

(No Model.)

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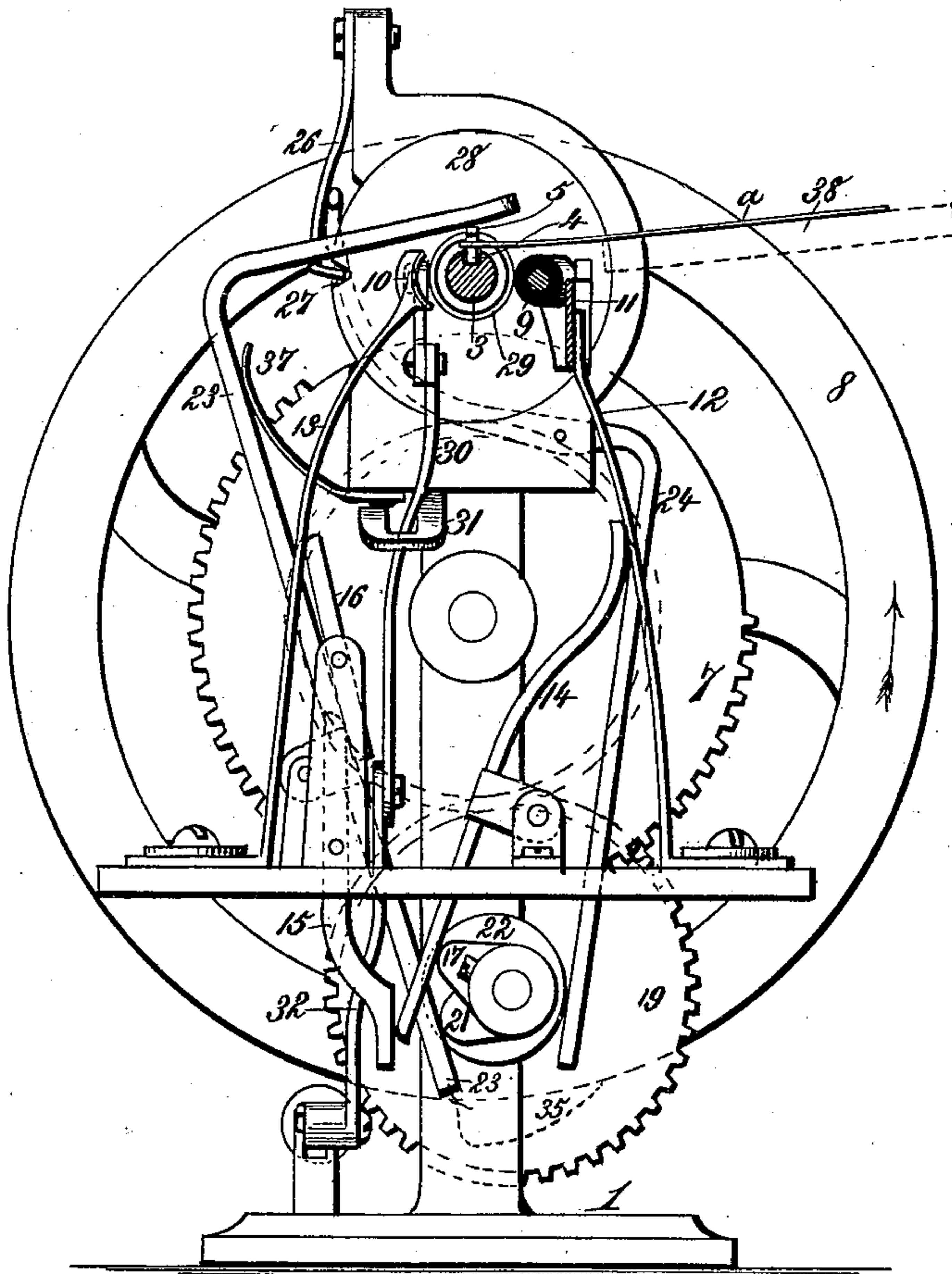
R. W. THURMAN.

MACHINE FOR MAKING MOUTH PIECES OR HOLDERS FOR CIGARS,
CIGARETTES, &c.

No. 400,806.

Patented Apr. 2, 1889.

Fig. 1.



Witnesses.
Robert Corbett.
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Robert W. Thurman
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(No Model.)

3 Sheets—Sheet 2.

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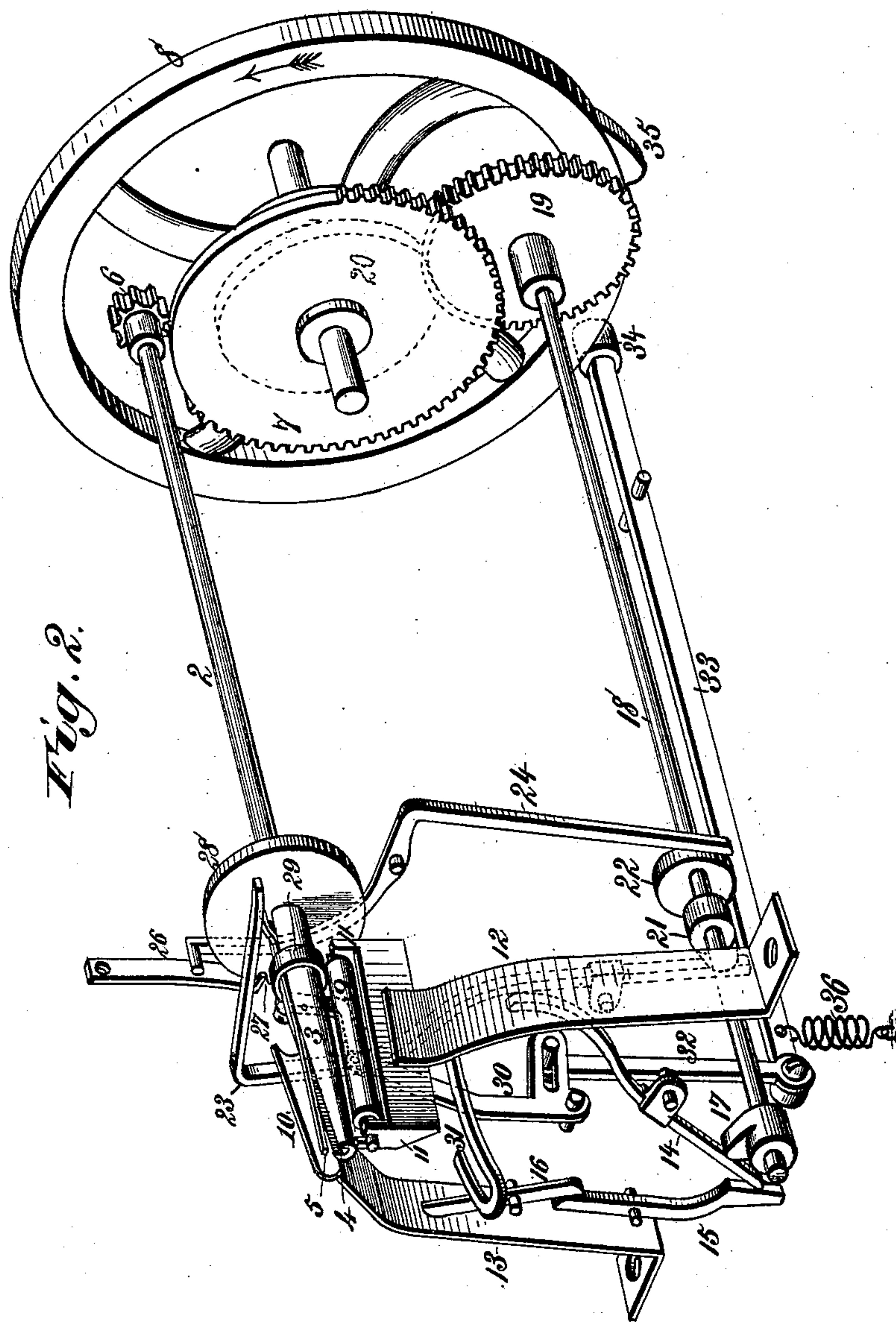


Fig. 2.

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3 Sheets—Sheet 3.

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Fig. 3.

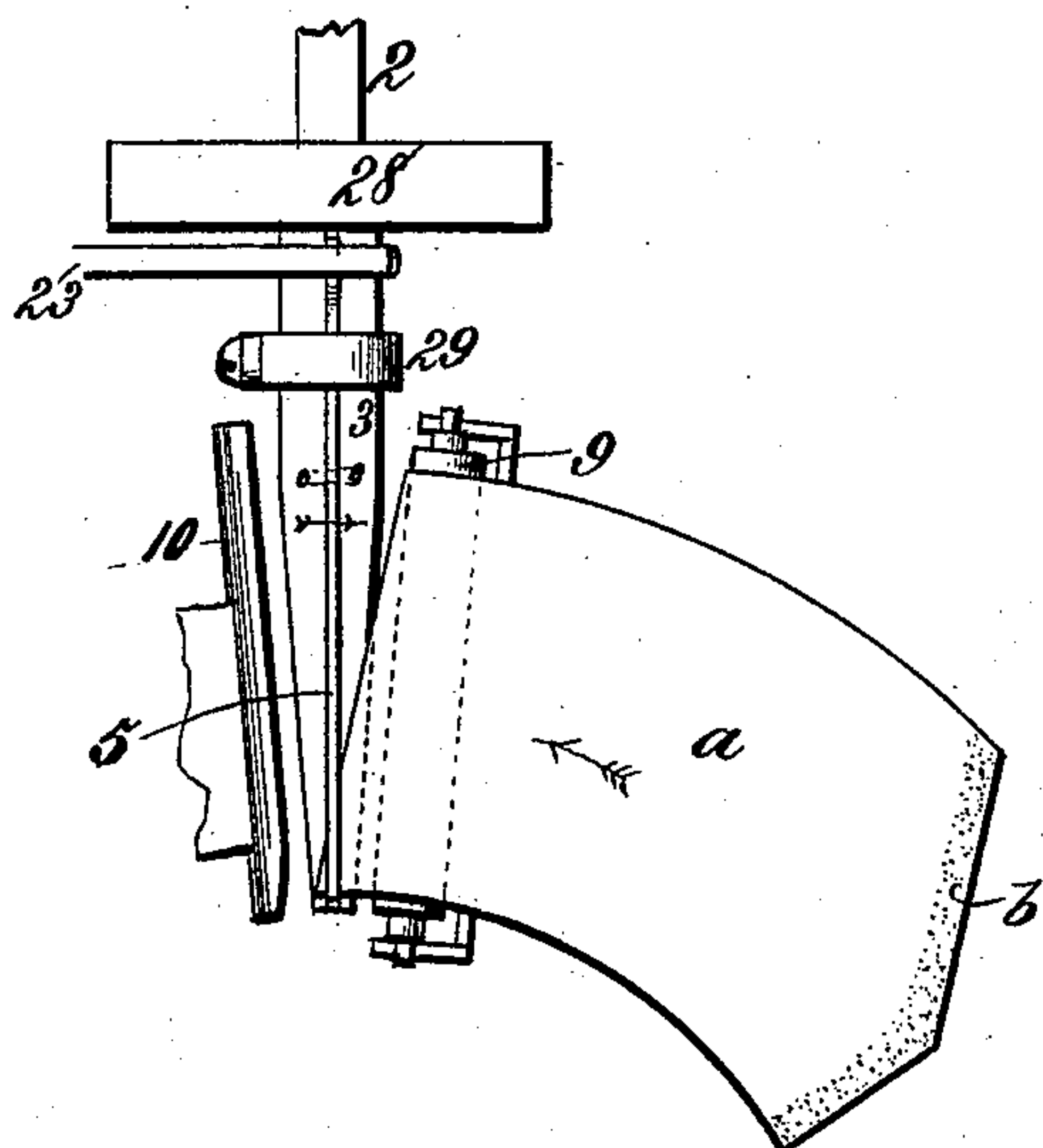


Fig. 4.

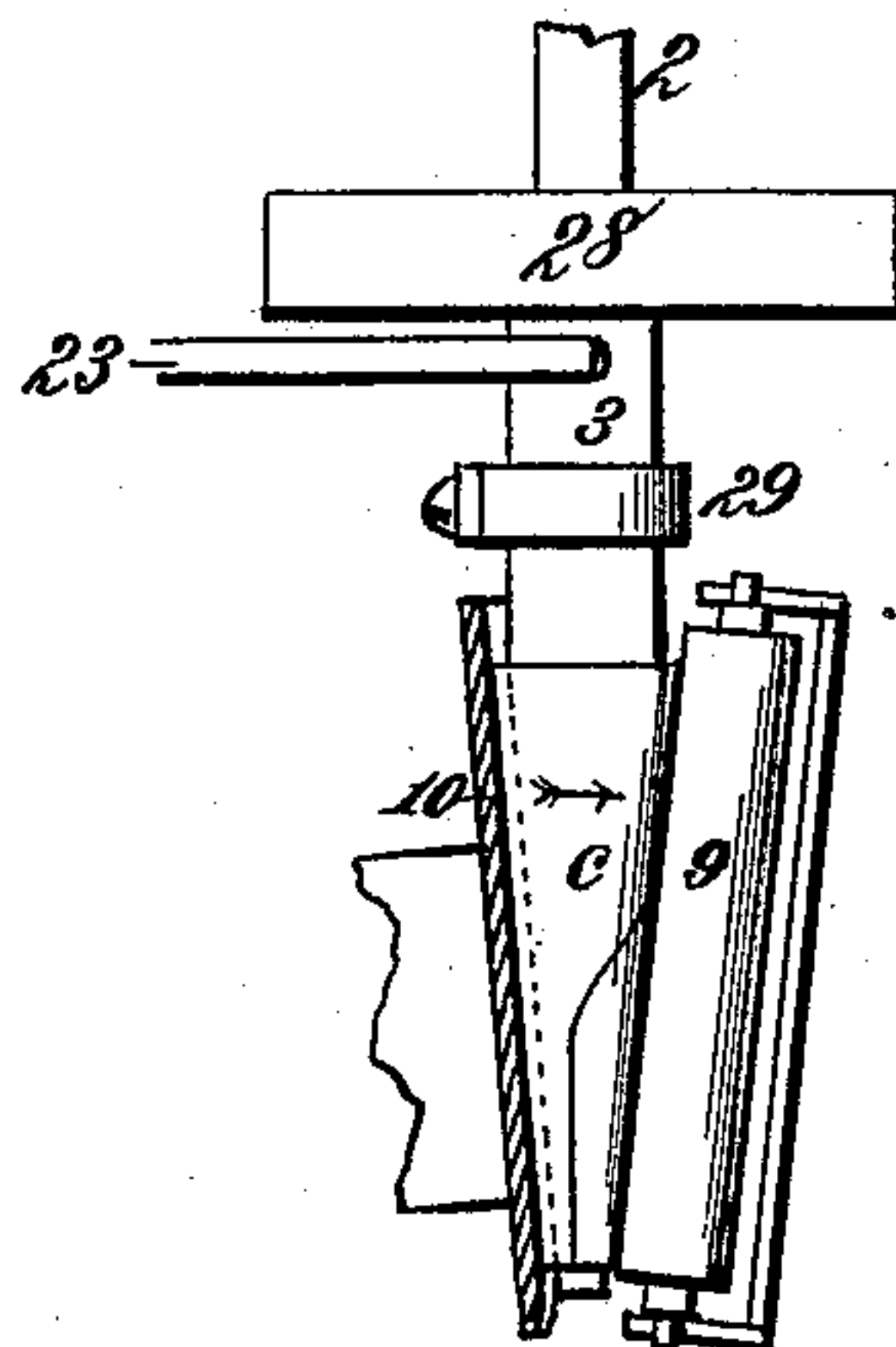


Fig. 3^a.

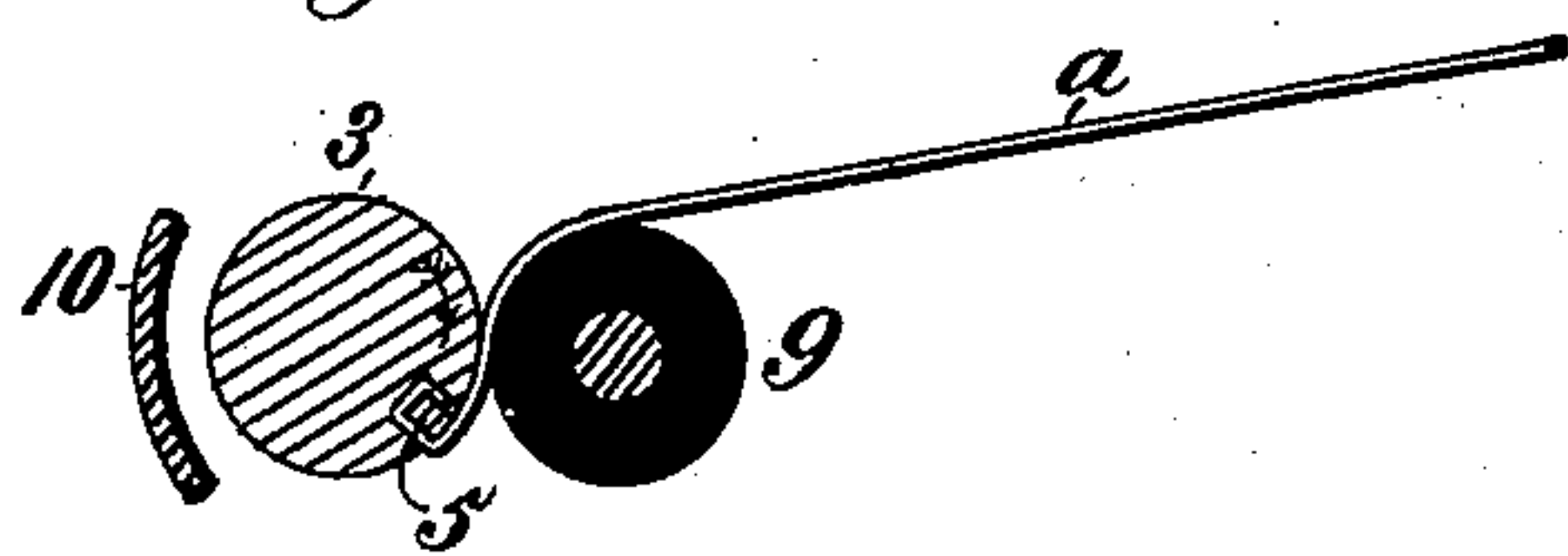


Fig. 4^a.

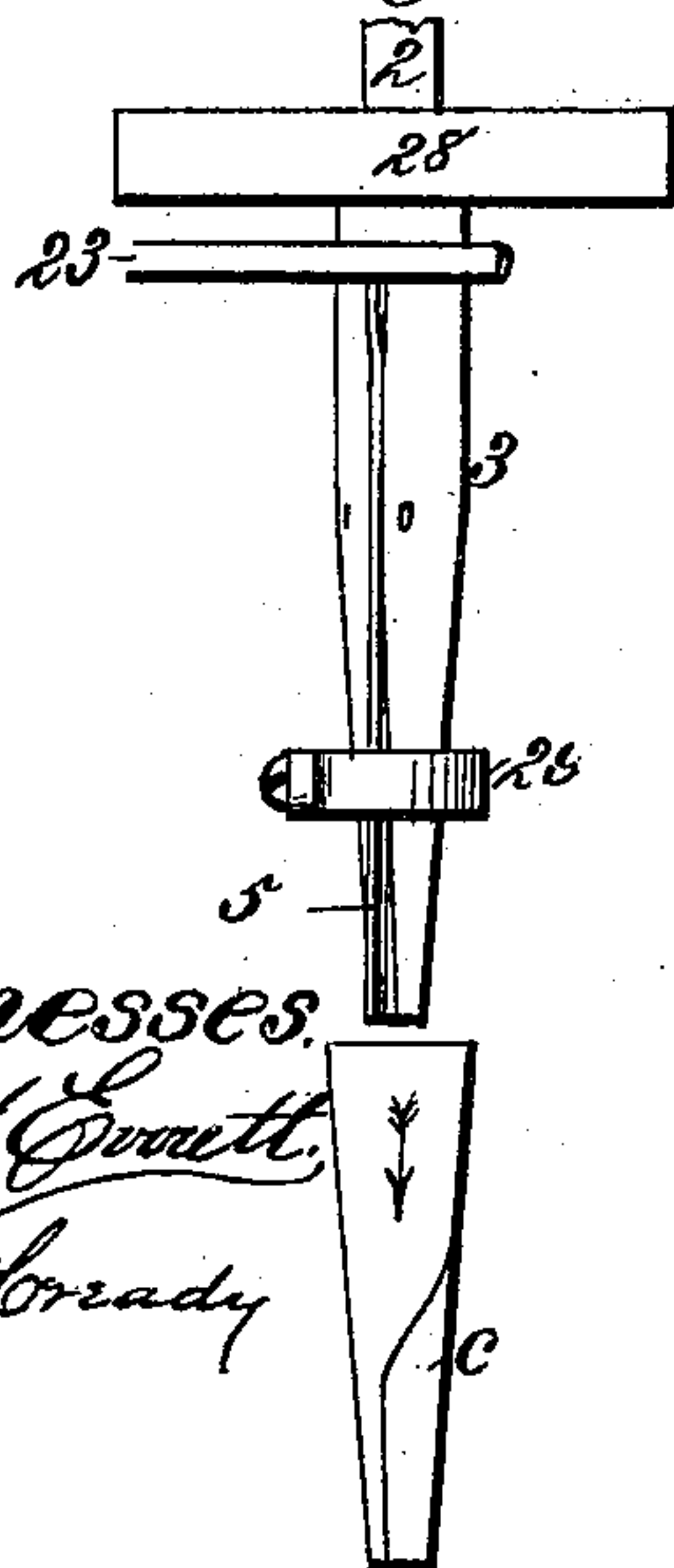
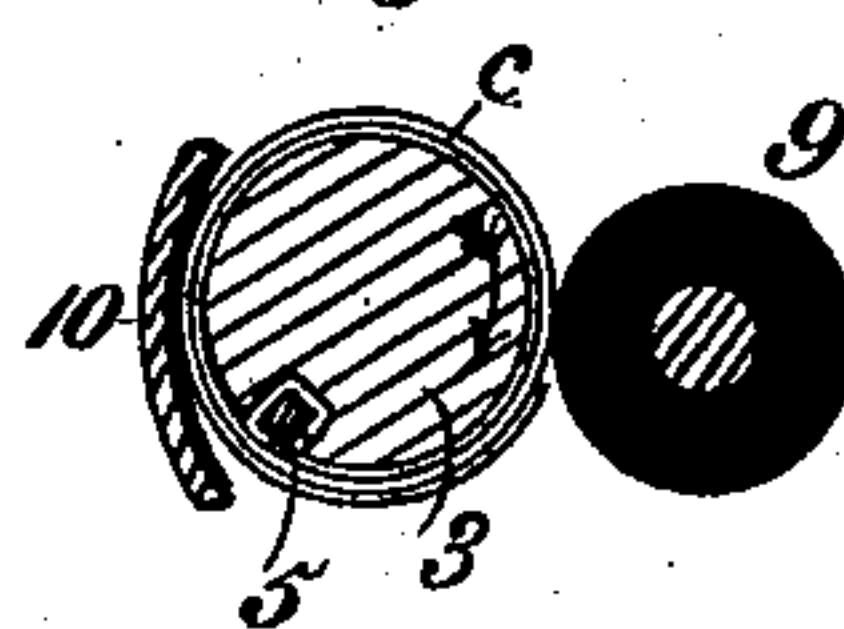


Fig. 6.

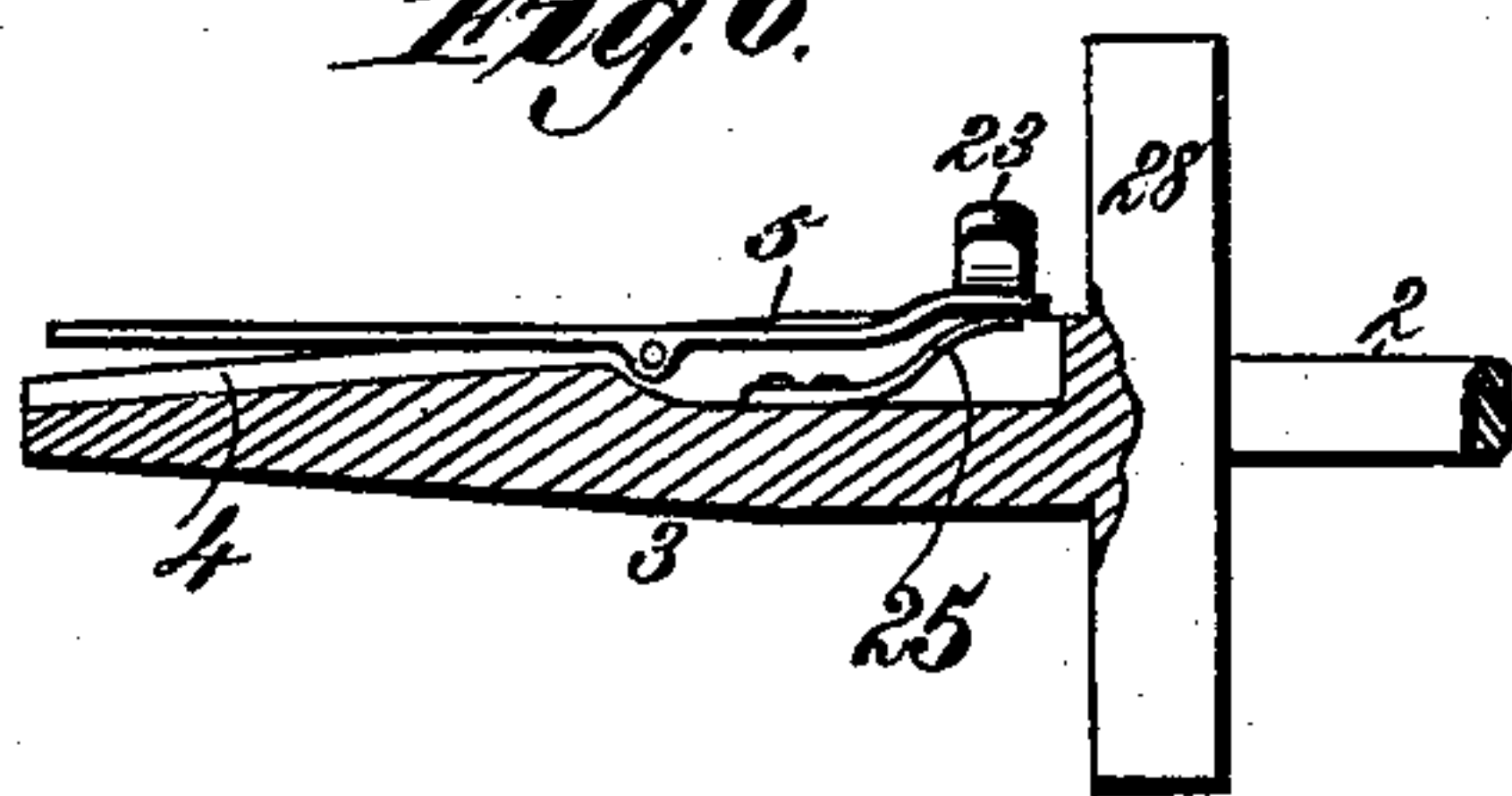


Fig. 7.



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H. R. McCready

Inventor:

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UNITED STATES PATENT OFFICE.

ROBERT W. THURMAN, OF LYNCHBURG, VIRGINIA, ASSIGNOR TO THE
LONE JACK CIGARETTE COMPANY, OF SAME PLACE.

MACHINE FOR MAKING MOUTH-PIECES OR HOLDERS FOR CIGARS, CIGARETTES, &c.

SPECIFICATION forming part of Letters Patent No. 400,806, dated April 2, 1889.

Application filed March 28, 1887. Serial No. 232,624. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. THURMAN, a citizen of the United States, residing at Lynchburg, in the county of Campbell and State of Virginia, have invented new and useful Improvements in Machines for Making Mouth-Pieces or Holders for Cigars, Cigarettes, &c., of which the following is a specification.

My invention relates to machines especially adapted for making paper mouth-pieces for cigarettes and cigars, and adapted also to the manufacture of paper tubes for other purposes.

The said invention consists in the several novel features of construction and new combinations of parts, hereinafter fully set forth in connection with the drawings forming part of this application, and then specifically pointed out and defined in the claims.

In the annexed drawings, illustrating the invention, Figure 1 is a front elevation of my machine for making paper tubes for cigarette mouth-pieces, and shows a blank in the act of being gripped by the mandrel. Fig. 2 is a perspective view of the working parts of the machine with the supporting frame-work removed, the operative parts being in the same position as shown in Fig. 1. Fig. 3 is a detail plan of the mandrel, showing a blank with its end inserted beneath the gripping device of the mandrel. Fig. 3^a is a cross-section of the same, showing the blank gripped by the mandrel and in the act of being coiled thereon. Fig. 4 is a plan view of the mandrel with mouth-piece coiled thereon. Fig. 4^a is a transverse section of the same. Fig. 5 is a plan view of the mandrel, showing the completed mouth-piece in the act of being thrown off. Fig. 6 is a longitudinal section of the mandrel. Fig. 7 is a view of the completed mouth-piece.

Referring to the above-mentioned figures, the numeral 1 designates any suitable frame-work, and 2 a mandrel-shaft having bearings in said frame.

At the forward end of said shaft 2 is a conical mandrel, 3, having a longitudinal groove, 4, in which is pivoted a spring gripping-finger, 5, for grasping one corner of the blank,

as hereinafter explained. On the rear end of the mandrel-shaft 2 is a pinion, 6, through which the mandrel is rotated by means of a large mutilated gear, 7, on the shaft of a power-wheel, 8, which can be driven by hand or otherwise.

In rolling the paper blank into the desired form for a mouth-piece the mandrel 3 acts in conjunction with a yielding pressure-roller, 9, and a yielding concaved pressure-bar, 10, which are respectively arranged in contact with and on opposite sides of the mandrel. The roller 9 is journaled in bearings 11, provided at the upper end of a spring-standard, 12, which is suitably supported by the machine-frame, and the concaved pressure-bar 10 is formed on or attached to the upper end of a similar spring-standard, 13, having a like support.

The tension of the spring-standards 12 and 13 is such that the roller 9 and pressure-bar 10 are normally in contact with the opposite sides of the mandrel 3 to hold the paper blank in place while it is being wound into a mouth-piece on the said mandrel; but when the mouth-piece is completed, and prior to its removal from the mandrel, the spring-standards 12 and 13 are acted on by levers 14, 15, and 16 in such a manner as to press said standards outward, and thereby remove the roller and pressure-bar from contact with the mandrel and attached mouth-piece. These levers 14, 15, and 16 are pivoted to the machine-frame, as shown, and are acted on by a cam, 17, carried at the forward end of a cam-shaft, 18, which is driven by gears 19 and 20 from the power-wheel.

Besides the cam 17, the shaft 18 also carries two other cams, 21 and 22, which act at proper intervals on the lower ends of levers 23 and 24, pivoted to the machine-frame. The upper end of the lever 23 is bent over horizontally above the rear end of the mandrel to press down the rear end of the gripping-finger 5 at the proper time against the pressure of its spring 25, and so raise the forward end of said finger to permit the disengagement of the completed mouth-piece. The movement of the outer end of the gripping-finger to release the mouth-piece while the latter is on the mandrel is but very slight, and is rendered

possible from the fact that the depth of the groove in the mandrel is slightly greater than the thickness of the finger. This lever 23 is actuated by the cam 21, as before remarked.

5 The lever 24, actuated by the cam 22, is so formed at its upper end as to bear against the inner side of a spring-pawl, 26, and release it from engagement with a notch, 27, in the periphery of a disk, 28, that is fast on the

10 mandrel-shaft, the engagement of said pawl and notched disk being designed to arrest the rotation of the mandrel when the mouth-piece is completed and said mandrel has rotated sufficiently to bring the groove 4 again on top.

15 At the time the pawl 26 and notched disk 28 engage the mutilated gear 7 has rotated sufficiently to become disengaged from the pinion 6 by reason of the plain periphery of said gear being presented toward the pinion. During this interval, however, the cam-shaft 18,

20 actuated by the gears 19 and 20, is free to rotate. After the action of the cam 17 on the levers 14, 15, and 16 has caused the spring-standards 12 and 13 to remove the roller 9 and

25 pressure-bar 10 from contact with the mandrel 3, and the lever 23, actuated by the cam 21, has disengaged the spring-finger 5 from the completed mouth-piece, the latter will be automatically pushed or removed from the mandrel by means of an annular ejector, 29, carried by a bell-crank, 30, pivoted in the machine-frame and moving in a guide, 31, arranged as shown. One arm of the bell-crank

30 30 is connected by a link, 32, with the forward end of a lever, 33, pivoted horizontally near the bottom of the machine-frame. This lever 33 carries a friction-roller, 34, at its rear end and is actuated by a cam projection, 35, on the power-wheel. After the cam projection 35,

35 acting on the roller 34, has depressed the rear end of the lever 33 and carried the ejector 29 forward on the mandrel, thereby removing the mouth-piece, the ejector 29 will be automatically retracted by a spring, 36, connected

40 with the forward end of the lever 33, as shown, or otherwise arranged to effect the desired purpose. A slight movement of the lever 23 slightly raises the finger 5 to release the completed mouth-piece and permit it to be removed from the mandrel by the ejector 29

45 without tearing or mutilating said mouth-piece. After the mouth-piece has been ejected the further movement of the lever 23 raises the finger 5 to the position shown in Fig. 6, to enable one corner of a new blank to be inserted, and when the lever 23 is moved back by a spring, 37, provided for that purpose, the

50 spring 25 under the rear end of the finger 5 throws that end of the finger up and causes its forward end to become depressed in the groove 4, and thereby grip the paper blank firmly while it is being coiled on the mandrel.

The paper blank *a*, Fig. 3, can be fed to the mandrel over a table, 38, (shown in Fig. 1,) though the table is not essential. The forward end of the finger 5 being elevated, as

shown in Figs. 2 and 6, one corner of the blank will be caught in the groove 4 beneath said finger, and when the lever 23 moves back the spring 25 will cause the finger 5 to grasp

70 the blank and hold it firmly, as shown in Figs. 3 and 3^a, and with the rotation of the mandrel the blank will be drawn between the mandrel 3 and roller 9, as shown in Fig. 3^a. With the continued rotation of the mandrel

75 and the cam-shaft 18, the pressure of the levers 14, 15, and 16 on the spring-standards 12 and 13 is removed and the roller 9 and the pressure-bar 10 are allowed to come in close contact with the paper blank as it be-

80 comes coiled on the mandrel, as shown in Figs. 4 and 4^a. It will be seen that the pressure thus exerted by the roller 9 and the concaved bar 10 will cause the paper blank to be coiled smoothly and evenly on the mandrel, and the

85 outer edge of the blank having been previously supplied with an adhesive substance, *b*, the tube when completed will be firmly united. By the time the paper tube or mouth-piece is completed the lever 23 will have

90 moved forward and released the spring-finger 5 from its engagement with the inner corner of the blank, and the spring-pawl 26 will interlock with the disk 28 and hold the mandrel stationary. The cam projection 35 on

95 the power-wheel now comes in contact with the roller 34 and causes the lever 33 and bell-crank 30 to actuate the annular ejector 29, which moves forward on the mandrel and pushes off the completed tube or mouth-piece

100 *c*, as shown in Fig. 5.

The form of the mouth-piece *c*, as shown in Fig. 7, is conical, corresponding with the configuration of the mandrel on which it was formed; but it is obvious that with a cylindrical mandrel a paper tube of cylindrical shape could be produced, if desired.

What I claim as my invention is—

1. In a machine for making paper tubes and mouth-pieces for cigarettes, the combination, with a rotary mandrel having a longitudinal groove, of a swinging spring gripping-finger pivoted intermediate its ends in said groove, and a device, substantially as described, for acting on the tail end of the finger to swing it, for the purposes set forth.

2. The combination, with a rotary mandrel having a longitudinal groove, of a swinging spring gripping-finger pivoted intermediate its ends in said groove, a swinging lever for acting on the tail end of the finger to swing the latter, and a rotary cam for actuating the lever, substantially as described.

3. The combination of a rotary mandrel having a longitudinal groove, a swinging spring-actuated gripping-finger pivoted in said groove, a device, substantially as described, for acting on the tail end of the finger to swing it, and an ejector slidable on the mandrel, substantially as described.

4. The combination, with a rotary mandrel provided with a gripping-finger for holding a

paper blank, of a roller and a pressure-bar
located on opposite sides of said mandrel and
each supported in normal contact therewith
by a spring-standard, and cam-actuated levers
5 for acting on said spring-standards to remove
said roller and pressure-bar from contact with
the mandrel, substantially as described.

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

ROBERT W. THURMAN.

Witnesses:

K. OTEY,

JNO. M. OTEY.