arrangement being such that the belt-roll is operated from the trimming-roll and therefore has a relatively slow movement.

17. The combination of trimming-rolls, a roll operated from one of the trimming-rolls and having a relatively slow movement, a pair of pulleys mounted on the slowly-moving roll, and a weighted cord passing between said pulleys, and a stop to limit the downward movement of the cord.

18. The combination of trimming-rolls operated by pulling the paper through the machine, a paste-belt roll operated from one of the trimming-rolls and having a relatively slow movement, a pulley mounted on the protruding spindle of the last-named roll, a frame slotted to receive the spindle extremity, a pulley mounted in said frame above the first-named pulley, and adapted to engage the same, the said frame being weighted below the roll-spindle, and a cord passing between the pulleys and weighted at one extremity, and a stop for limiting the movement of the cord between the pulleys for the purpose set forth.

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

ORRIN E. THARP.

Witnesses:

DENA NELSON,
A. J. O'BRIEN.