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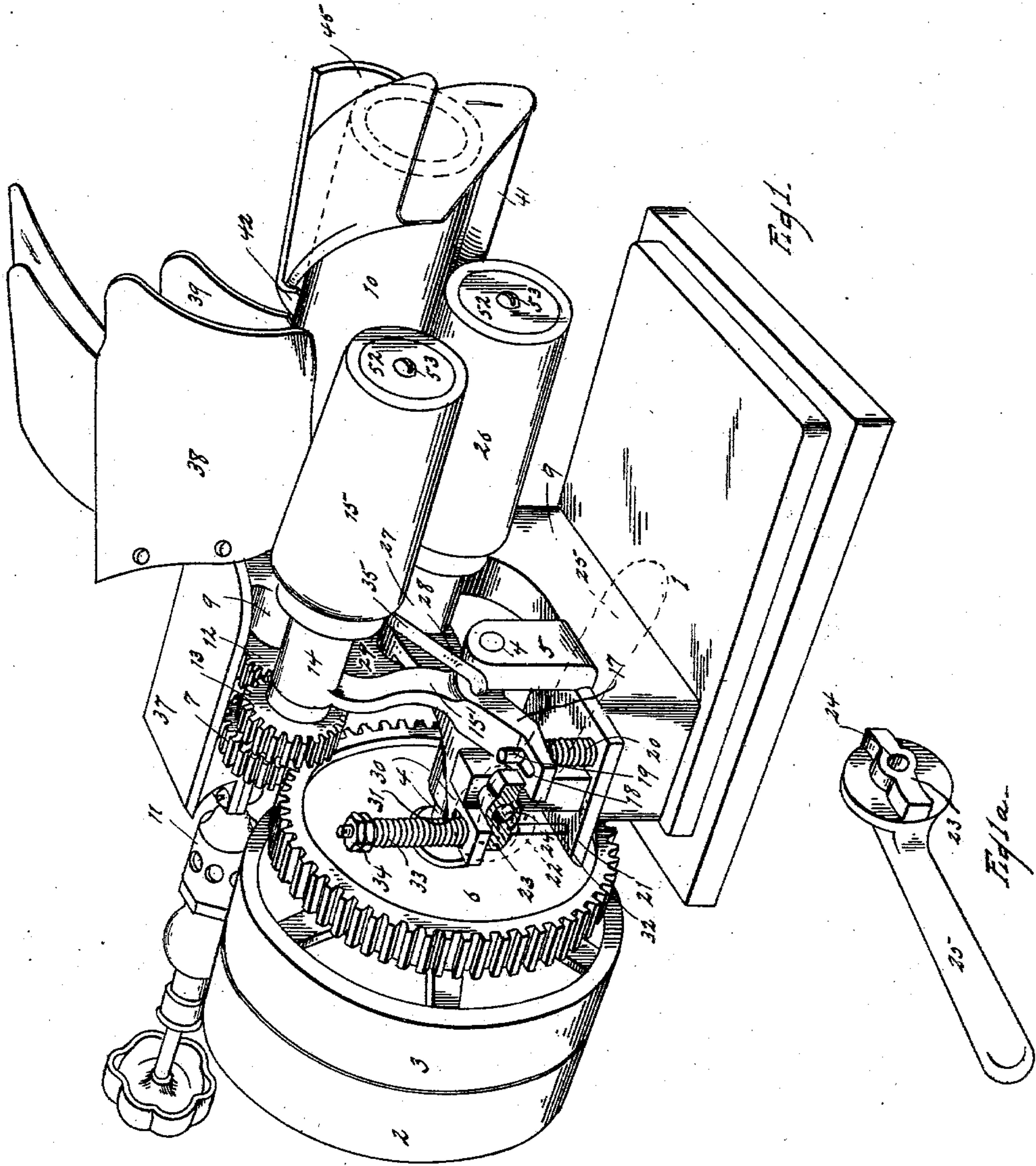
PATENTED OCT. 13, 1903.

G. E. NORRIS.
IRONING MACHINE.

APPLICATION FILED AUG. 11, 1902.

NO MODEL.

5 SHEETS—SHEET 1.



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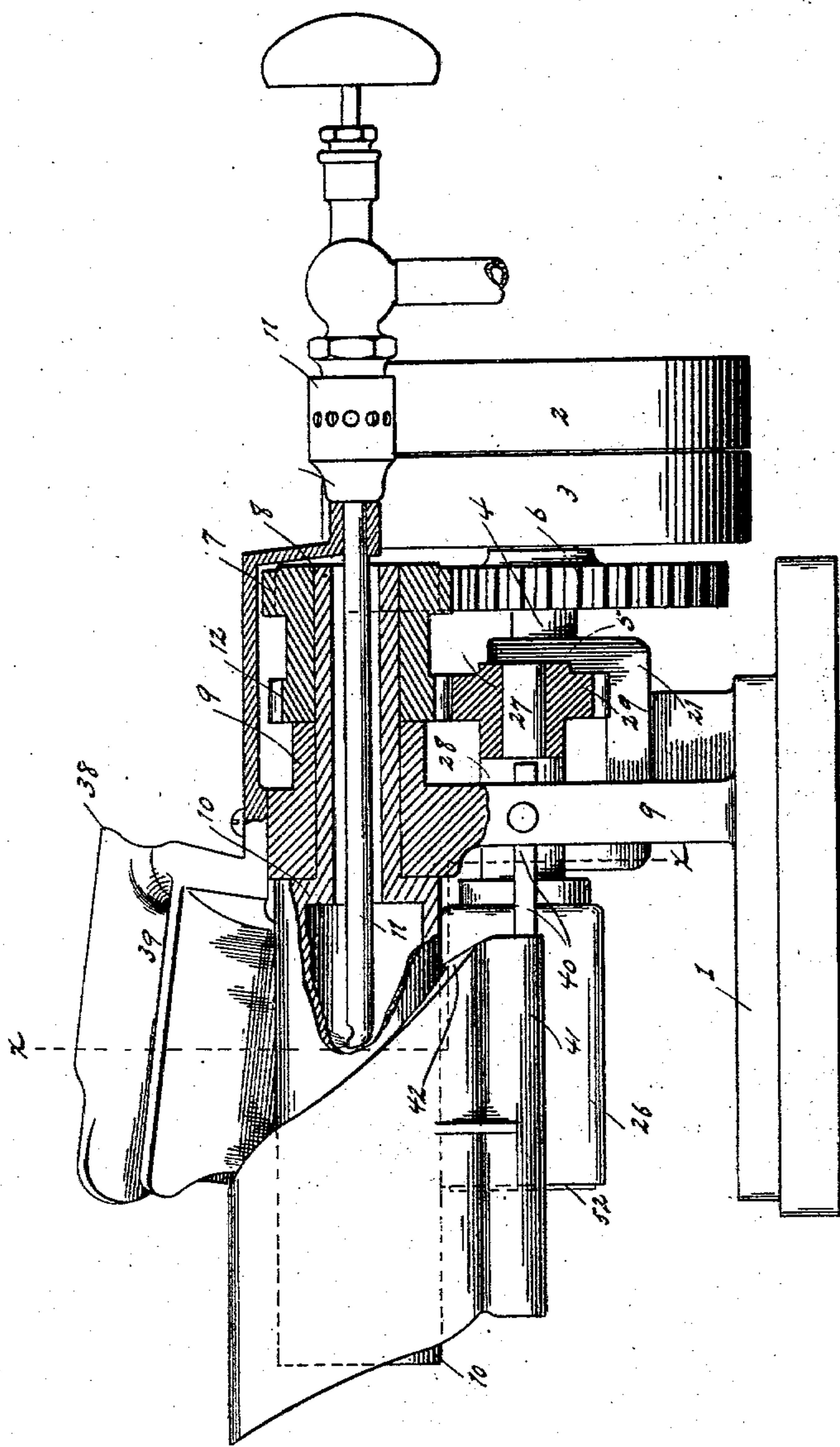
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6 SHEETS—SHEET 2.



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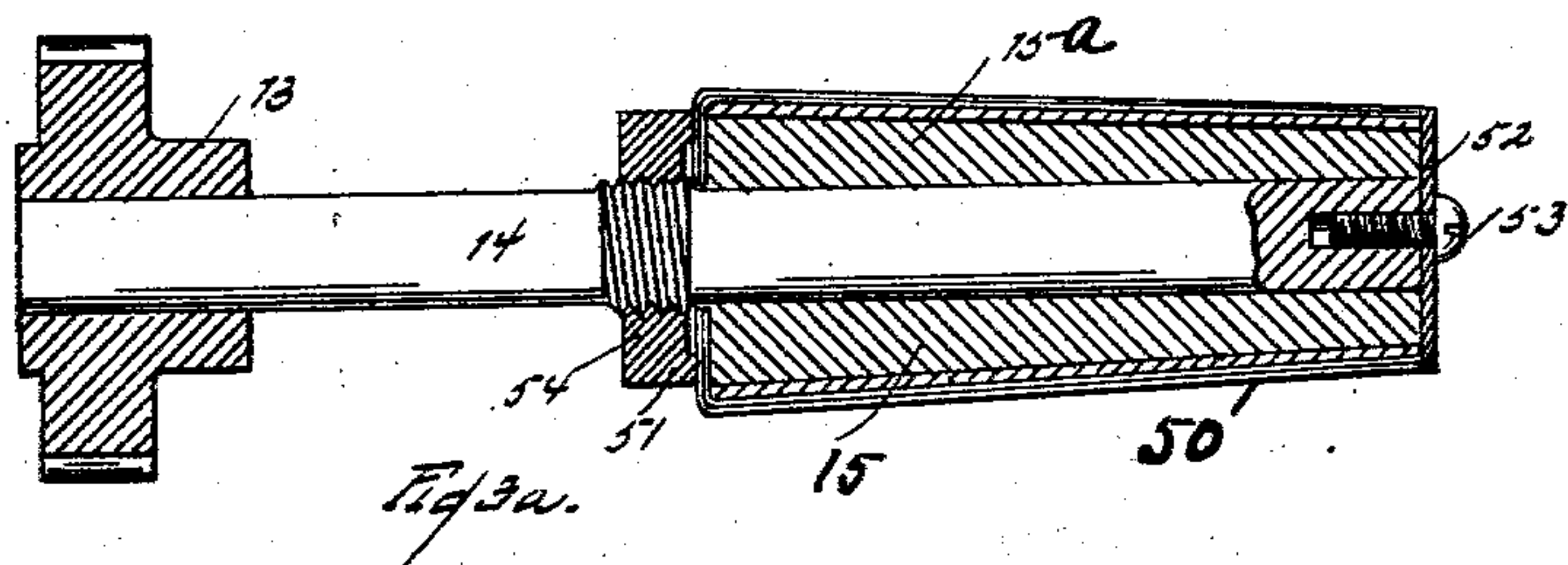
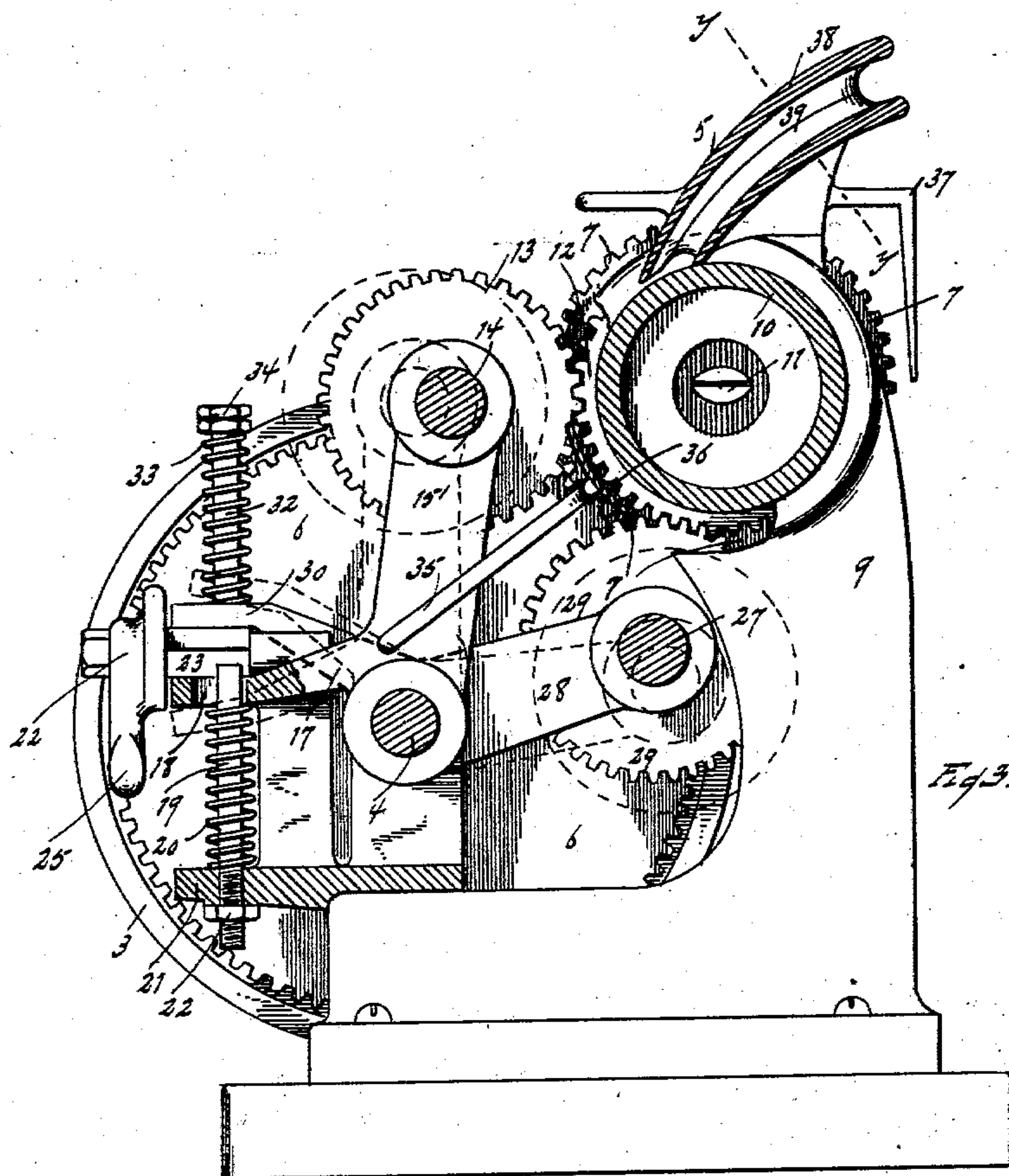
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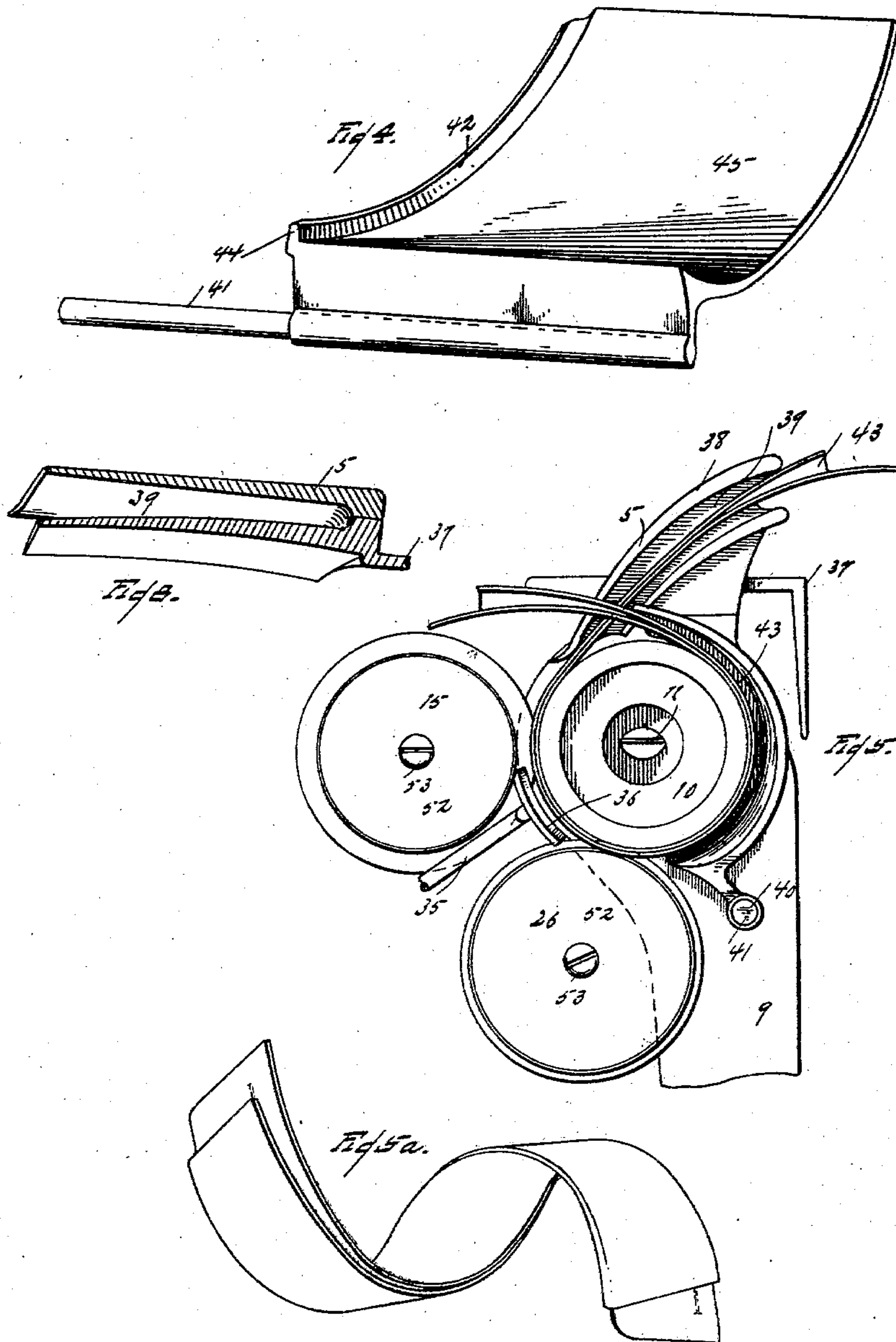
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5 SHEETS—SHEET 4.



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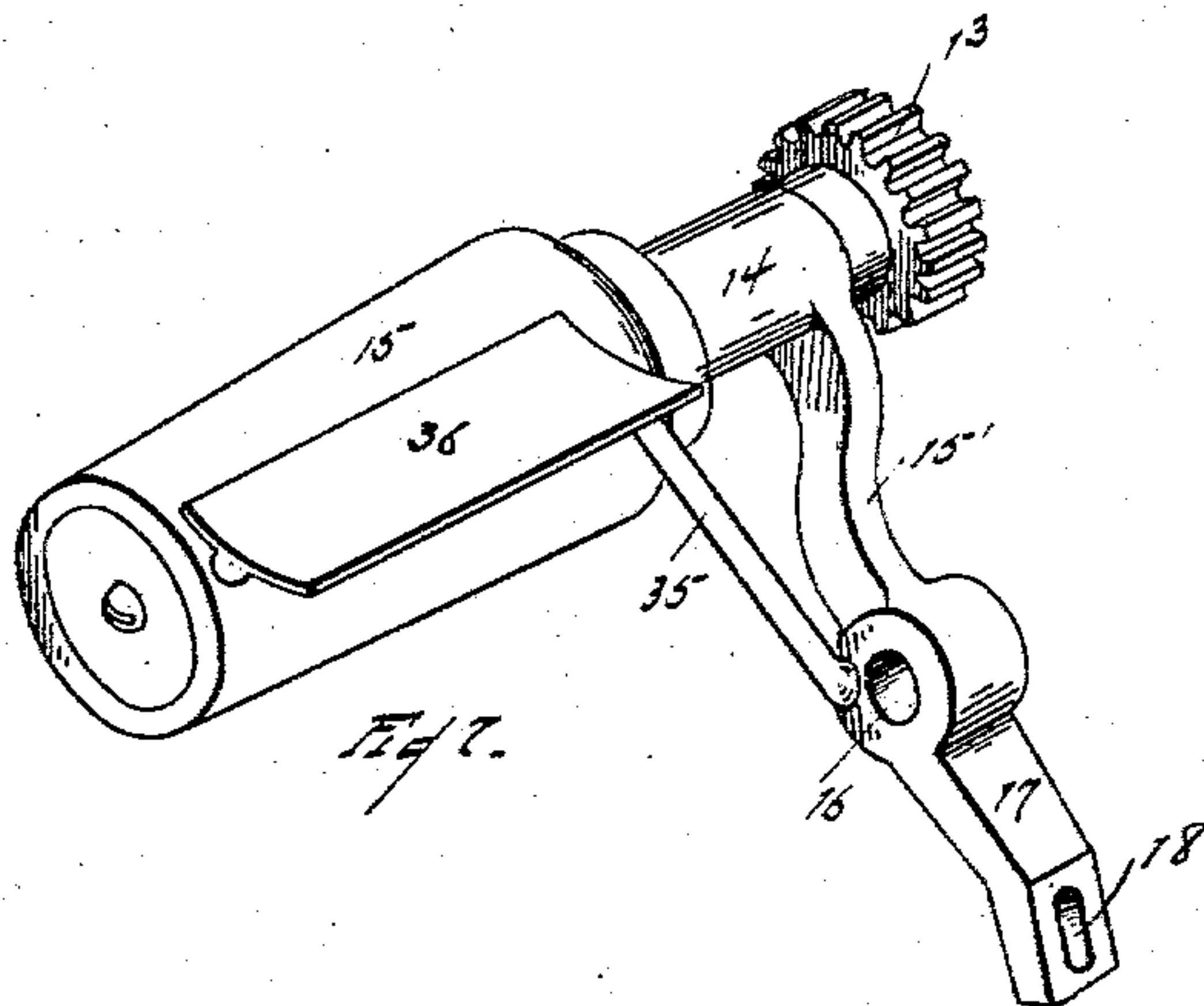
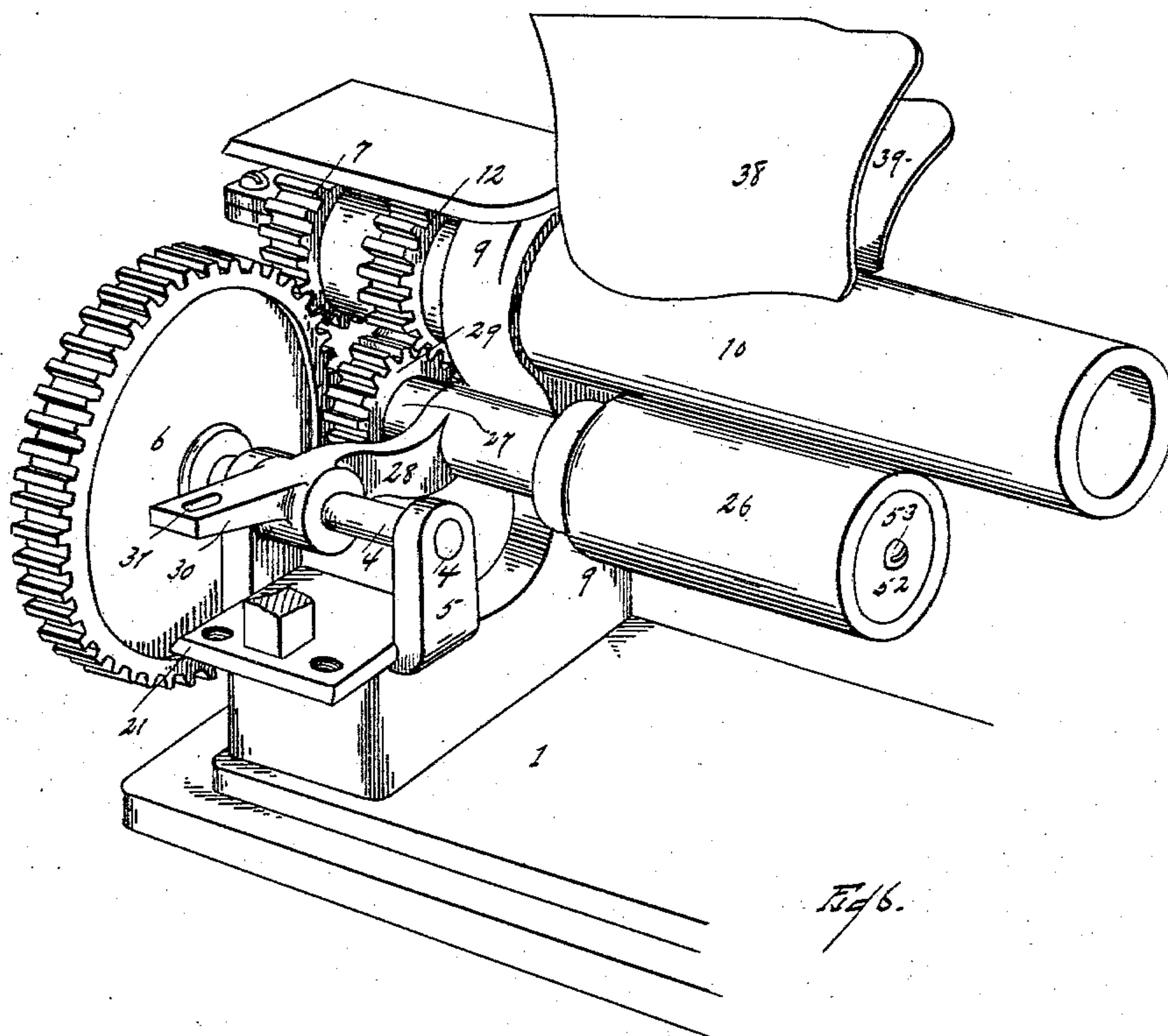
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5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

GEORGE E. NORRIS, OF DETROIT, MICHIGAN.

IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 741,065, dated October 13, 1903.

Application filed August 11, 1902. Serial No. 119,207. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. NORRIS, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have
5 invented a certain new and useful Improvement in Ironing-Machines; and I 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 pertains to make
10 and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to that class of ironing-machines which is devoted to the smoothing and ironing of collars, and more especially
15 turn-down collars; and its object is to produce mechanism by which collars having a curved folded line may be accurately and nicely ironed, both inside and outside of the fold, and
20 yet retain their proper shape instead of being distorted and drawn out of the proper shape; and it consists in the combinations hereinafter described, and specified in the claims.

25 In the drawings, Figure 1 is a perspective view of the machine with the parts assembled ready for operation, the lever for disengaging the rollers being shown in dotted lines for clearness. Fig. 1^A is a perspective of the lever for throwing the rollers out of engagement.
30 Fig. 2 is a vertical drawing of the machine from the opposite side of Fig. 1 with parts broken away and sectioned to show the interior construction. Fig. 3 is a partially sectional view on lines *x x* of Fig. 2. Fig. 3^a
35 is a sectional view of one of the rollers, showing its construction. Fig. 4 is a detailed view in perspective of one of the ironers. Fig. 5 is an end view from the left-hand side of Fig. 2. Fig. 5^A is a representation of collar as it comes from the machine after ironing. Fig. 6 is a perspective view of the interior of the machine with one of the rollers removed. Fig. 7 is a detailed view of the roller which has
45 been removed from Fig. 6. Fig. 8 is a section of the ironing-guide on a line *y y*, Fig. 3.

Similar letters and numerals refer to similar parts.

50 In the drawings, 1 represents the base on which the machine rests and which may be attached to a table or any other convenient location for the purpose of applying power.

2 represents a loose pulley journaled upon a shaft in the usual manner. 3 represents the fixed pulley attached rigidly to the same
55 shaft, represented at its end by 4, the shaft being journaled in appropriate bearings, one of which is shown in a bracket 5, which forms a part of the base. The same shaft carries a spur gear-wheel 6. This gearing drives a
60 pinion 7, fixedly attached to a shaft 8, journaled in a suitable bracket-bearing 9, arising from and rigidly attached to the base-plate 1, the extremity of the shaft terminating in a hollow sleeve of cylinder 10. The hollow
65 extends not only through the cylinder, but entirely through the shaft, upon which the pinion 7 is attached. A jet-nozzle 11 of the usual form, to which is connected a source of supply of gas or vaporized gasoline, permits
70 of a flame being thrown into the tube 10, and thus heating it. The shaft 8 carries a spur-wheel 12, and this in turn drives a spur-wheel 13, fixedly attached to a shaft and operating in a swinging bearing 14 and carries
75 fixed to its end a roller 15, having preferably the form of a frustum of a cone.

The swinging bearing 14 is pivoted upon shaft 4 by means of an angular bracket 15'. This is shown in detail in Fig. 7, the pivotal
80 point upon the shaft 4 being shown at 16. The bracket 15' is continued beyond the bearing at 17, and it has in its extremity a slotted opening 18. Passing through this opening is a bolt 19, and a spiral spring 20 is located
85 between the movable end 17 and a fixed bracket 21. The bolt is attached to the frame by means of screw-threads thereon engaging the frame and a nut 22. The bolt and spring permit a yielding movement of the bracket
90 15', the effect of the spring 20 being to force up the end 17 of the bracket, and thereby force the roller 15 in toward the roller 10 and also to force the spur-wheel 13 into engagement with the spur-wheel 12. This arrangement permits a withdrawal of the roller 15
95 from engagement with the roller 10 and also the spur-wheel 13 from engagement with the spur-gear 12. This withdrawal is effected by means of a block 23, pivoted by its bearing
100 24 and firmly attached to a hand-lever 25, the hand-lever being shown in Fig. 1 only in dotted lines for the sake of clearness. The block and lever being shown in Fig. 1^A, as

will be seen, this also operates to withdraw by a similar mechanism an opposite roller and gearing from its connections. Another roller 26 is carried also by a shaft 27, journaled upon a swinging bracket 28, the opposite end of the shaft carrying fixedly thereon a spur-gear 29, which engages with the spur-gear 12, already described. The bracket 28 is also journaled upon shaft 4 and has a prolongation 30, the end of which bracket has a perforation in it, 31. A bolt 32, attached to the frame, passes through this perforation and carries impinging against the bracket 30 a spiral spring 33, and this is held with an elastic pressure against the bracket 30 by means of an adjustable nut 34. One end of the block 23 impinges underneath the swinging bracket 30, the opposite end coming above the end 17 of the bracket 15'. Therefore the depression of the outward end of the handle 25 forces the end 17 of bracket 15' down, and thus withdrawing gear 13 from 12 and roller 15 from roller 10; also simultaneously forces up swinging arm 30, forcing down the opposite end 28, thereby withdrawing the gear 29 from 12 and the roller 26 from 10.

Rollers 15 and 26 are faced with a soft cloth and have a somewhat elastic surface and operate as guide or driving rollers upon the collar to be ironed, forcing it through the ironing-block and around the shield in the manner hereinafter specified. Attached to the bracket 15' is a bent arm 35, carrying at its upper extremity a guide or shield 36, which is located in close proximity to the surface of the roller 15 and extends laterally to close proximity with the roller 26, the end of which is shown in Fig. 5. This shield prevents the article being ironed from passing out between the two rollers 15 and 26 and compels it to conform to the roller 10.

A cap 37 is removably fixed to the top of the bracket carrying the roller 10. This bracket carries also, removably fixed thereto, a throated iron device 38. (Shown in perspective in Figs. 1 and 2, an end view in Fig. 5, in section in Fig. 3, and a rear view in perspective in Fig. 6.) The throat 39 of this device 38 has a curved cross-section and also is curved spirally in the longitudinal direction of the machine. The device 38 forms a sort of hopper or guide into which the end of the collar to be operated upon is inserted, with the fold of the collar against the interior curved guiding-surface. Owing to the proximity of the interior edge of this guide to the main cylinder 10 and to the heat derived therefrom, the inner concaved surface of the end of the guide effectually irons the curved edge of the collar impinging against it as the collar is drawn down through between the rollers 10 and 15 due to their revolution. As the collar passes from between rollers 10 and 15 it is guided to and passes between rollers 10 and 26 and thence passes in spiral form to a guide and ironing device. (Shown in Fig. 4.) This device is connected, as shown in Fig. 5,

to a bracket comprising a portion of the main frame and is close to the roller 10. The device is journaled at 40 by means of a pin 41. The curved guide or iron, as shown in Fig. 4, has a spiral flange 42, which comes down in close proximity to the roller 10, it being arranged with reference to roller 10 so that when the collar (shown in Fig. 5 as 43) is drawn down through the chute and guide 38 and passes, as hereinbefore stated, the rollers 15 and 26 its folded edge is guided to and comes in contact with the lower end 44 of the flange 42 and is thereby guided in a spiral form around the roller 10 and the longitudinal portion 45 of the guide, with its edge impinging against the flange 42, until the whole operation of forcing the collar through the machine is completed, and owing to the proximity of the guide and flange 42 to roller 10 and the heat derived therefrom it becomes an ironing-surface, operating especially along the edge of the collar where it is creased or folded. When the operation of running the collar through is completed, it takes the form shown in Fig. 5^A, so that when the two ends are brought in their proper relation to each other, with the buttonholes adjacent the collar, takes the form of a frustum of a cone and the collar is properly shaped for comfortable wear.

The rollers 15 and 26 are preferably constructed partially conical, although not necessarily so. They may be true cylinders. They are covered with cloth 50.

The shaft 14 carries a sleeve 15^a, which is held by a nut 54 and the washer 52, which washer is in turn held to the shaft 14 by screw 53. A cloth covering 50 passes tightly over the sleeve 15 and folds down at the inner end thereof and is held firmly thereon by being jammed between the sleeve and the nut 54.

The operation of this device is apparent from the foregoing description. The gas-jet being lighted and the machine set in motion properly heated, all that is necessary to do is to insert the end of the collar with the folded edge to the left hand against the interior concavity of the upper guide 38 until the end is caught between cylinders 10 and 15. It is then carried through the machine, with its folded edge against the ironing-surfaces hereinbefore described, until it passes out therefrom, as stated, having the curves as shown in Fig. 5^A.

What I claim is—

1. In a collar-ironing machine, a heated cylinder, means for driving the same, a fixed guide located at one end of said cylinder and deriving heat therefrom, a curved throat therein against which the folded edge of the collar impinges, two cloth-covered ironing-cylinders located in proximity to said heated cylinder, means for driving the same therefrom, and a continuous guide located at the opposite end of said cylinder in a prolongation of a spiral around the same and having a flange thereon, whereby the folded edge of

the collar is guided and ironed, substantially as described.

2. The combination of two conical cylinders, each arranged upon swinging brackets, a main cylinder against which they normally impinge, means for driving them from said main cylinder, and means for simultaneously withdrawing said conical cylinders from engagement with the driving mechanism of said main cylinder, and elastic means for keeping said conical cylinders in engagement with said main cylinder, substantially as described.

3. In a collar-ironing machine, a main cylinder, means for heating and driving the same, a curvilinear spiral guide located around the same for receiving the collar, said guide having a flange at one end and deriving heat from said machine whereby the folded edge of the collar may be ironed, and means adjacent to and in connection with said main cylinder for forcing the collar along said guide and ironing it, causing it to be delivered in a spiral form, whereby when the ends are brought together it substantially

takes the form of a frustum of a cone, substantially as described.

4. In a collar-ironer, the combination of a heating-cylinder, means for rotating the same, and means for heating it, two slightly-tapered rollers normally operated in conjunction therewith, a curvilinear guide and ironing-plate located adjacent to said main heating-cylinder, and a secondary curvilinear guide and ironing-plate located along said heating-cylinder in spiral relation to the first-named guide, and a guide carried by the arm upon which the upper roller is journaled, said guide being located between the two rollers and compelling the collar to pass between the rollers and the main cylinder, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE E. NORRIS.

Witnesses:

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