

No. 821,643.

PATENTED MAY 29, 1906.

C. A. JOERISSEN.

RIBBON ATTACHMENT FOR SIGHT WRITING TYPE WRITERS.

APPLICATION FILED MAR. 30, 1905.

3 SHEETS—SHEET 1.

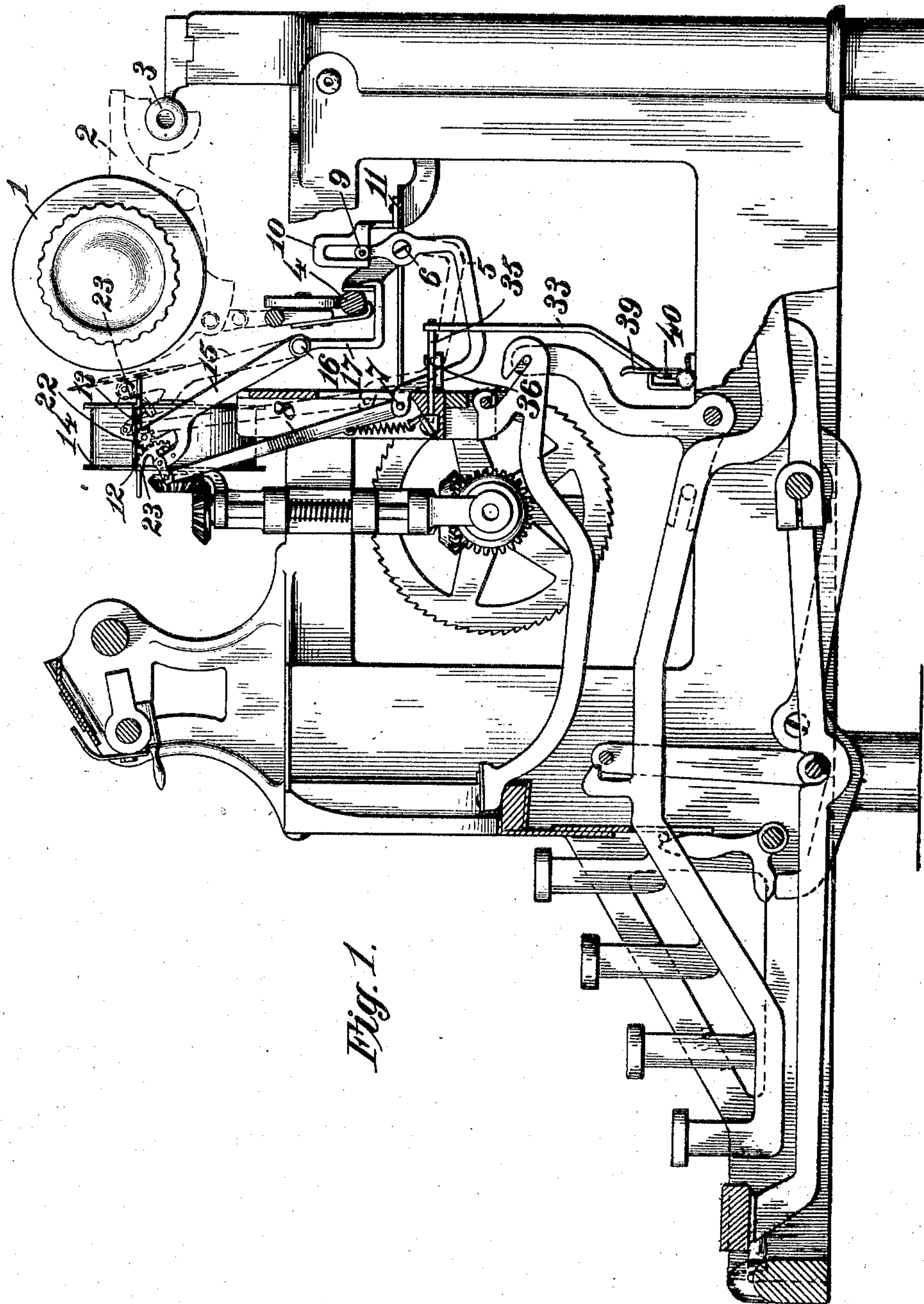


Fig. 1.

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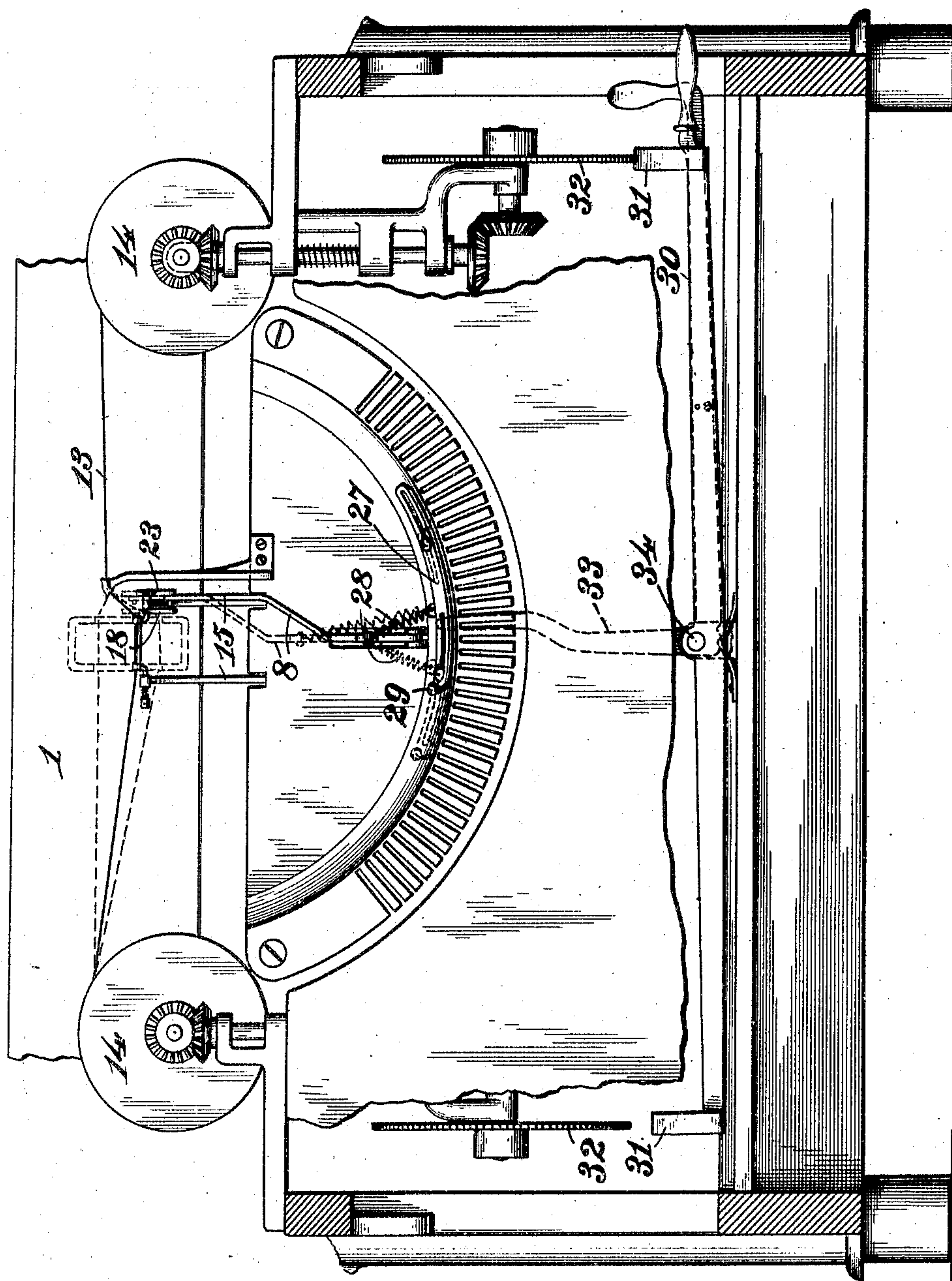


Fig. 2.

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3 SHEETS—SHEET 3.

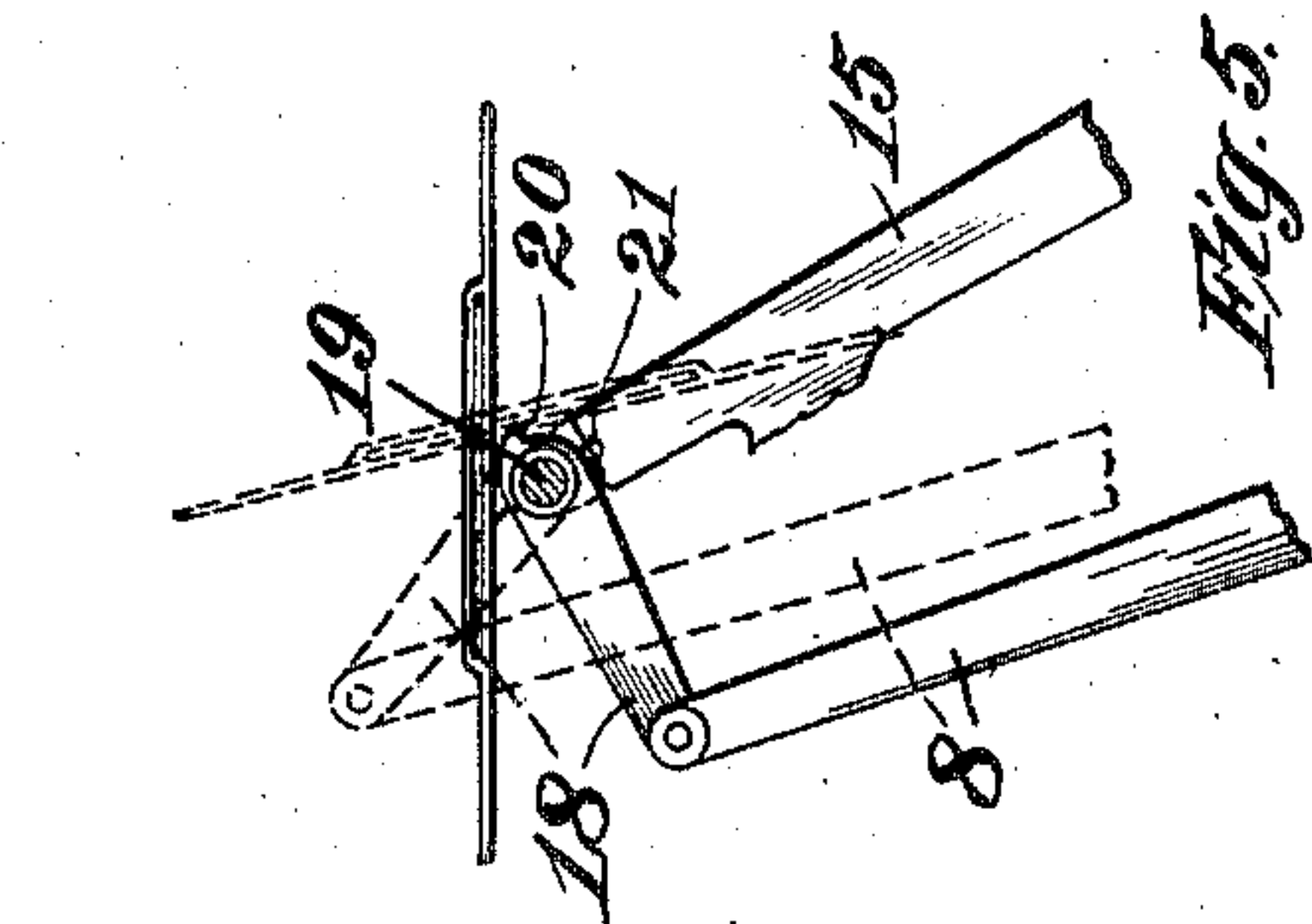


Fig. 5.

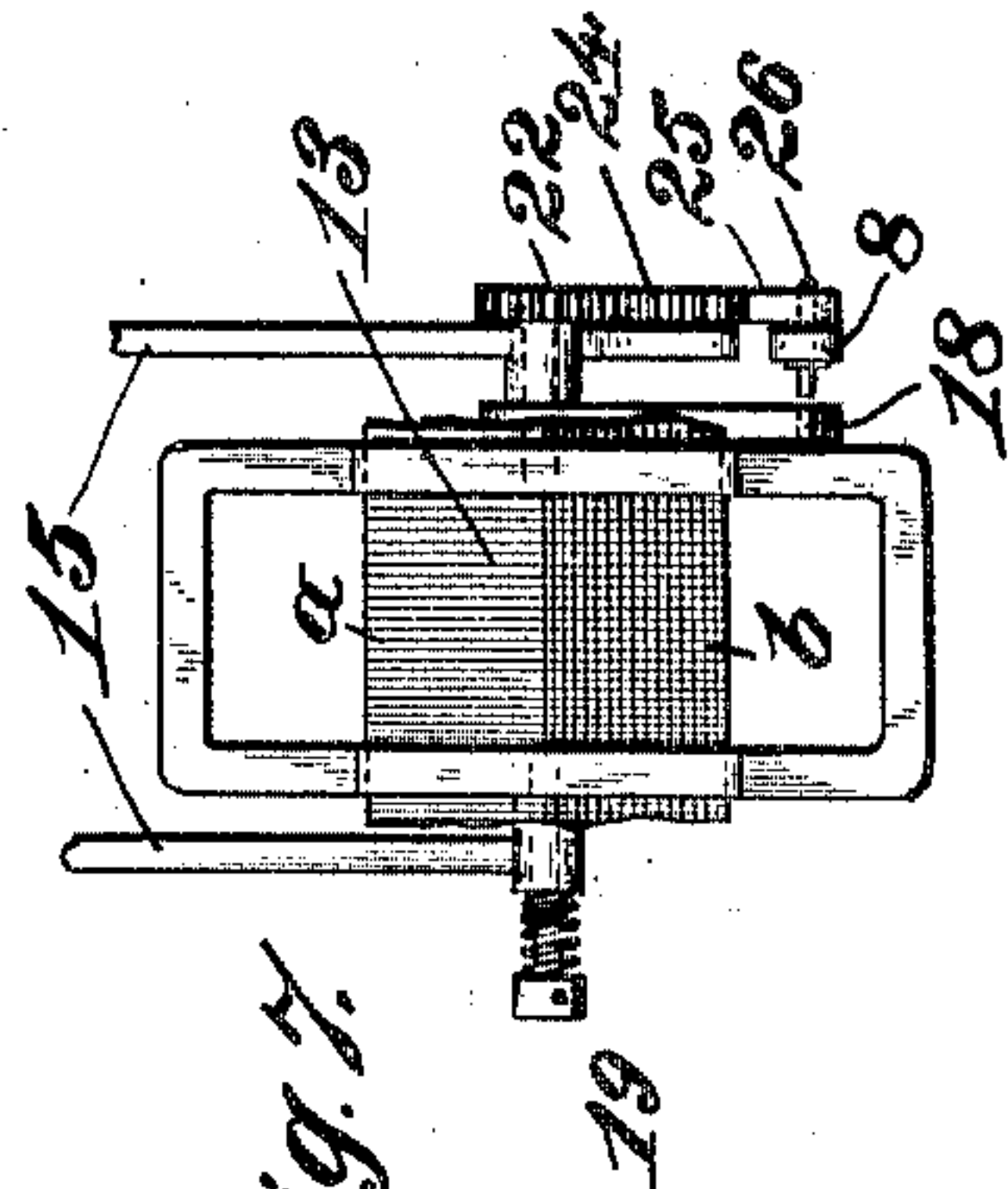


Fig. 7.

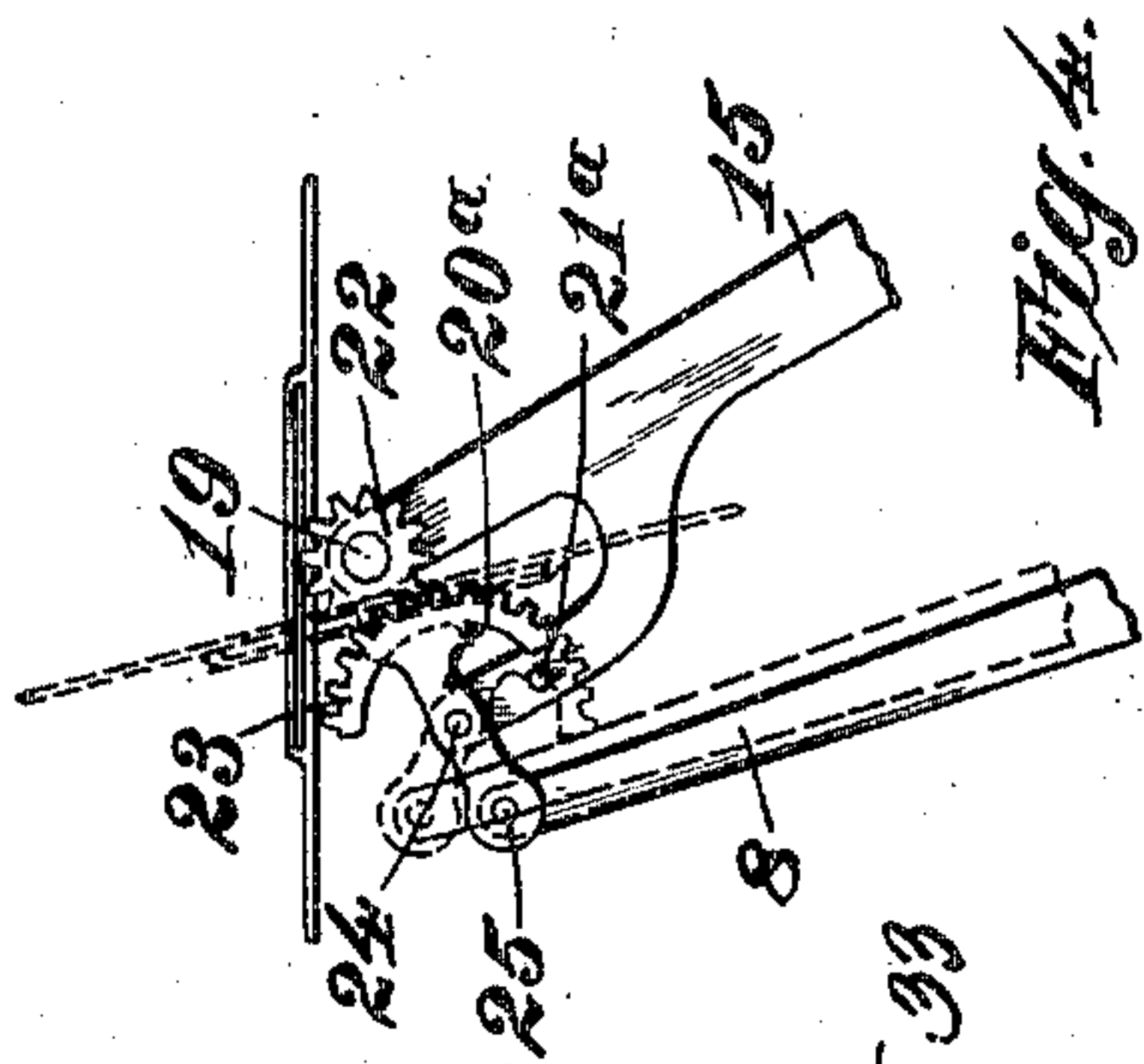


Fig. 4.

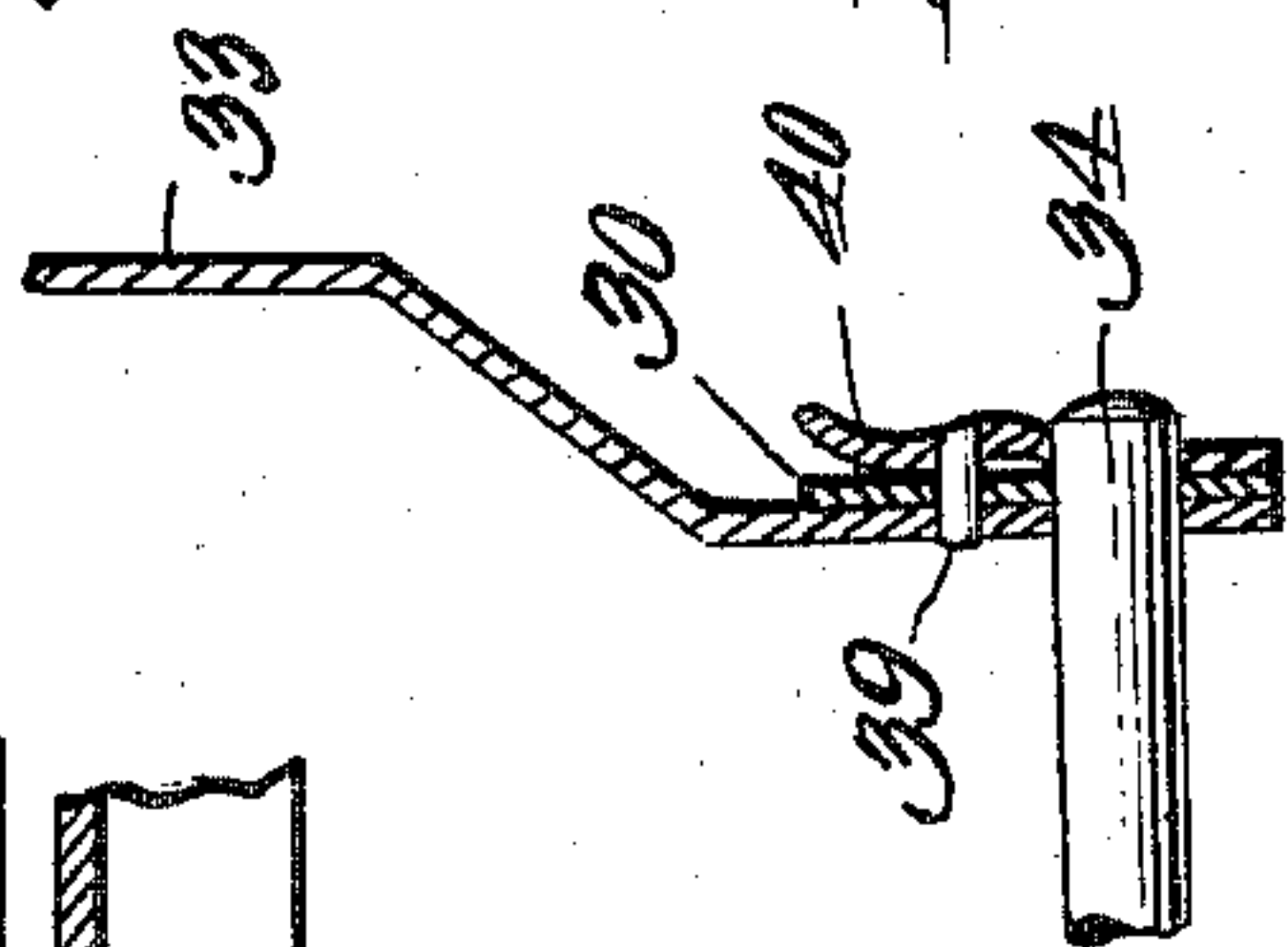


Fig. 9.

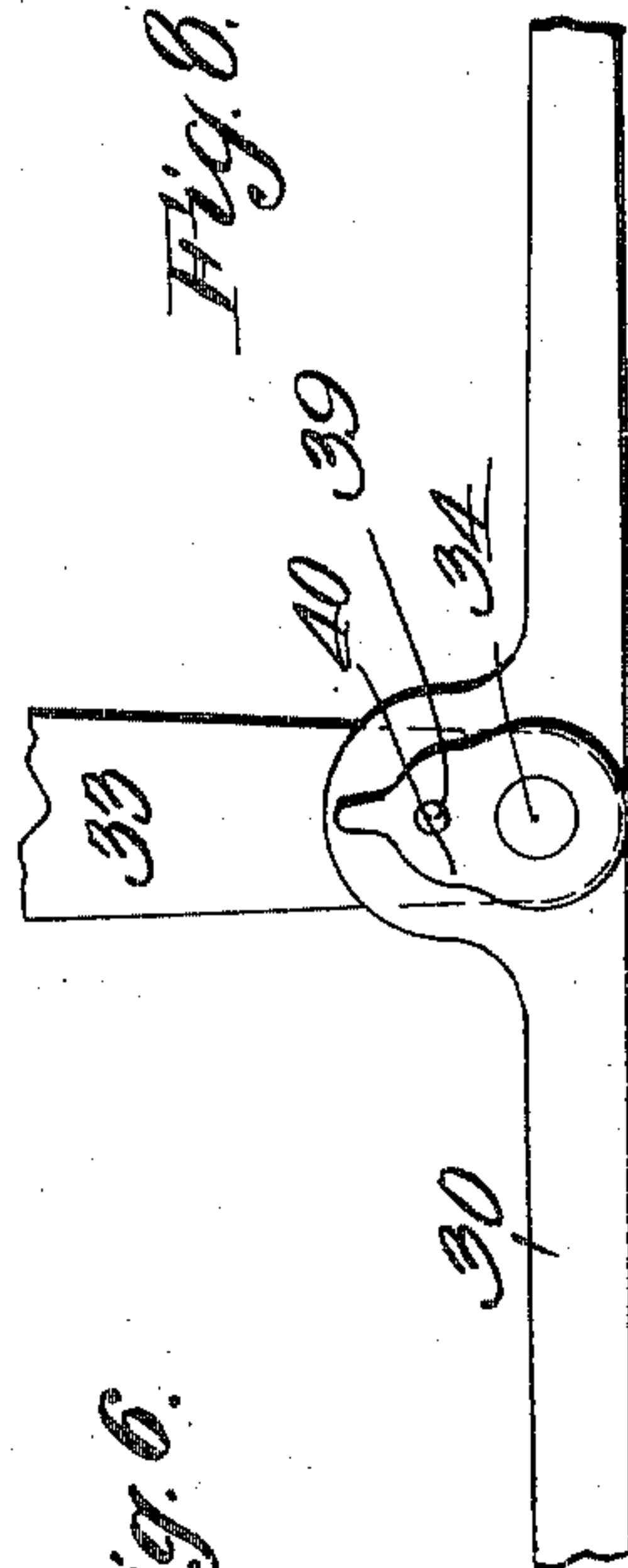


Fig. 8.

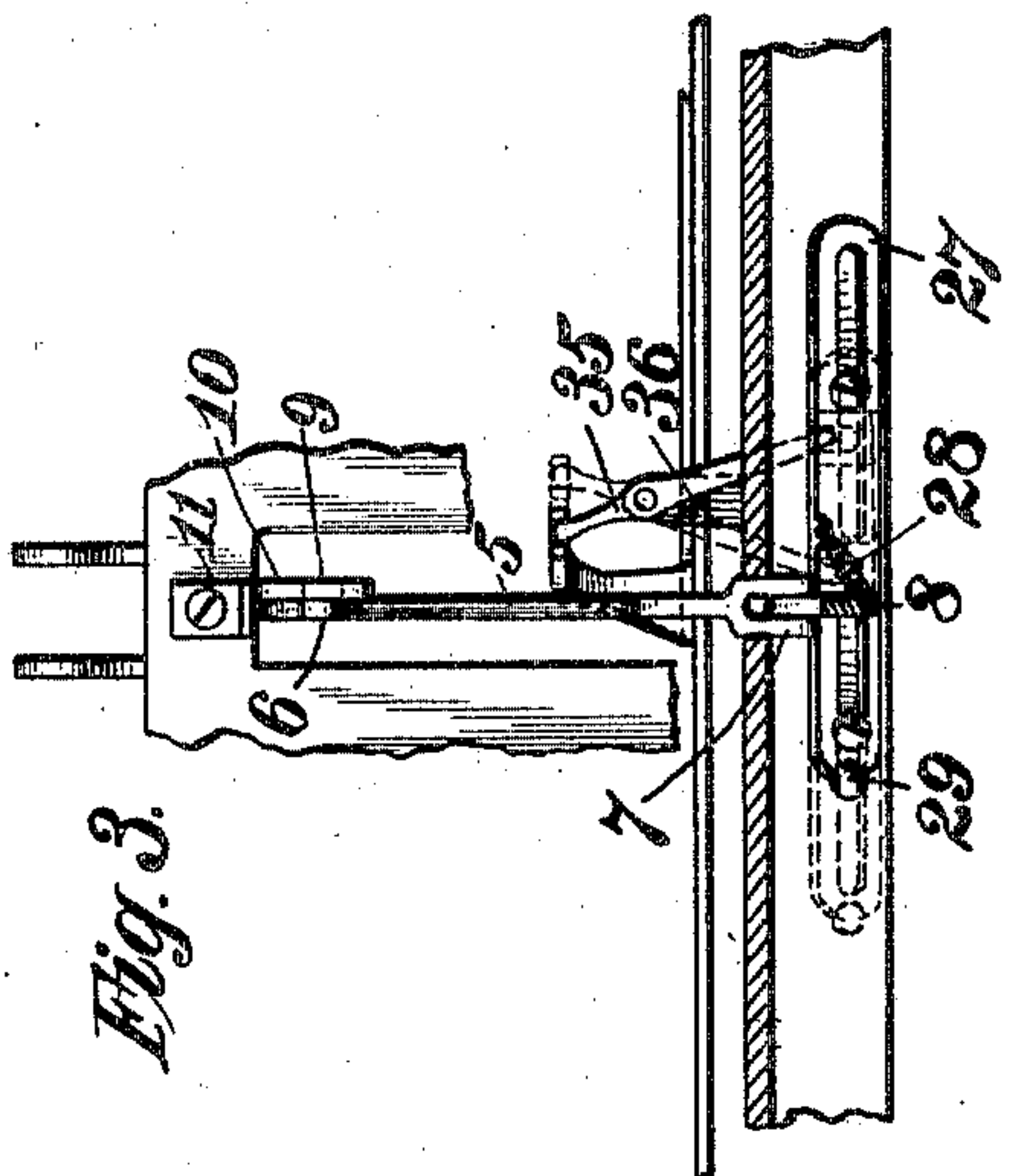


Fig. 3.

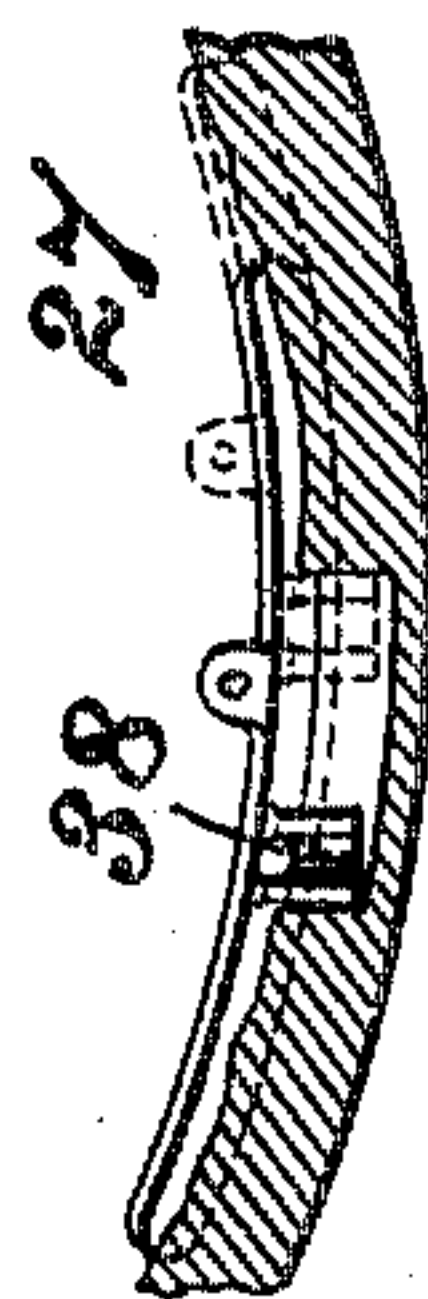


Fig. 6.

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UNITED STATES PATENT OFFICE.

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RIBBON ATTACHMENT FOR SIGHT-WRITING TYPE-WRITERS.

No. 821,643.

Specification of Letters Patent.

Patented May 29, 1906.

Application filed March 30, 1905. Serial No. 252,904.

To all whom it may concern:

Be it known that I, CARL A. JOERISSEN, a citizen of the United States, residing in the city of Washington, District of Columbia, have invented certain new and useful Improvements in Ribbon Attachments for Sight-Writing Type-Writers, of which the following is a specification.

One feature of my present invention relates to means for shifting the ribbon from a position over the writing-point to a position which will permit the writing to be observed; and to this end my invention consists in mounting the ribbon-spools in a front-strike machine on horizontal axes and feeding the ribbon from one spool to another, with its greater transverse dimension extending horizontally instead of vertically, as has heretofore been customary in front-strike machines, the portion of the ribbon adjacent the printing-point being rotated or shifted from a horizontal to a vertical position to bring it in front of the type each time a key is depressed.

Another feature of my present invention relates to means for changing the throw or shift movement of the ribbon in order to present different portions of the ribbon over the striking-point for the purpose of economizing in the use of the ribbon or utilizing different portions of a polychrome ribbon; and to this end my invention further consists in providing shiftable means for rotating or swinging the ribbon in either of two directions, so that either of its two parallel edges may be presented upward when it is brought over the striking-point.

My invention further consists in combining with this shifting means connections through which the shifting or changing of the throw of the ribbon may be accomplished independently and manually, so that when the mechanism is set to throw the ribbon in a given direction this particular throw will continue to be imparted to the ribbon and the writing will be in a straight line on that portion of the ribbon presented by the throw until the mechanism is again set to reverse the throw and cause the writing to take place in a straight line along a different portion of the ribbon.

The invention further consists in combining with this means for setting the reversing mechanism a connection whereby the change or shift in the direction of oscillation of the ribbon will follow the shifting of the ribbon-feed, so that when it is desired to employ the

invention as a means of economizing in the use of the ribbon the writing may be made to take place in straight lines first along one side of the middle longitudinal line of the ribbon and then in a straight line on the other side of said line.

My invention will be fully understood upon reference to the accompanying drawings, in which one embodiment of my invention is illustrated as applied to a known form of front-strike machine.

In the drawings, Figure 1 is a vertical section of the machine from front to rear. Fig. 2 is a vertical section from side to side in a plane in front of the ribbon-guide. Fig. 3 is a detail horizontal section showing the means for shifting the ribbon-guide through a reversing connection to change the throw of the ribbon-guide. Fig. 4 is a detail side elevation of the means for turning the ribbon-guide in one direction. Fig. 5 is a side elevation of the means for turning the ribbon-guide in the other direction. Fig. 6 is a vertical section through the slide which throws the connecting-link into one or the other of the reversing connections. Fig. 7 is a top plan view of the ribbon-guide and its connections. Fig. 8 is a rear elevation of the means for throwing the ribbon-feed shift into and out of engagement with the means for inverting the throw of the ribbon, and Fig. 9 is a sectional view of the same.

Referring to Fig. 1, 1 represents the printing-platen, mounted on the paper-carriage 2, fulcrumed at 3 and adapted to be moved upward or returned to its normal position by the shifting-frame 4 for upper and lower case writing, as is well known in machines of this class. Mounted upon the shift-frame 4, so as to move with it and maintain constant relation thereto, is the ribbon-interposing lever 5, fulcrumed at 6, connected at 7 with a link 8 and engaged at 9 by a slotted arm 10, mounted upon the horizontal sliding bar 11, which is actuated each time a key is depressed. 12 represents the ribbon-guide, which rests normally in horizontal position and receives the ribbon 13 from the spools 14, that turn on horizontal axes. In order that the ribbon may be presented over the printing-point, the guide 12 is mounted on a lever 15, consisting of two members fulcrumed at 16 in a supporting-arm 17 on the upper-case shift-frame 4, and lever 15 is swung upon its fulcrum 16 by the link 8 each time a key is depressed; but the link 8 is connected with

the lever 15 by an arm 18 in the normal operation of the ribbon attachment, so that as link 8 moves upward arm 18 swings the ribbon-guide on its pivot 19 until its shoulder 20 strikes a pin 21, when the ribbon-guide, with the ribbon, will be in the position shown in dotted lines in Fig. 5, and further upward movement of link 8 will then throw the lever 15, with the now erect ribbon-guide, over toward the printing-platen and in time to receive the stroke of the type. If the ribbon-guide is to be arranged to oscillate in one direction only, its pivot 19 could be arranged near one end thereof and the movement obtained through the lever 15 could be eliminated. In other words, lever 15 is utilized to permit the ribbon-guide to be centrally pivoted and swing in either direction and thereafter move over to cover the printing-point.

To oscillate the ribbon in a direction opposite to that described with reference to Fig. 5, the pivot or shaft 19 is also provided with a pinion 22, Fig. 4, which is engaged by an arcuate rack 23, pivoted at 24 and having an arm 25, that is engaged by the link 8 when the latter is moved out of engagement with the arm 18. As will be seen from Fig. 7, the arms 25 and 18 are spaced apart a distance to permit lateral play of link 8 between them, so that the pin 26, carried by said link, may enter a perforation in either of said arms. When engaged with the arm 25, the circular rack swings until its shoulder 20^a meets the pin 21^a, when the ribbon-guide will be in the position shown in dotted lines in Fig. 4, and further movement of link 8 under the influence of the ribbon-interposing lever 5 will swing the ribbon over the printing-point, but present a different portion of the ribbon over such point from that presented by the movement illustrated in Fig. 5.

In order to determine the engagement of link 8 at its upper end, a friction-retained slide 27 has a limited movement on the frame of the machine and has an elastic connection 28 with the link 8, so that when the slide occupies the position shown in full lines in Figs. 1 and 3 the link 8 will be drawn into engagement with the arm 25, as shown in full lines in Figs. 4 and 7; but when the slide is moved to the position shown in dotted lines in Figs. 2 and 3 and in full lines in Fig. 6 link 8 will be thrown in the opposite direction and made to engage the arm 18, as indicated in Fig. 5. Slide 27 may be adjusted at will manually and independently of other operating parts of the machine by pressing the knob 29, Figs. 2 and 3, to one side or the other. The points of striking upon the ribbon will lie in straight lines parallel to the length of the ribbon and nearer one edge or the other, according to the direction in which the slide 27 is moved.

In order that the movement of the slide 27 may follow the manually-set ribbon-reversing device, the lever 30, which carries the

dogs 31, movable alternately into engagement with the ratchet-wheels 32, carries an arm 33, extending upwardly from the fulcrum 34, and this arm 33 engages a lever 35, Figs. 1 and 3, fulcrumed at 36 and projecting forward into a bearing 38 on the slide 27, so that each time lever 30 is rocked on its fulcrum the throw of arm 33 will transmit a movement to the slide 27 necessary to shift the connection between the link 8 and the arms 18 and 26.

In case it is desired to throw out the connection between the ribbon-feed shift and the means for inverting the throw of the ribbon, so that the machine may be adapted either for this regular shift from one side of the ribbon to the other or for polychrome work at will, a flexible arm 39, Fig. 1, which swings with the lever 30^b as a pin 40, which enters the arm 33, and which when withdrawn from said arm will permit the arm 33 to remain at rest while the lever 30 swings on its fulcrum to shift the ribbon-feed. In this case the reversal of the ribbon-throw will not follow the shifting of the ribbon-feed, and the machine is thus adapted for polychrome writing by having means for manually controlling the shifting of the ribbon-throw independently of other operating portions of the machine. It is obvious that other means might be employed for throwing the connection between the lever 30 and the slide 27. That herein employed is merely for purposes of illustration. The polychrome ribbon of two colors *a b* is illustrated at 13 in Fig. 7.

In describing my invention I have used the term "horizontal" in referring to the normal position of rest assumed by the ribbon to disclose the writing; but it is to be understood that this term is merely incidental to the use of the invention on that particular type of writing-machine selected for showing the application of my invention. When the striking-point is materially above the horizontal diameter of the paper-roll, the ribbon's normal position of rest would preferably be at a corresponding angle to the horizontal, becoming substantially vertical in the case of a downstrike-machine.

The primary feature of the invention is to have the plane of the ribbon shift from a position substantially tangential to the paper-roll or platen at the time of impact to a position substantially radial to the roll or perpendicular to the striking position after each stroke, while further features are to have the angular movement between these two positions take place on a turning axis intersecting the ribbon, for which purpose the ribbon also has a swinging movement to and from the platen, to have the oscillation take place in different directions in order to present different portions of the ribbon over the printing-point, and to provide means which while causing the oscillation and presentation of

the ribbon to follow each stroke of the machine may be set as desired to determine the direction of oscillation at will.

Having thus described my invention, what I claim as new therein is:—

1. In a sight-writing type-writer having a ribbon assuming a position adjacent and substantially tangential to the printing-platen at each imprint, a ribbon attachment comprising a ribbon-holder normally assuming a position at an angle to and removed from the printing position and means turning the ribbon-holder, with the ribbon, from the angular to the tangential position in either of two directions, at will of the operator, to determine the portion of the ribbon-holder to be uppermost and moving it bodily to bring the ribbon to and from the platen.

2. In a sight-writing machine, a ribbon-guide, and means for rotating it about one axis in either of two directions and moving it about a second axis distant from the first to bring it into a printing position substantially tangential to the platen and returning it by a reversal of said movement to its normal position of rest at an angle to said printing position.

3. In a sight-writing machine, a ribbon-guide, a swinging arm in which the ribbon-guide is trunnioned, and means operating during the printing stroke to oscillate the ribbon-guide on its trunnions and swing the arm to and from the platen.

4. In a sight-writing machine, a ribbon-guide having trunnions whose axis is substantially coincident with the middle line of the ribbon and means for oscillating the ribbon-guide upon its trunnions.

5. In a sight-writing type-writer, the combination of a trunnioned ribbon-guide mounted to move bodily to and from the platen in addition to oscillating upon its trunnions, and a connection imparting said movements to the ribbon-guide successively.

6. In a type-writing machine, a trunnioned ribbon-guide, a swinging arm on which said guide is trunnioned, a connecting-rod engaging the guide eccentrically to its trunnions and a stop limiting the rotation of the guide and causing continued movement of the con-

necting-rod to impart throw to the swinging arm.

7. In a writing-machine, a ribbon-guide, a part upon which the ribbon-guide is trunnioned and by which it is movable bodily to and from the platen, a connecting-rod whose throw rotates the ribbon-guide and moves it to and from the platen, eccentric connections into engagement with which the connecting-rod is movable laterally and a reversing-gear interposed in one of said connections whereby when the ribbon-guide is moved by it, the ribbon turns in the opposite direction to that in which it is turned by the other connection.

8. In a sight-writing machine, a trunnioned ribbon-guide, a connecting-rod through which the guide is turned on its trunnions and means for shifting the connecting-rod to determine the direction of turning movement imparted to the guide, and a pivoted ribbon-interposing lever connected with and imparting the throw to said rod.

9. In a sight-writing machine, a ribbon-guide, a connecting-rod, means for shifting the connecting-rod into engagement with the ribbon-guide to determine the direction in which the guide is to be moved, a ribbon-inverting lever by which the connecting-rod is moved, in determining its point of engagement with the guide and a ribbon-feed-shifting means having controlling connection with said pivoted lever.

10. In a sight-writing machine, a ribbon-guide, a connecting-rod, means for shifting the connecting-rod into engagement having shiftable connection with the ribbon-guide to determine the direction in which the guide is to be moved, a ribbon-inverting lever by which the connecting-rod is moved, in determining its point of engagement with the guide and a ribbon-feed-shifting means having controlling connection with said inverting-lever the connection with the ribbon-feed shift being adjustable at will.

The foregoing specification signed at Washington this 29th day of March, 1905.

CARL A. JOERISSEN.

In presence of—

HERVEY S. KNIGHT,

EDWIN S. CLARKSON.