

No. 894,789.

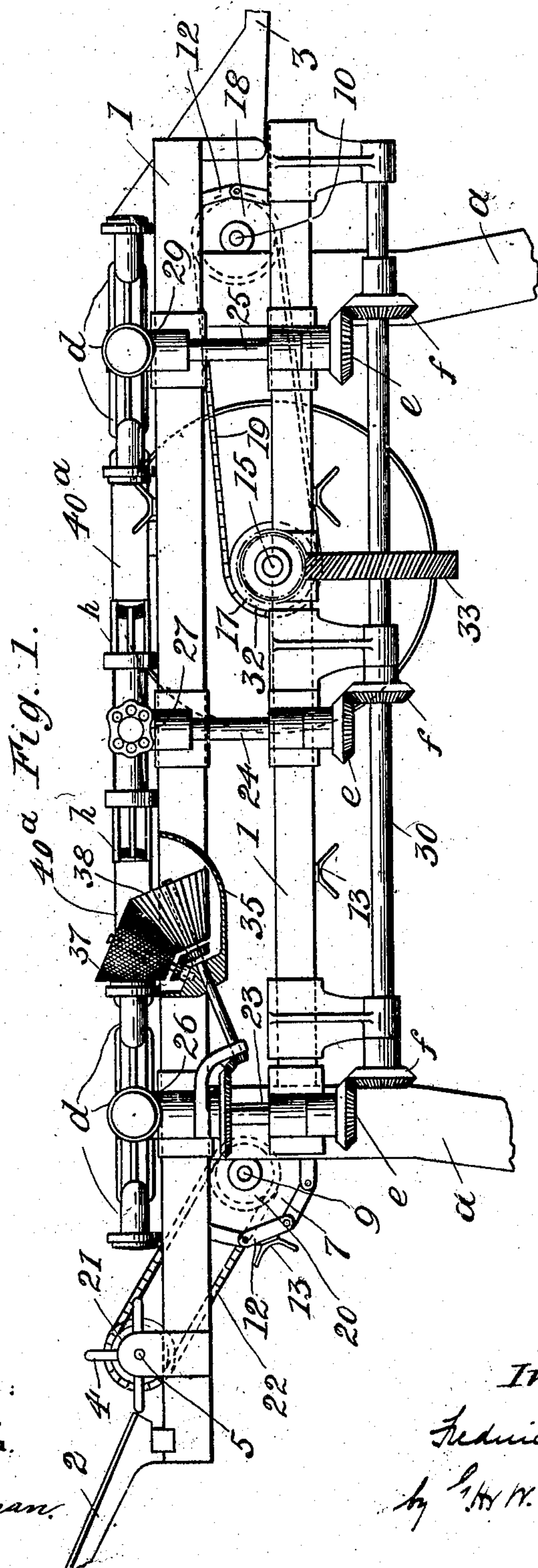
PATENTED JULY 28, 1908.

F. W. WILD, JR.

LABELING MACHINE.

APPLICATION FILED NOV. 12, 1906.

5 SHEETS—SHEET 1.



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5 SHEETS—SHEET 2.

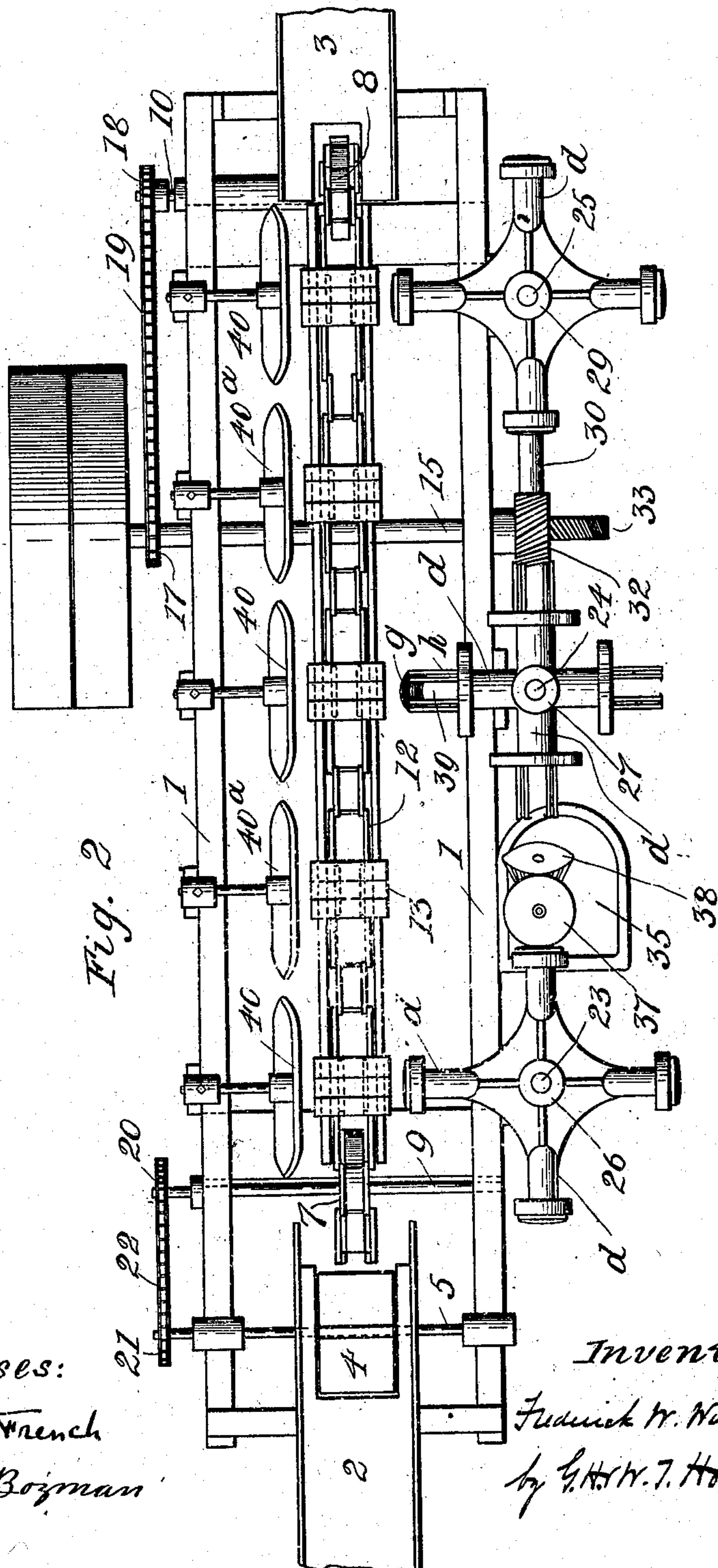


Fig. 2

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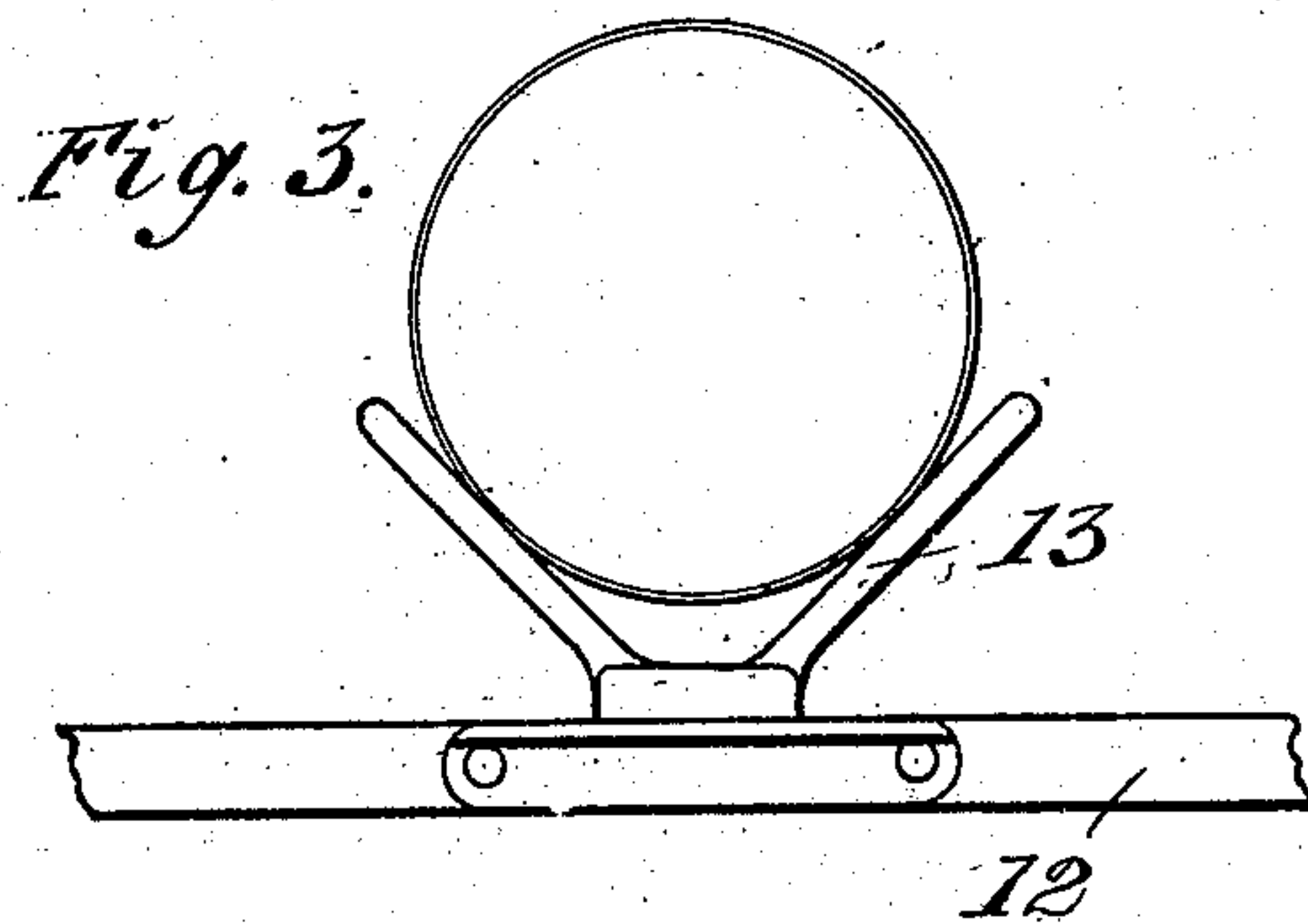


Fig. 4.

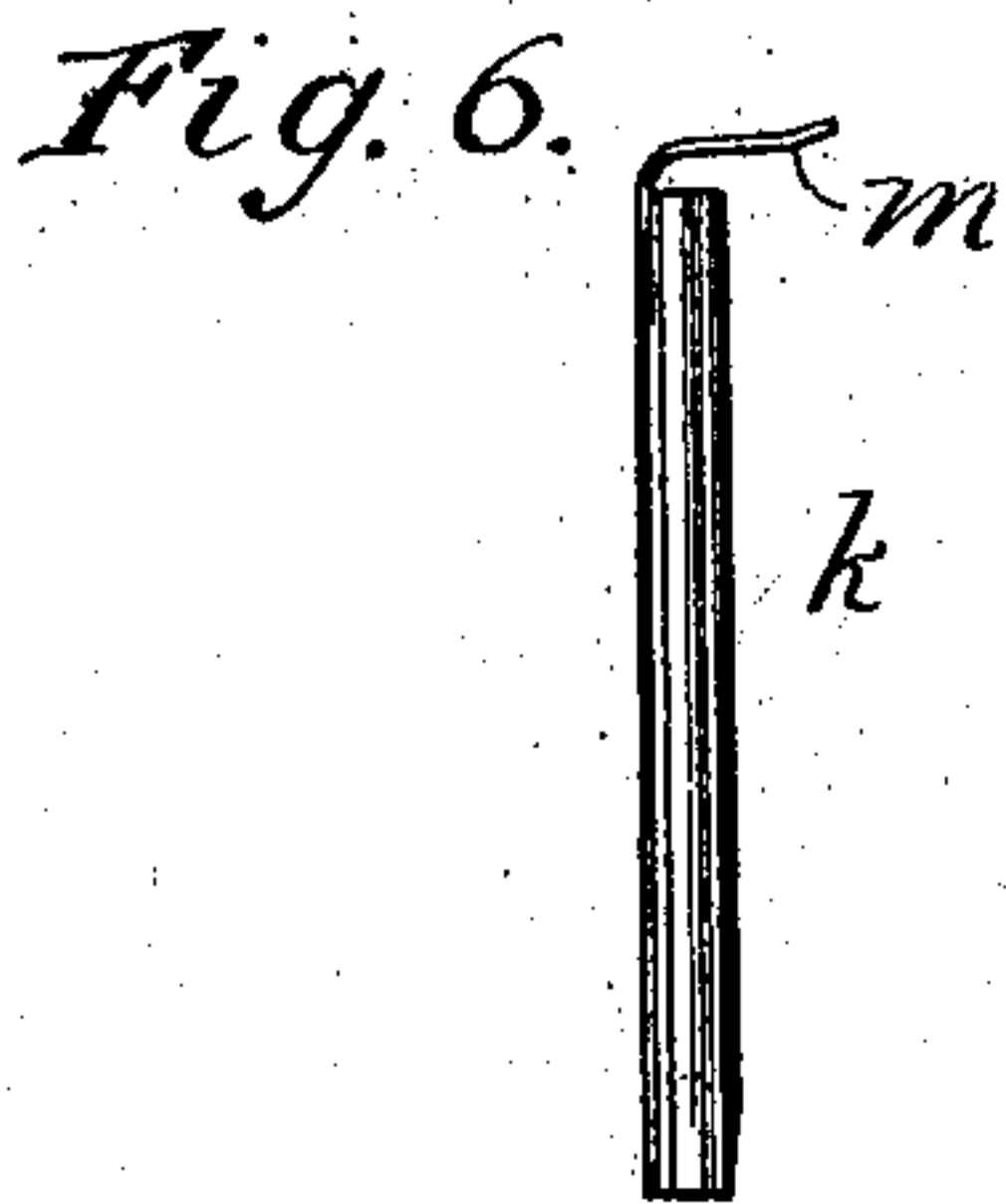
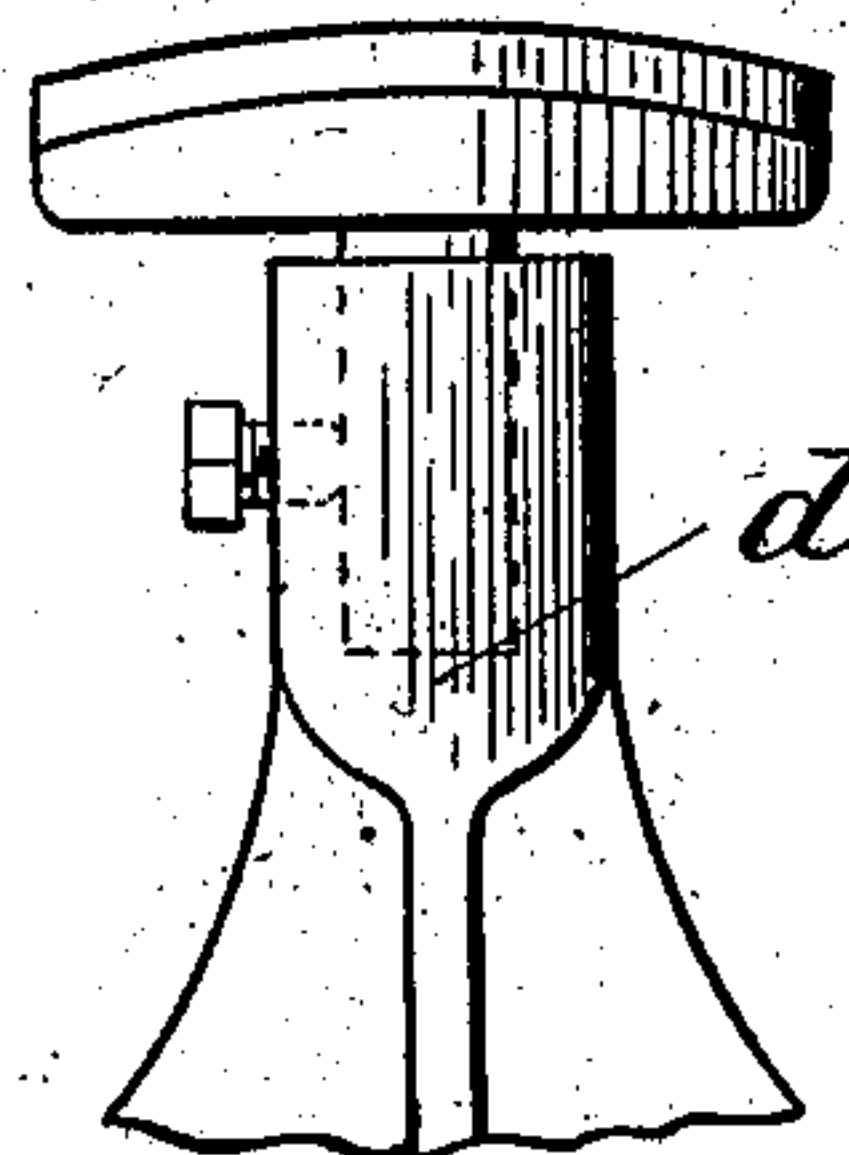
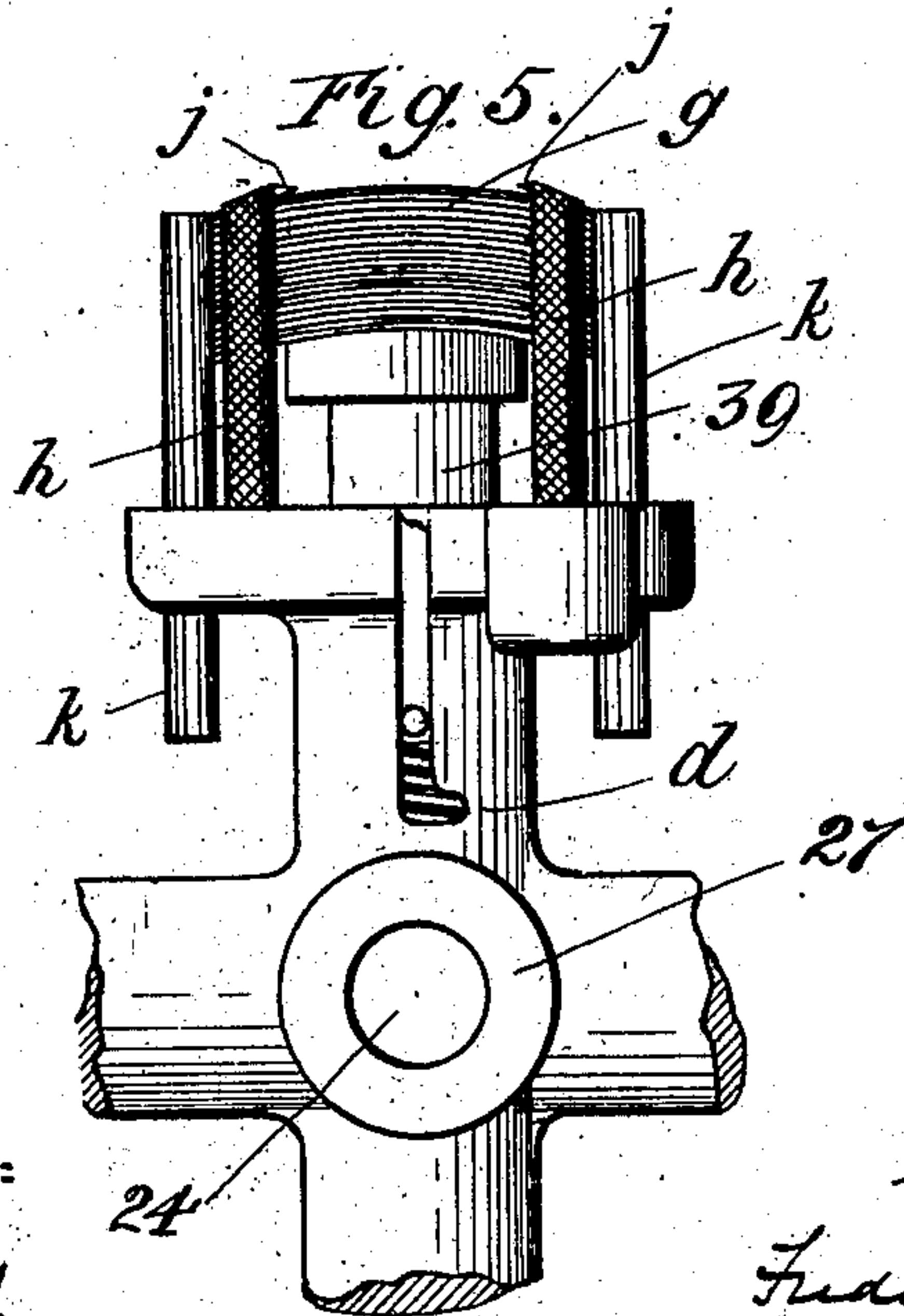


Fig. 5.



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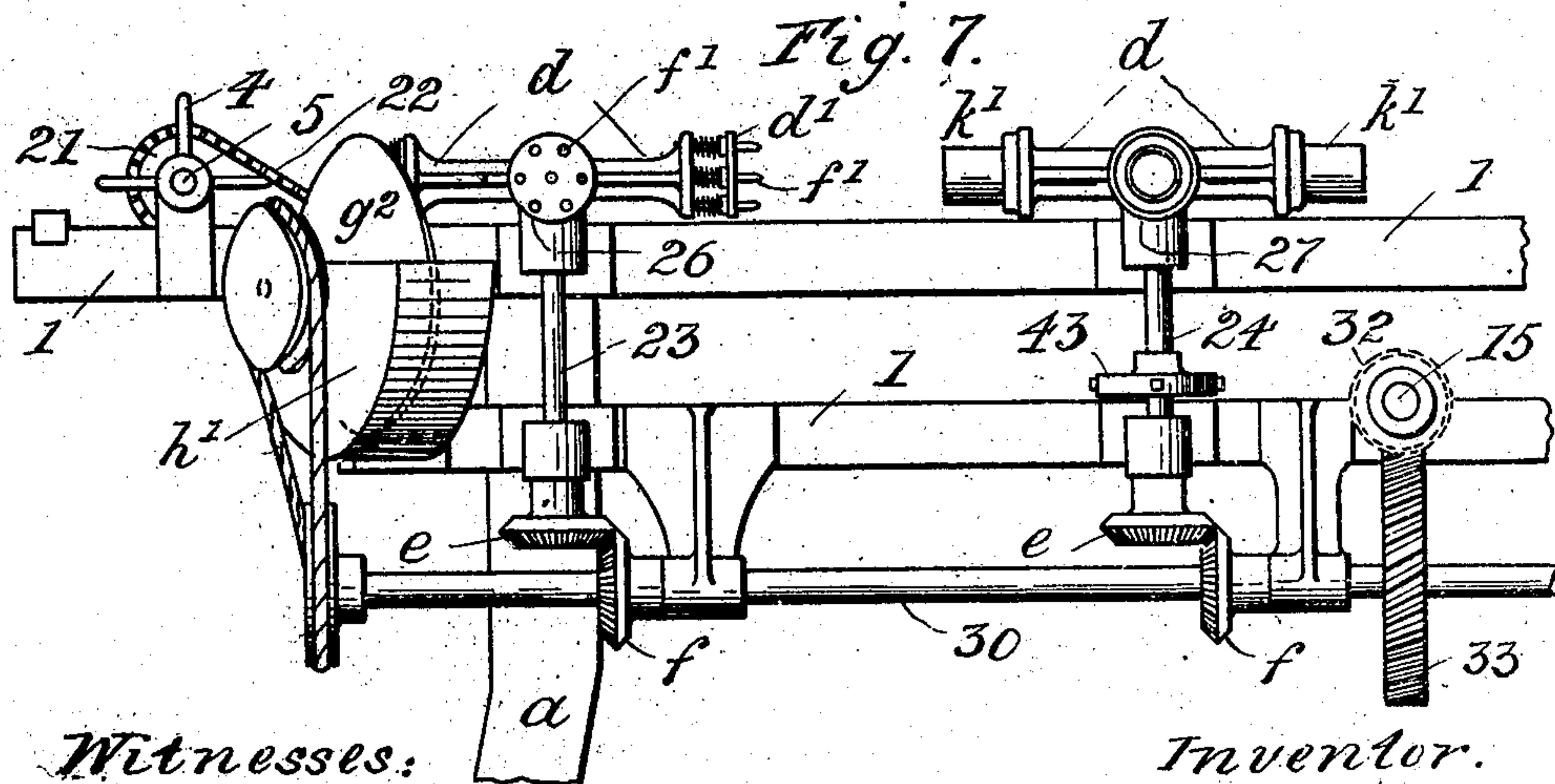
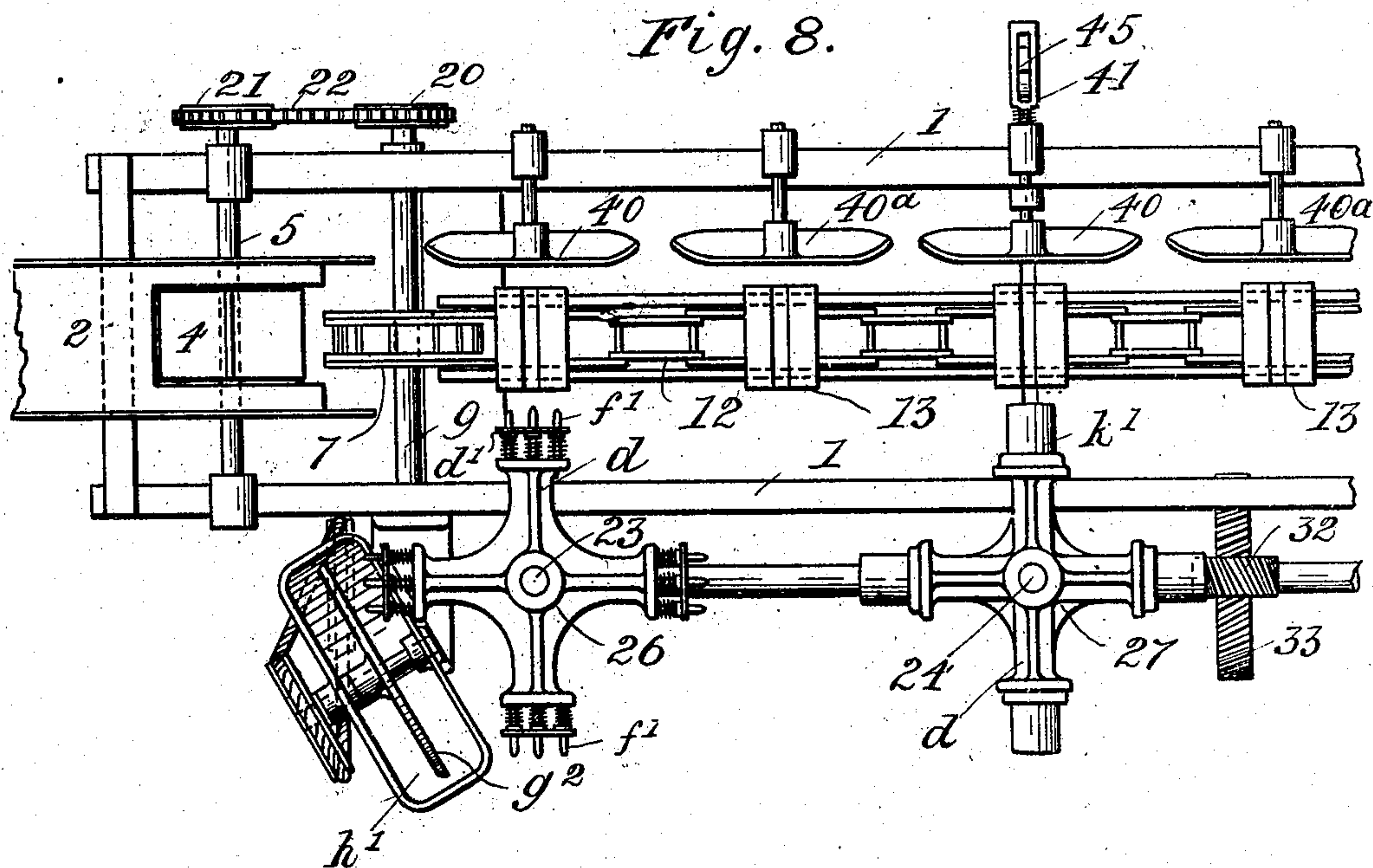
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5 SHEETS—SHEET 4.



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5 SHEETS—SHEET 5

Fig. 10.

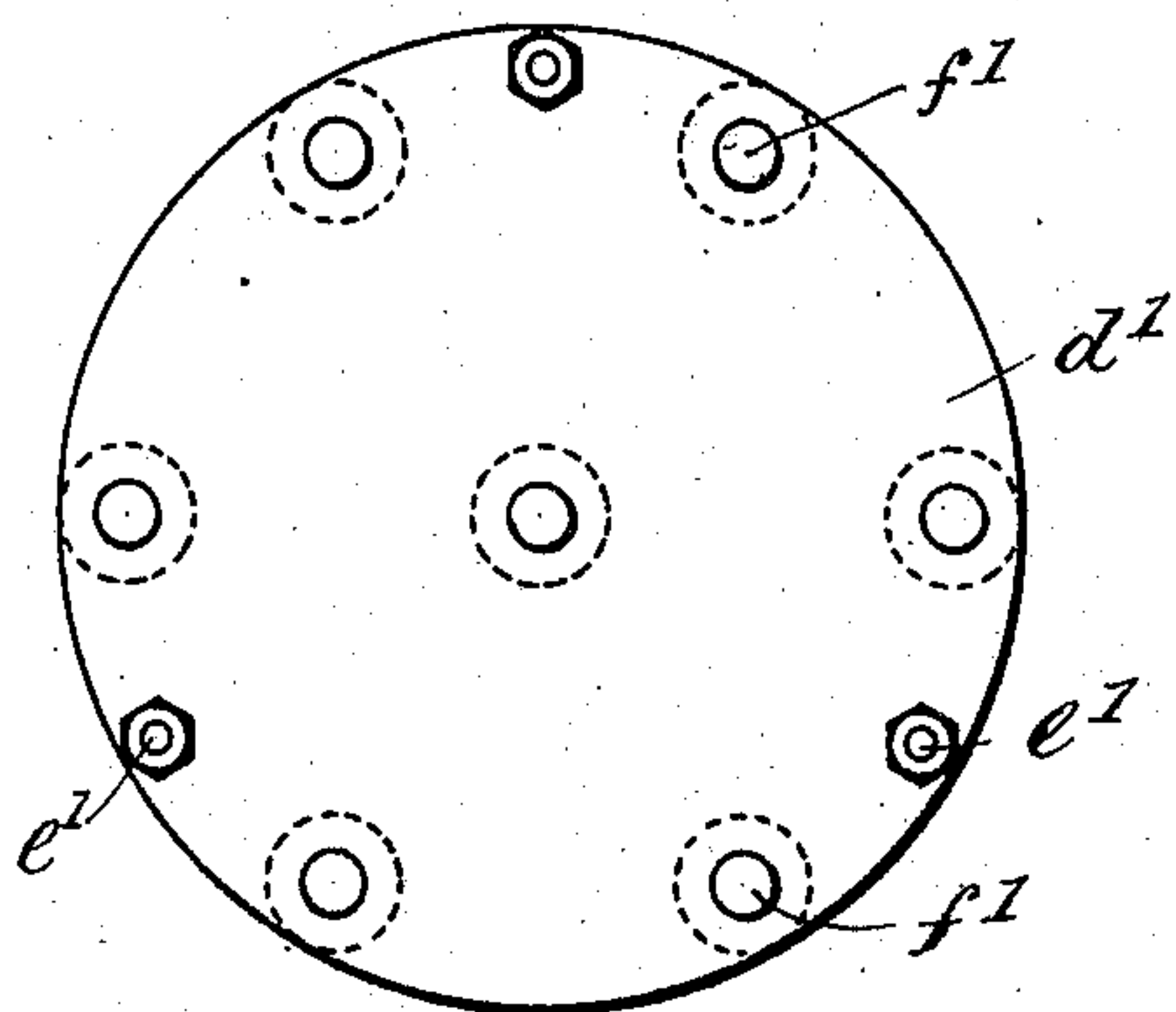


Fig. 9.

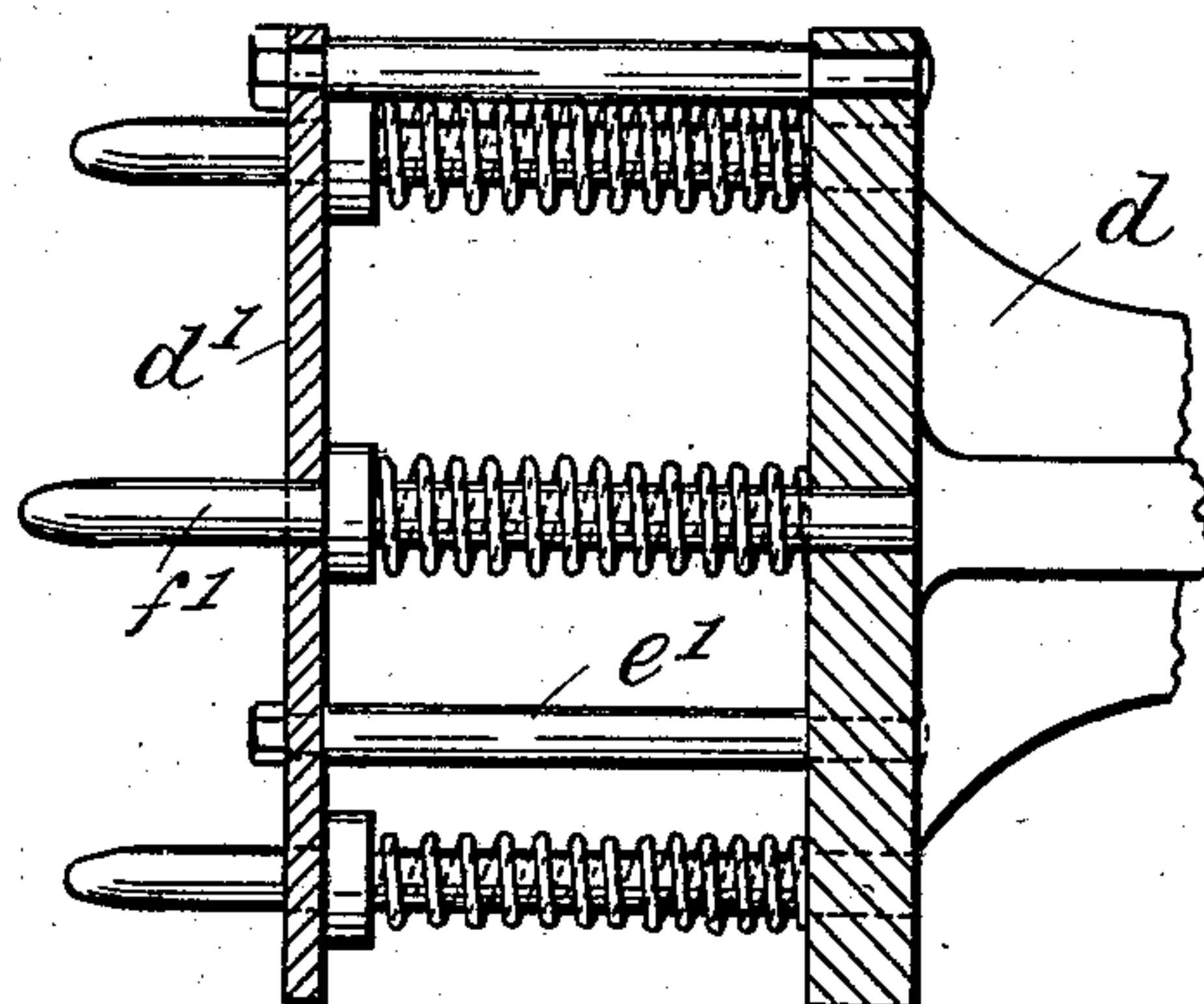


Fig. 12.

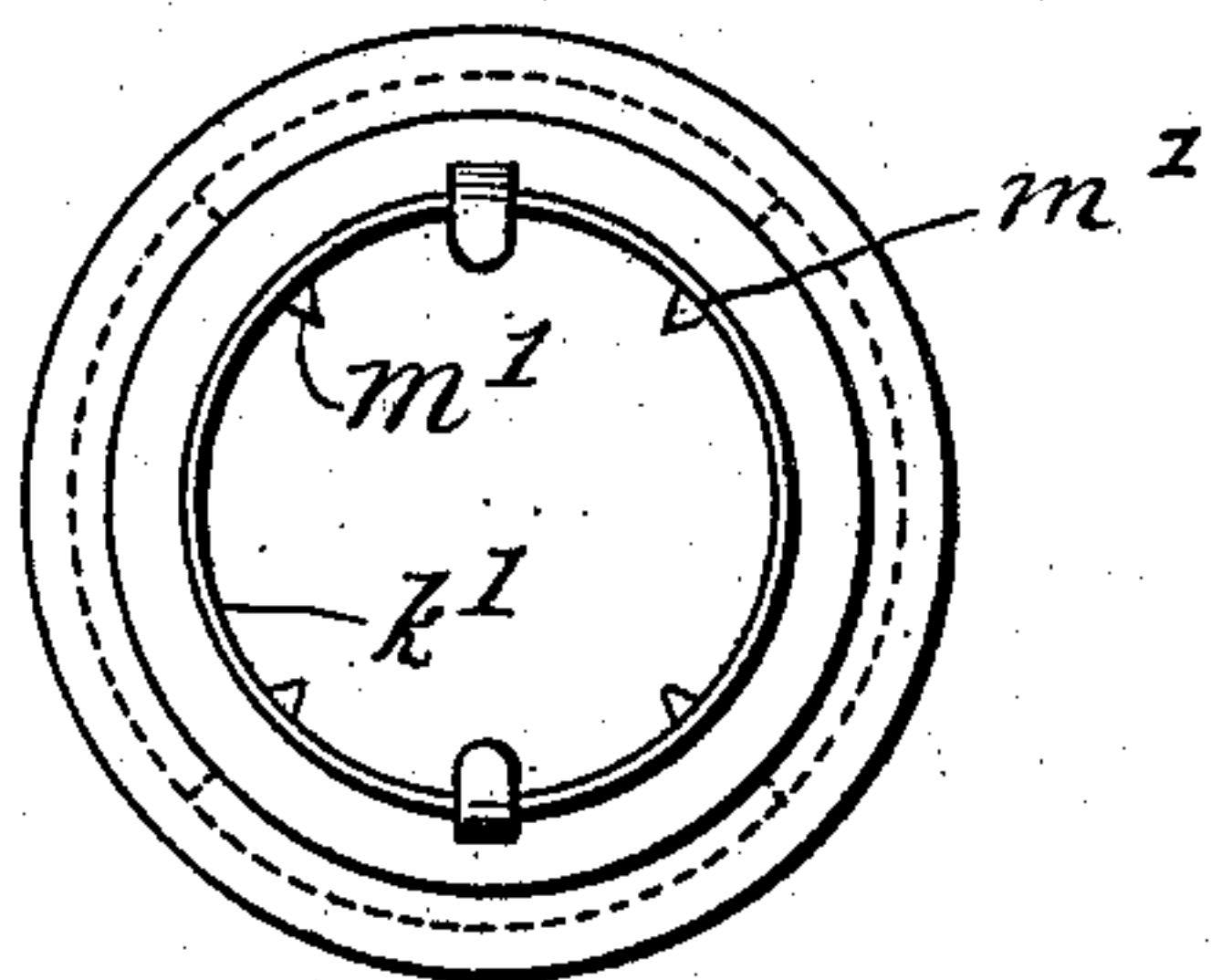


Fig. 11.

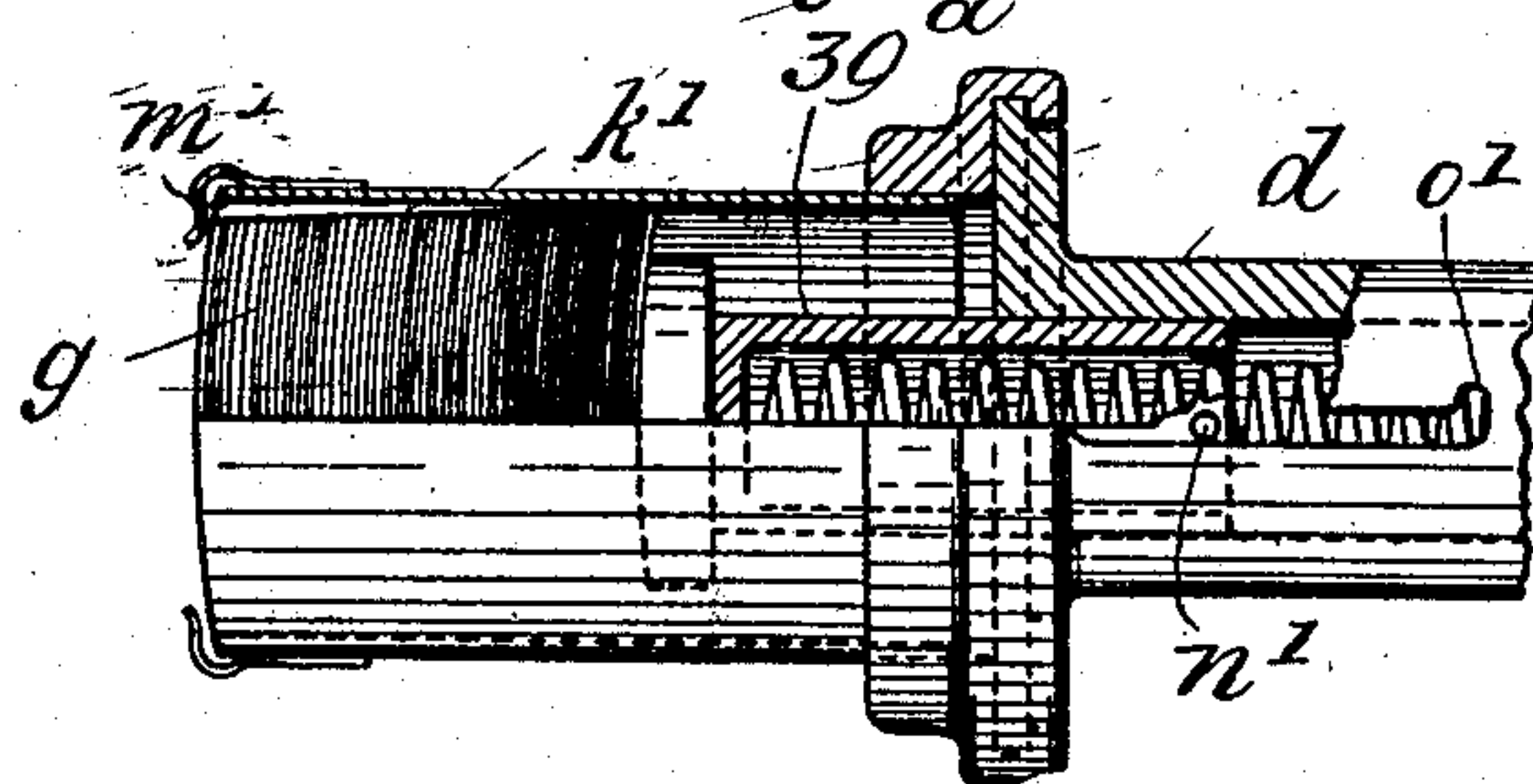
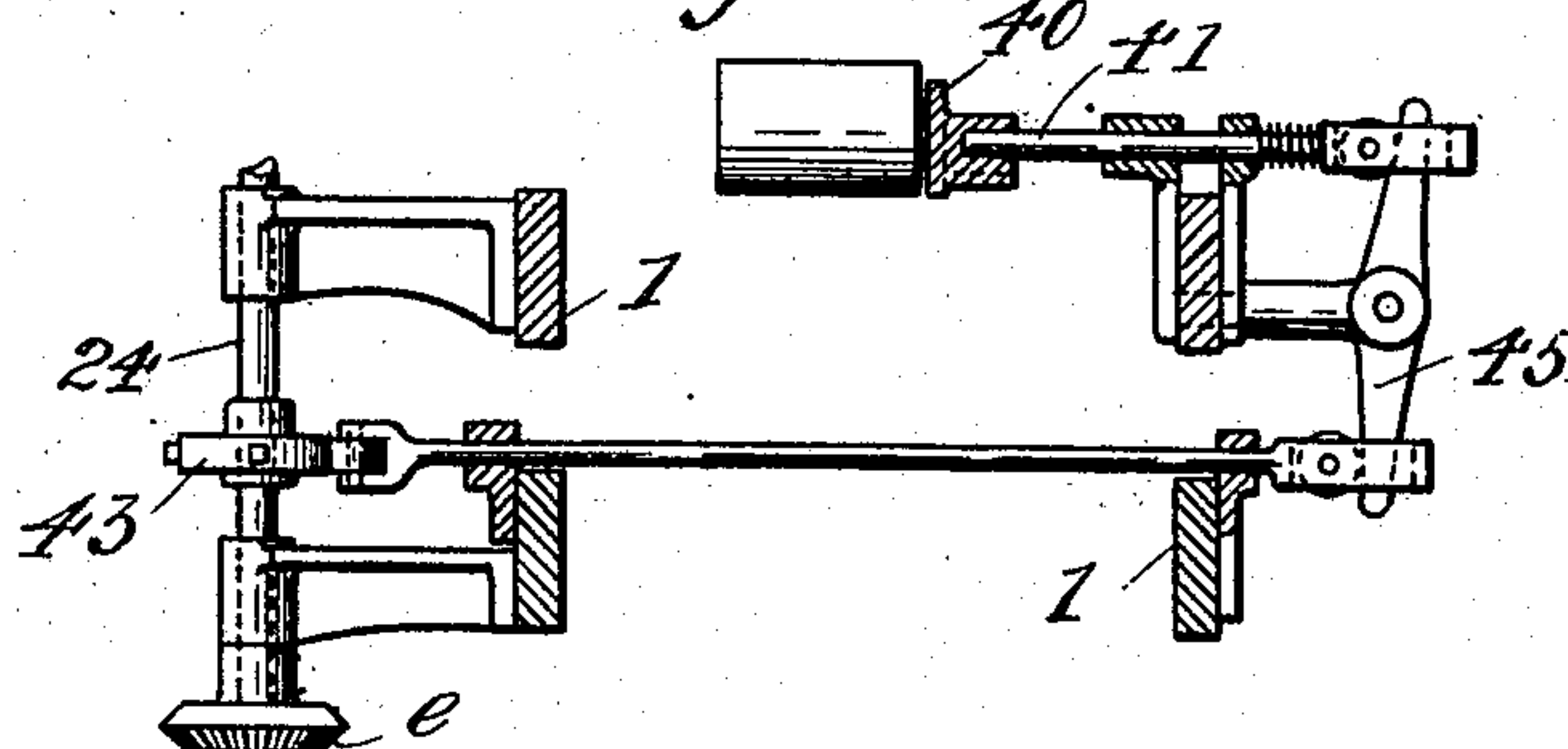


Fig. 13.



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UNITED STATES PATENT OFFICE.

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LABELING-MACHINE.

No. 894,789.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed November 12, 1906. Serial No. 342,937.

To all whom it may concern:

Be it known that I, FREDERICK W. WILD, Jr., of the city of Baltimore and State of Maryland, have invented certain Improvements in Labeling-Machines, of which the following is a specification.

This invention relates to a machine whereby labels are applied to the heads of cans without respect to the bodies which may or may not be provided with labels in the ordinary manner, as will hereinafter fully appear.

In the further description of the said invention which follows, reference is made to the accompanying drawings forming a part hereof, and in which,—

Figure 1 is a partly sectional side elevation of the improved labeling machine, and Fig. 2 is a plan view of the same. Figs. 3, 4, 5 and 6 are enlarged details of the machine as illustrated in Figs. 1 and 2, and hereinafter described. Fig. 7 is a view similar to Fig. 1, illustrating certain modifications in the construction of the machine, and Fig. 8 a plan of Fig. 7. Figs. 9, 10, 11 and 12 are enlarged views of details of the machine, as illustrated in Figs. 7 and 8, and hereinafter described. Fig. 13 is a transverse view of parts of the machine shown in Figs. 7 and 8 and on the same scale.

Referring now to Figs. 1 to 6, inclusive, of the drawing, 1 is the frame of the machine, and *a, a* are the legs thereof.

The runway whereby the unlabeled cans are delivered to the labeling appliances of the machine is denoted by 2, and the runway which carries away the labeled cans is represented by 3.

A star wheel 4 on a shaft 5, rotated by mechanism hereinafter described, serves to produce an intermittent delivery of cans from the runway 2 to the label-applying devices.

7 and 8 are sprocket wheels secured to horizontal shafts 9 and 10 respectively, carrying the endless sprocket chain 12. The sprocket chain 12 is provided with carriers 13 to which the cans are delivered from the runway 2.

15 is the driving shaft of the machine, from which motion is communicated to the shaft 10 of the sprocket wheel 8 by means of the sprocket wheels 17 and 18 and the chain 19.

The shaft 9 is provided with a sprocket wheel 20 and the shaft 5 with a similar wheel

21, and the two wheels are united by a chain 22, consequently when the endless can-carrying chain 12 is in motion the star wheel 4 is in rotation.

23, 24 and 25 are vertical shafts situated at one side of the frame 1, adapted to rotate in suitable bearings, and to these shafts respectively, are fastened the heads 26, 27 and 29, each one of which has a separate and distinct function to perform.

Each of the heads just referred to has four arms *d* and the arms of the head 26 are for the purpose of applying paste to the heads of cans, while those of the head 27 carry labels in stacks and deliver the labels singly to the pasted head of the cans as they traverse the machine. The arms of the head 29 press the newly applied labels tightly to the can-heads.

The shafts 23, 24 and 25 are rotated at a uniform speed by the miter gears *e* and *f*, the former being on the said shafts, and the latter on the horizontal shaft 30 which derives its movement from the driving shaft 15 by means of the spiral pinion 32, and its spiral wheel 33 which is on the shaft 30.

The arms *d* of the head 26 have cylindrical faces (see Fig. 4) formed of some soft material such as sponge rubber, and they receive paste from the box 35 through the medium of two frusto-conical rollers 37 and 38 which receive their motion from the shaft 23 by a suitable train of gearing as is well shown in Fig. 1. The rollers 37 and 38 may have surfaces of any approved description, but it is believed that the latter which rotates in the body of paste should be fluted, and the former knurled as shown in Fig. 1.

The arms *d* of the head 27 are bored and fitted with spring-held plungers 39 having cylindrical faces over which are stacked labels.

In Fig. 5 a stack of labels is denoted by *g*, and it will be seen that it is held in position by knurled stems *h* provided with small sharp blades *j* which as the top of outer label is detached, cuts through the paper. By knurling the stems *h* the friction between them and the edge of the stack of labels is increased, which has the effect of preventing the dislodgment of more than one label at a time.

The proper curvature of the stack of labels is further preserved by the additional stems *k* (see Fig. 6) which are provided with spring

fingers *m* arranged to press on the surface of the outer label, and from under which the said label is drawn in the label-affixing operation hereinafter described.

5 The arms *d* of the head 29 have a flat surface formed preferably of sponge rubber which presses tightly on the newly affixed labels and completes their attachment to the can heads.

10 40, 40 are abutments, one of which is placed opposite each head to sustain the can during the pasting, label-affixing and label-pressing operations. The intervening abutments 40^a serve to keep the cans in proper position

15 when not being operated upon as described. When the machine is in operation, a can passing from the runway 2 to the runway 3 receives a coating of paste from an arm of the first head 26 which adapts it upon reaching 20 the second rotary head 27 to detach a label from a stack. When the can reaches the third and last head 29, the label is firmly pressed in contact with the can head.

In the operation of the machine just described one head only of the cans is provided 25 with a label, and should it be required to label both heads of the cans they can be put through the machine a second time in a reversed position; or the label affixing devices 30 described could be duplicated in the machine, the second set being substituted for the abutments 40.

In the foregoing, the machine has been described as adapted to apply paste to the 35 cans, but as paste requires a considerable time to dry, and until dry, has little adhesive qualities, I propose to adapt the machine to use an adhesive which is liquefied by heat and applied hot to the can heads. I also propose 40 to substitute for the cylindrical faces of the arms *d* of the head 26, hot cement-applying mechanism which will adapt itself to any inequality in the surfaces of the can heads, or apply the cement to the can heads by a mul- 45 tiplicity of independent stems. I also propose to provide the abutment opposite to the head 27 with an endwise movement towards the can, at the moment that a stack of labels is brought into applying position, in order 50 that the can may be forced into contact with the outside label or the label to be taken from the stack. I also propose to confine the spring-held stack of labels in a cylindrical casing or shell, and provide the inner surface 55 of the said casing with devices whereby the labels are curved so as to present a cylindrical surface to the can heads independently of such surface being affected by the curvature of the plunger 39 which serves to move 60 the entire stack forward or towards the cans.

The modifications above briefly referred to are shown in Figs. 7 to 13, inclusive, which will now be fully described.

Referring to Figs. 9 and 10, it will be seen 65 that instead of the construction of the arms

d of the head 26 shown in Figs. 1, 2 and 4, they are made with flat ends and provided with circular plates *d*¹ spaced from the said ends, and held in place by bolts *e*¹. Supported by the arms and the circular plates 70 *d*¹, and adapted to have a yielding longitudinal movement, are the stems *f*¹ the rounded ends of which are anointed with heat-liquefied cement by means of a disk *g*² arranged to be rotated in a suitable vessel *h*¹ shown in 75 Figs. 7 and 8. The cement may be heated by any available means and preferably by electricity.

Referring to Figs. 11 and 12, it will be seen that the stack of labels is confined in a cylindrical casing or shell *k*¹ instead of between the 80 knurled stems *k* shown particularly in Fig. 5, and the curvature of the labels independently of that produced by the spring-backed plunger 39^a is effected by the fixed inclined 85 strips *m*¹. The cylindrical shell *k*¹ is removable in order that a stack of labels may be inserted therein from the rear of the shell, the plunger 39^a being held back at the time by means of a pin *n*¹ which is made to enter the 90 lateral extension of the slot *o*¹.

The pressing of a can against the outer label of the stack, before briefly referred to, is produced by the mechanism illustrated in 95 Figs. 7, 8 and 13, and consists in securing the abutment 40 opposite the label-affixing head 24, to a spring-held longitudinally-moving stem 41 which is forced inward as a can is brought into labeling position, primarily by 100 the shaft 24 through the means of a disk 43 having studs on its edge which strike one end of a sliding rod carrying at each end a roller, and a pivoted cross-arm 45 against which the 105 other end of the sliding rod is in contact as shown particularly in Fig. 13. It is however within the scope of my invention to employ entirely different means to effect the motion of the abutment 40, and push the cans closely in contact with the stack of labels as described. 110

I claim as my invention:—

1. In a can labeling machine, an entrance runway having a device to intermittently discharge cans therefrom, an endless continuously moving chain with carriers to receive 115 the cans and convey them longitudinally of the machine, and a delivery runway to which the cans are delivered by the endless chain, combined with devices situated between the two runways to paste the head of a can, apply 120 a label to the pasted surface of the can, and then press the applied label tightly to the can head, the three operations being performed in sequence, substantially as specified. 125

2. In a can labeling machine, an entrance runway having a device to intermittently discharge cans therefrom, an endless moving chain with carriers to receive the cans and convey them longitudinally of the machine, 130

and a delivery runway to which the cans are delivered by the endless chain, combined with a rotary head provided with arms each of which is adapted to come into contact with the head of a can as it passes the rotary head, a paste receptacle, means to transfer paste from the paste receptacle to the said arms, and other means to apply a label to the pasted surface of the can, substantially as specified.

3. In a can labeling machine, an entrance runway having a device to intermittently discharge cans therefrom, an endless moving chain with carriers to receive the cans and convey them longitudinally of the machine, and a delivery runway to which the cans are delivered by the endless chain, combined with a rotary head provided with arms each one of which is adapted to come into contact with the head of a can as it passes the rotary head, a paste receptacle, means to transfer

paste from the receptacle to the said arms, other means to apply a label to the pasted surface of the can, and devices to subsequently press the applied label to the can head, substantially as specified.

4. In a can labeling machine, an entrance runway having devices to intermittently discharge cans therefrom, an endless chain with carriers to receive the cans and convey them longitudinally of the machine, and a delivery runway to receive the cans from the endless chain, combined with devices to apply paste to the can heads while the same are in motion, other devices to apply labels to the pasted surfaces of the cans, and means to press the applied labels to the can heads, substantially as specified.

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Witnesses:

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