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PATENTED MAY 5, 1908.

C. A. JOERISSEN.
RIBBON ATTACHMENT FOR TYPE WRITERS.
APPLICATION FILED APR. 14, 1905.

2 SHEETS—SHEET 1.

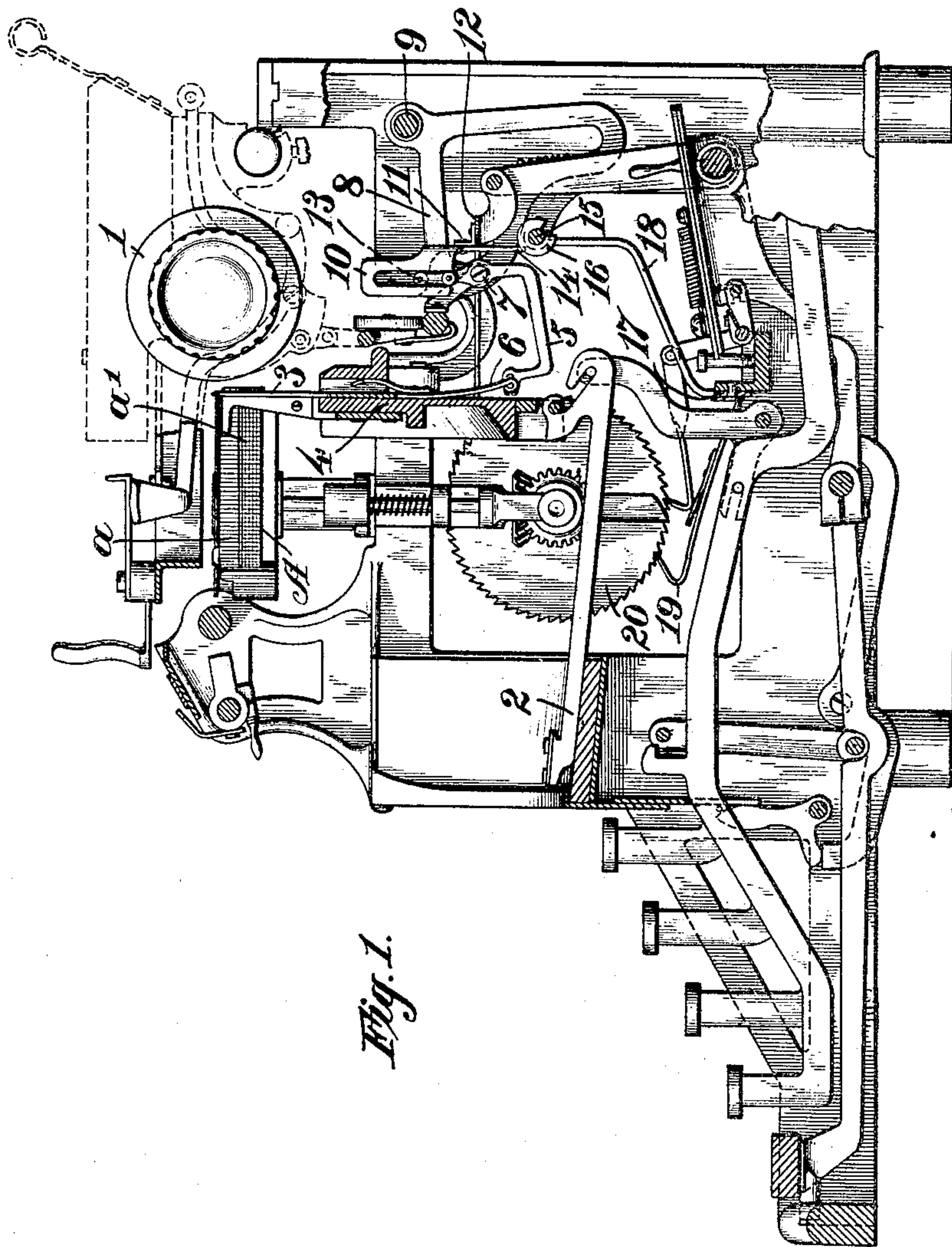


Fig. 1.

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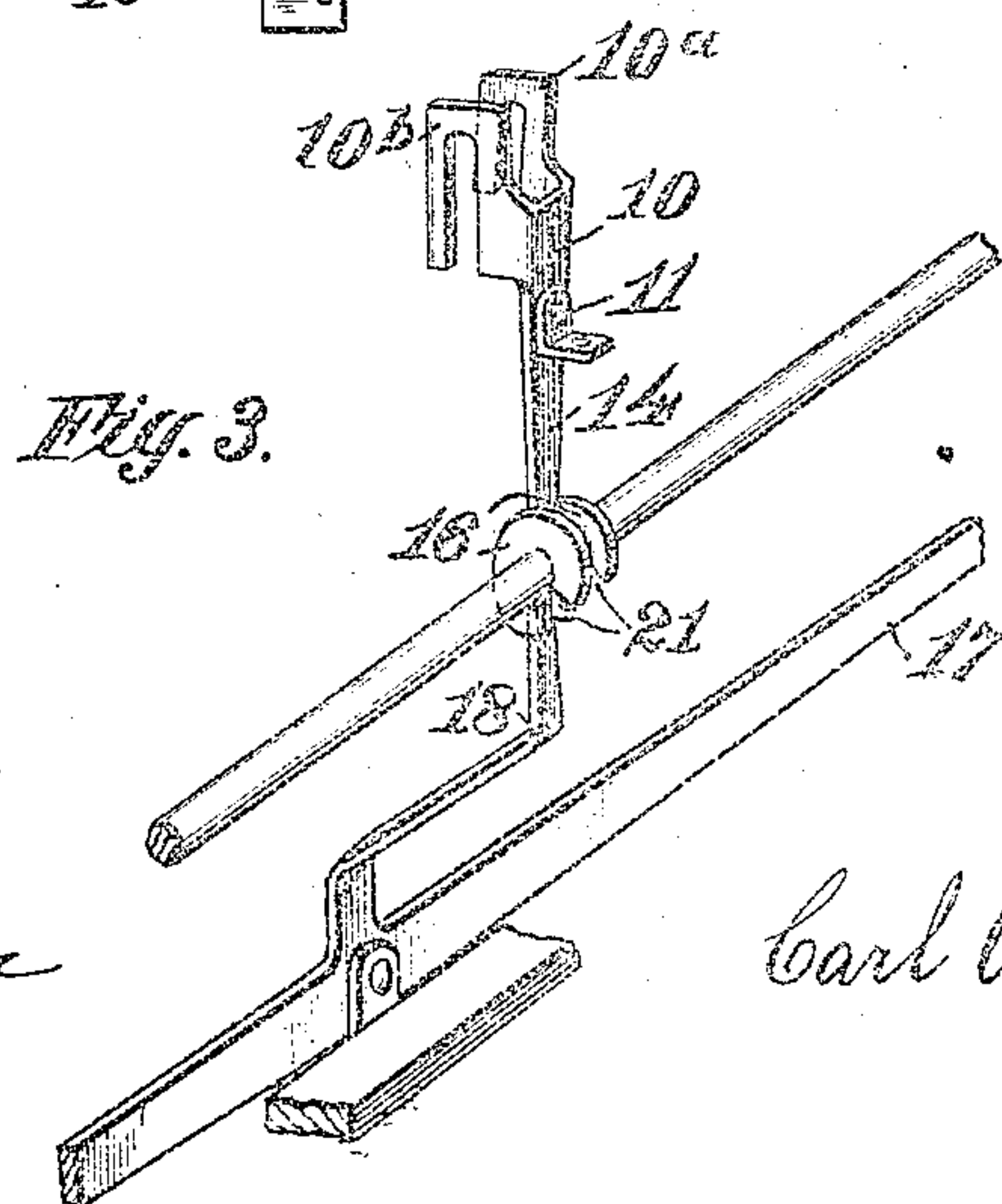
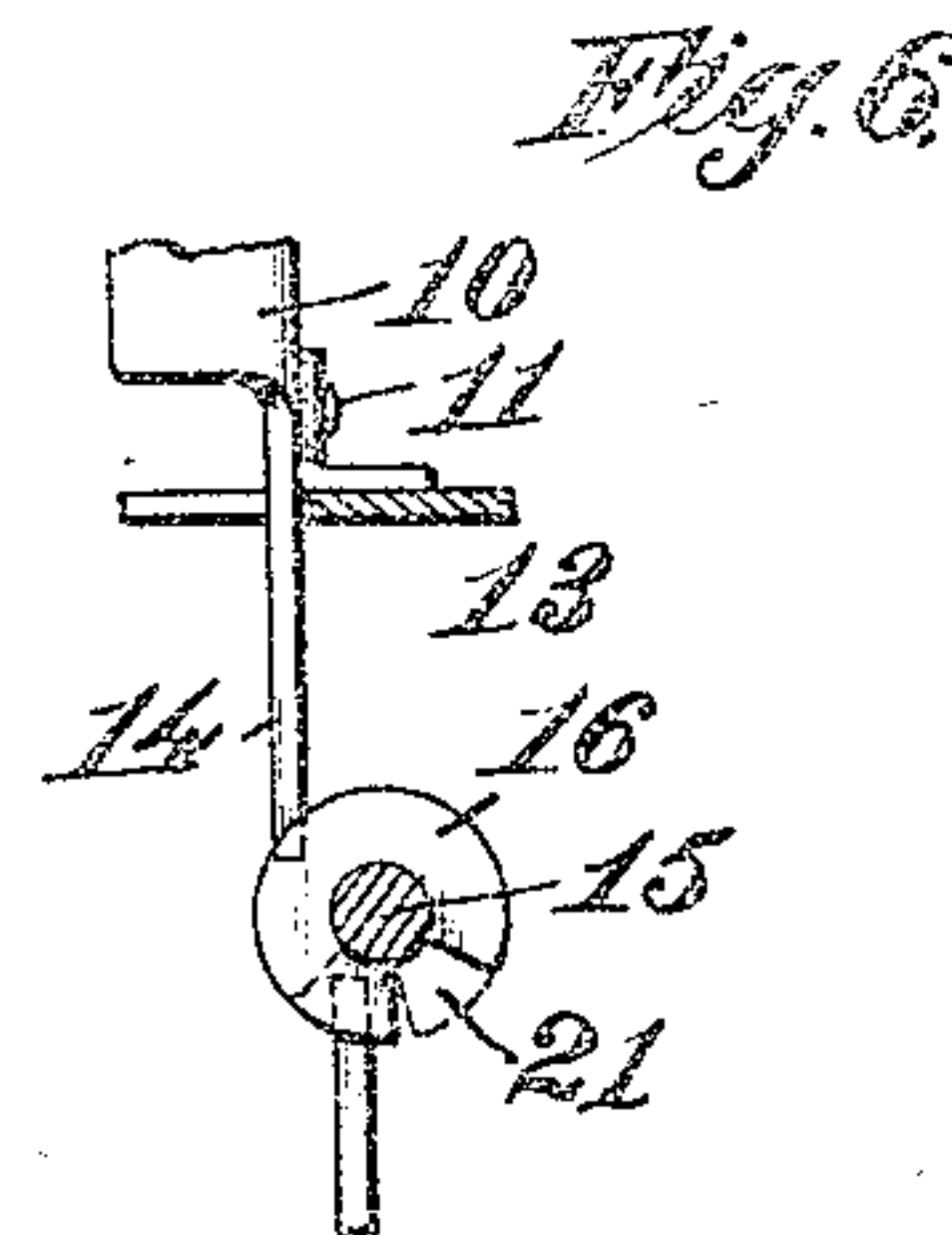
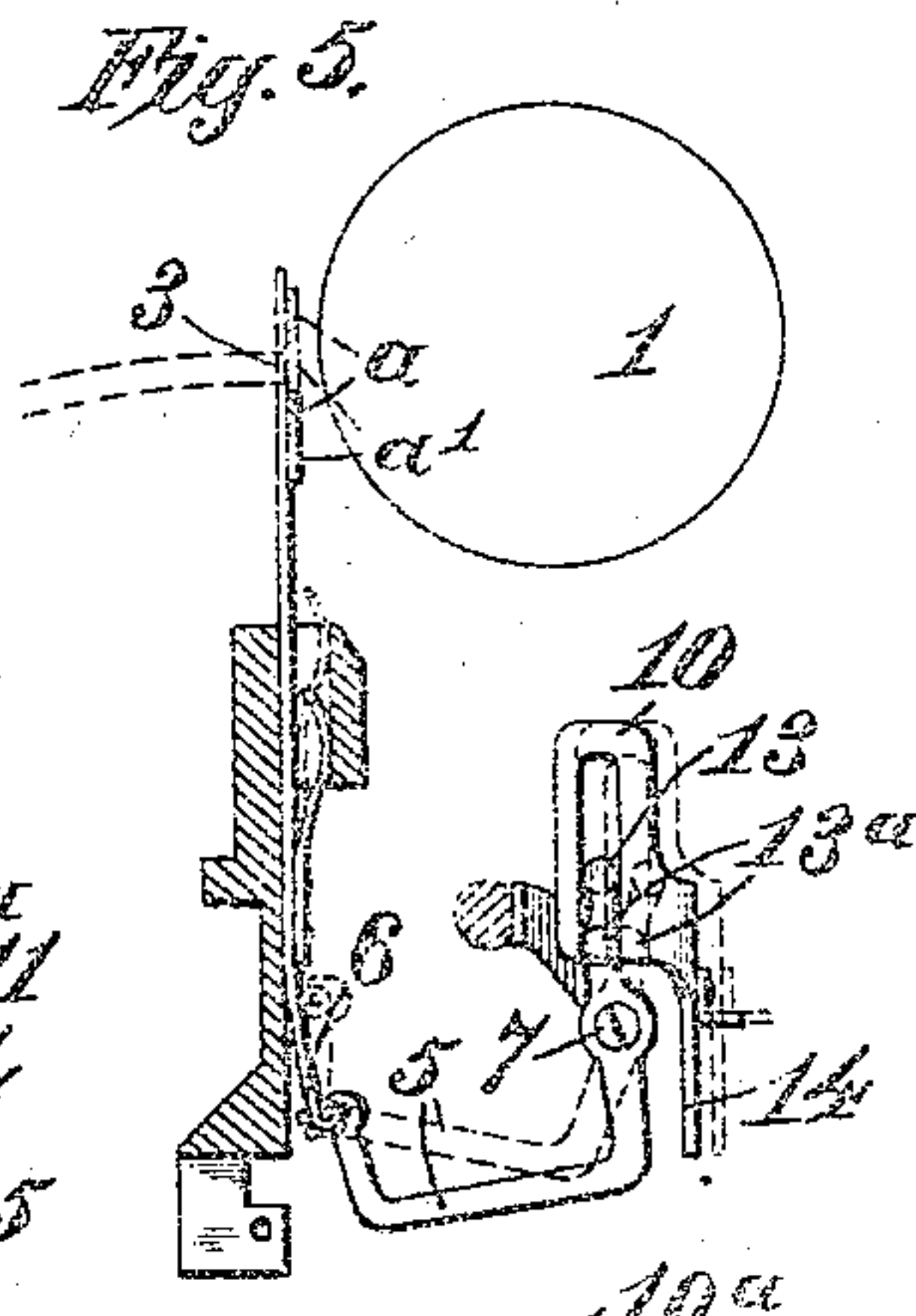
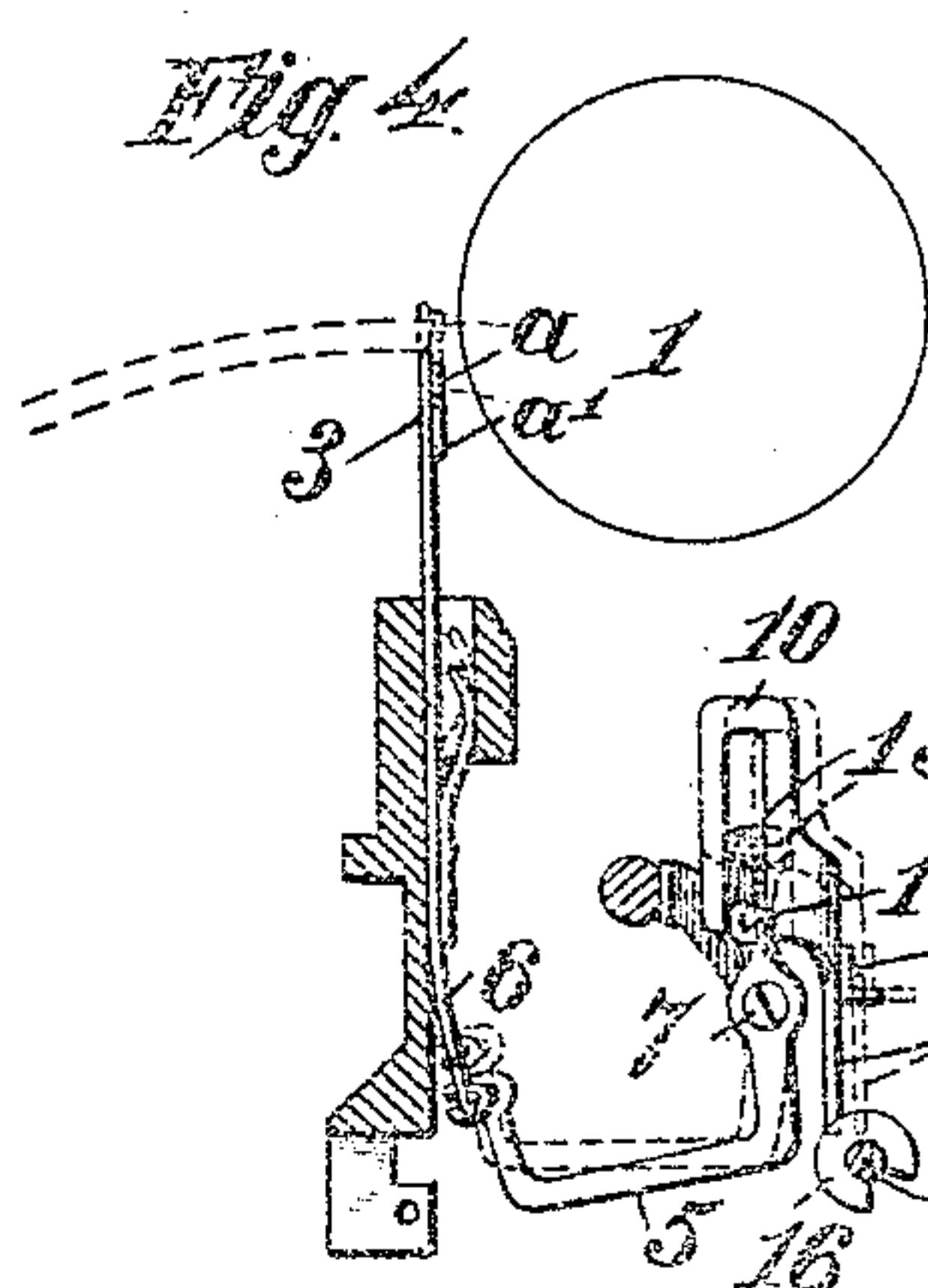
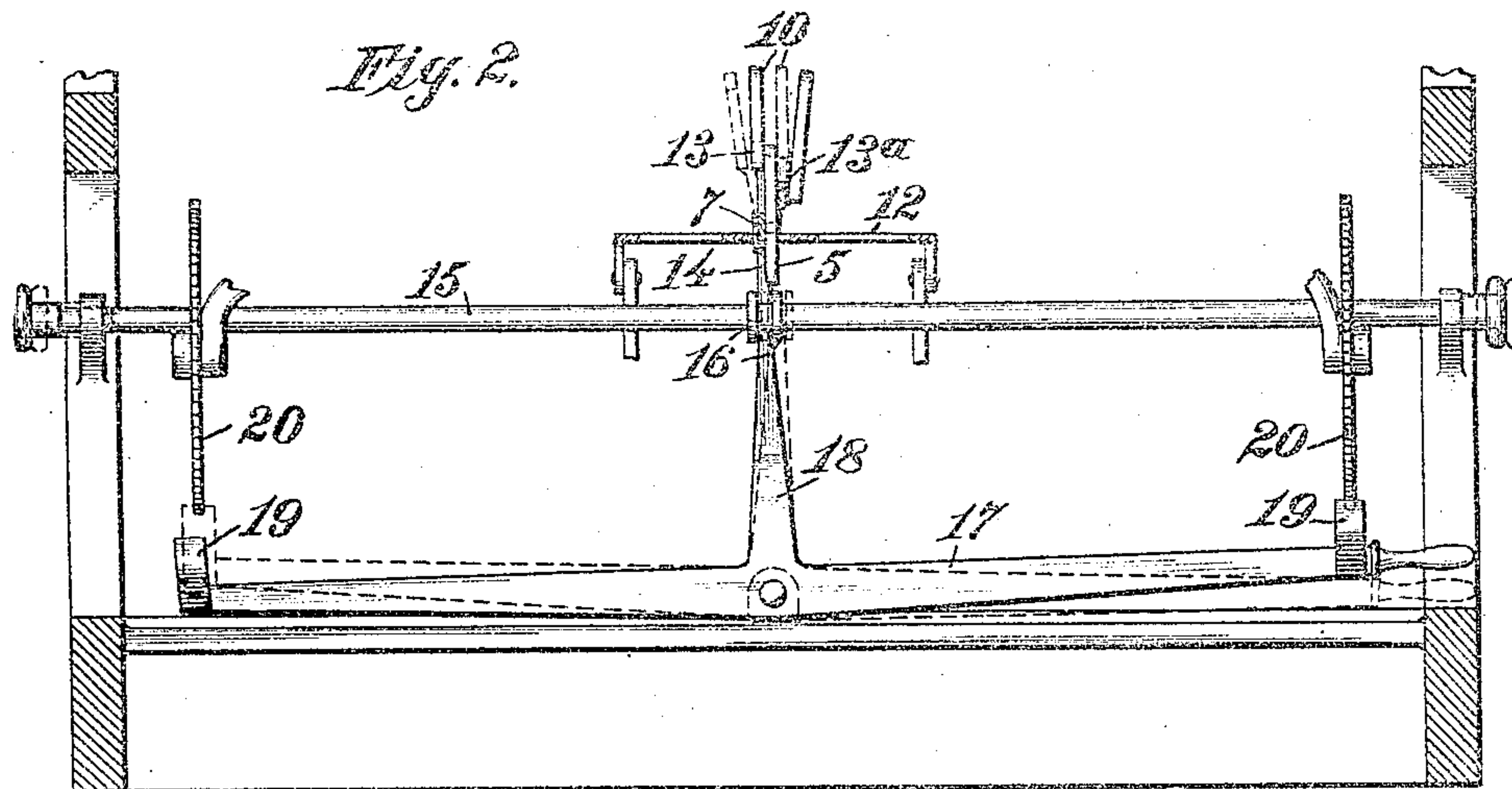
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CARL A. JOERISSEN, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

RIBBON ATTACHMENT FOR TYPE-WRITERS.

No. 886,609.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed April 14, 1905. Serial No. 255,634.

To all whom it may concern:

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

The object of my invention is to provide means whereby the ribbon in a sight writing machine may be presented in different relative positions to the striking point of the type bars in order to utilize the entire surface of the ribbon, to economize in the use of the ribbon, or to print through the medium of different printing colors, and to return the printing colors to the same normal position of rest at all times in order to avoid interfering with the sight-writing feature of the machine; also to have these operations take place both with upper and lower case writing.

In carrying out my invention, I provide means whereby the mechanism which introduces the ribbon between the type and the platen at each stroke of the machine, is made to vary the throw of the ribbon in some suitable manner, as for instance by moving it a greater or lesser transverse distance to bring different portions of a single color ribbon, or the differently colored portions of a polychrome ribbon over the printing point.

In the embodiment selected in the present case, for the purpose of illustrating my invention, the point of engagement between the actuating member, and the connection or lever through which the ribbon guide is moved, is shifted so that the throw imparted to the ribbon is amplified or reduced according to the portion of the ribbon upon which it is desired to have the type strike such connection being established preferably through means of studs or pins on the ribbon interposing means corresponding in number to the colors or different transverse portions of the ribbon to be interposed, and an actuator mounted on a part which reciprocates in the normal operation of the machine and which shifts in the operation of changing from lower to upper case writing, said actuator engaging the pins or studs through means of slots which permit the case shifting motion without changing the control of the actuator over the ribbon interposing means and being pivotally mounted so that it may be moved to bring either of the slots into engagement with

a stud or pin at will. The actuator is thus adapted to determine by engagement with the appropriate pin or stud which of the printing colors is interposed over the printing point. But other methods of placing different parts of the ribbon over the printing point while returning the ribbon to the same initial or normal position of rest, may be employed without departing from the broad spirit of my invention.

My present invention further relates to means whereby the aforesaid varying of the throw (whether by amplifying the throw or by otherwise changing it) may, at the will of the operator, be adjusted so as to require separate or independent manual setting, as when using a polychrome ribbon, or may be adjusted so that the change is accomplished automatically or in consequence of the shifting of the ribbon feed, as for using up the entire ribbon. That is to say, the same machine, for the purpose of economizing in the use of a single color ribbon, may be made to automatically vary the throw of the ribbon with the change of the ribbon feed and may be conveniently adjusted for using a polychrome, so that the varying of throw and consequent change of color, will occur only as desired.

In the accompanying drawings, the invention is illustrated as applied to a typewriter front strike sight writing of a well known type, but it will be obvious that with minor changes in details of construction, it may be used with other classes or types of sight writing typewriters.

In said drawings, Figure 1 is a vertical section of the writing machine taken from front to rear in the plane of the ribbon guide. Figure 2 is a vertical transverse section in the plane of the ribbon shifting mechanism. Figure 3 is a detail perspective view of the means for shifting the connection between the ribbon guide and the part which actuates it. Figures 4 and 5 are detail views illustrating the different throws imparted to the ribbon guide, when the actuating connection is in its different positions. Figure 6 is a detail view of the connection whereby the ribbon varying means is connected with the ribbon shift mechanism.

Referring to Fig. 1, 1 represents the printing roll or platen of the paper carriage and 2 represents a type bar. 3 is the ribbon guide which is mounted to move vertically on a

fixed part 4 of the machine and is raised by a lever 5 through the tail-piece 6, each time a type bar is actuated, in order to present the ribbon between the type and the platen 1. 5 Lever 5 is fulcrumed at 7 on the paper-carriage shifting frame 8 which is fulcrumed at 9 and actuated in a known manner. 10 represents a slotted arm which is secured at 11 to a frame 12 which is moved from front to rear 10 each time a key lever is depressed and said arm 10 engages a pin 13 on the upper end of lever 5 in order to impart the necessary movement to the ribbon guide 3. As thus far described, the parts are of a well known 15 construction.

In carrying out my present invention according to the embodiment here shown it is desired to amplify the vertical movement of the ribbon guide 3 while returning it at all 20 times to the same normal position of rest, in order to strike upon a different portion of the ribbon which passes through the guide, at different strokes of the machine, as for instance for the purpose of using up the entire 25 ribbon surface or for writing on differently colored portions of the ribbon. To accomplish this end, the slotted arm 10 is made bifurcated as shown more clearly in Figs. 2 and 3, and the lever is provided with an additional pin 13^a nearer to its fulcrum 7 than 30 the pin 13, and on the opposite side of the lever. Arm 10 is moreover pivoted at its connection 11 with the reciprocating frame 12, so that it may be rocked on said connection 35 to bring either its slotted side 10^a into engagement with the pin 13, or its opposite slotted side 10^b with the pin 13^a. From the relative distances of the pins 13 and 13^a from the fulcrum 7 of the lever 5, it is obvious that the throw of the ribbon guide 3 will 40 be amplified or reduced according to which pin is engaged by the rocking arm 10. The difference between the throws thus imparted to the guide 3 is illustrated in Figs. 4 and 5.

45 In order to rock the arm 10 upon its pivotal connection 11, said arm is provided with a tail-piece 14 extending downwardly and having suitable connection with a longitudinally shiftable rod 15 which may be conveniently mounted in the side frames of the machine. The connection here illustrated consists of a pair of flanges 16 on the rod 15, 50 between which the tail piece 14 extends, so that as the rod 15 is shifted longitudinally, either side 10^a or 10^b of the arm may be brought into engagement with the corresponding pin at will. 55

When a polychrome ribbon is used, the rod 15 will be shifted one way or the other according to the color of writing desired. 60

In order to make the varying of the throw of the ribbon guide follow the shifting of the ribbon feed, the ratchet lever 17 of the common form of ribbon shift is provided with an 65 upwardly and rearwardly extending arm 18

which enters between the flanges 16. As will be seen from Fig. 2, the ratchet lever 17 carries the dogs 19 which engage the ratchet wheels 20 of the ribbon feed of well-known construction and with my improved connection 70 between the lever 17 and the ribbon varying mechanism, it will follow that each time the ribbon is wound upon one spool, during which the writing has been along one edge of the ribbon, and the connections are 75 shifted so as to wind the ribbon upon the other spool, the ribbon guide will be amplified in its movements during the succeeding run of the ribbon so that the writing takes place in a different line from before. In 80 order that this automatic shifting of the ribbon amplifying means may be thrown out, the flanges 16 are provided with recesses 21 which by turning the rod 15 may be brought in alinement with the upward extension 18, 85 so that the latter will then have no effect upon the rod 15 or parts controlled thereby, while the control of said rod over the actuating connections of the ribbon guide will remain unimpaired. 90

The ribbon, it will be understood, is to be arranged in a known manner and is to pass through the ribbon guide in a way that is common to machines of the type selected for illustrating the present invention. The ribbon 95 is illustrated at A in Fig. 1 and the two longitudinal zones upon which the stroke of the type is delivered in consequence of changing the throw of the ribbon, are illustrated by *a* and *a'*. These longitudinal portions of the 100 ribbon may be of different colors as in well-known forms of polychrome typewriter ribbons.

Having thus described my invention what I claim and desire to secure by Letters Patent 105 is:

1. The combination with a ribbon-vibrating lever having upon its opposite sides studs at unequal distances from the fulcrum of the lever, of an actuator mounted on a pivot and 110 having slots to engage said studs, and shiftable upon said pivot to bring either stud into use at will.

2. In combination with a ribbon guide, a suitably fulcrumed lever having connection 115 with said ribbon guide, an arm engaging said lever to oscillate it, and a reciprocating part of the machine carrying said arm; said lever having pins at different distances from its fulcrum and said arm being movable 120 transversely to the plane of the lever's movement and having slots through which it is engaged with the respective pins at will.

3. In a sight-writing typewriter having a platen shifting to bring it into printing relation 125 with upper case characters and having a ribbon interposing means which shifts with the platen to maintain its relation and normal operation during upper case printing, means actuating the ribbon interposing 130

means, and means changing the throw imparted by such actuating means independently of other functions of the machine and without changing the normal position to which the ribbon is returned and maintaining the same control of said actuating means over the ribbon interposing means for both positions of the platen.

4. In a sight-writing typewriter having a shifting platen and a ribbon interposing means shifting with the platen, and actuating means having a plurality of engagements with the interposing means adapted to be brought into effect at will and each permitting movement of the interposing means relatively to the actuating means during the platen shift.

5. In a sight-writing typewriter, the combination of a platen shifting from its normal position to receive characters on a different portion of the type, a ribbon interposing means movable to and from the printing point and shifting with the platen in order to maintain its normal relation thereto and comprising a suitably fulcrumed lever, and an actuating arm movable into engagement with the lever at different distances from its fulcrum whereby it changes the throw imparted to the lever, but permitting independent movement of the lever during the platen shift.

6. In a sight-writing typewriter, the combination of a shifting platen, a ribbon interposing means shifting with the platen and maintaining its normal relation thereto at different positions of the platen, and comprising a lever through which the ribbon is moved to and from the printing point suitably fulcrumed and having a plurality of pins at different distances from its fulcrum through which varying throws may be imparted to the ribbon, and an arm through which movement is imparted to the interposing lever, adapted to engage either of the pins on the lever at will; such engagement being through the medium of a slot extending in the direction in which the lever moves in the shifting of the platen, so as to maintain the throw varying relation of the parts during either position of the platen.

7. In a sight writing typewriter, the combination of a ribbon guide, a pivoted lever by which the ribbon guide is moved, a means for imparting movement to said lever having a changeable point of connection therewith, and means for changing said point of connection consisting of a longitudinally movable rod engaging the lever-moving means.

8. In a sight writing typewriter, the combination of a ribbon guide, means through which the ribbon guide is moved, an arm actuating said means, carried by a part moving in the operation of the machine, a tail piece or extension on said arm, and a longitudinally movable rod engaging said extension.

9. In a sight writing typewriter, the combination of a ribbon guide, an arm having connection with the ribbon guide for moving it, mounted on a moving part of the machine and having a movable bearing thereon whereby the amplitude of the movement imparted to the ribbon guide is changed, a ribbon shifting means by which the feed of the ribbon is changed and a connection between the ribbon shifting means and said arm, whereby the throw of the ribbon is changed through the act of shifting the ribbon feed.

10. In a sight writing typewriter, the combination of a ribbon guide, a means for imparting a throw thereto to bring the ribbon over the printing point, a means for varying said throw to change the portion of the ribbon brought over the printing point, means for shifting the direction of the ribbon feed, and a releasable connection between the ribbon feed, shifting means and the throw varying means whereby one of said parts may be set through the other.

11. In a sight writing typewriter, the combination of a ribbon guide, a pivotally mounted arm having connection with the ribbon guide for imparting a throw thereto and movable on its pivot to vary said connection and amplify or diminish the throw of the ribbon, a longitudinally movable rod engaging said arm, a ribbon feed shifting means, and an arm extending from the ribbon feed shifting means and engaging the longitudinally movable rod for the purposes set forth.

12. In a sight writing typewriter, the combination of a ribbon guide, a means imparting a throw to said ribbon guide shiftable to vary its connection therewith and to amplify or diminish the throw thereof, a longitudinally movable rod having a flange by which it engages said means to shift it, and a ribbon feed changing mechanism having an arm extending therefrom into engagement with said flange whereby the rod is moved simultaneously with the shifting of the ribbon feed.

13. In a sight writing typewriter, the combination of a ribbon guide, a pivotally mounted arm having connection with the ribbon guide for imparting a throw thereto and movable on its pivot to vary said connection and amplify or diminish the throw of the ribbon, a longitudinally movable rod engaging said arm, a ribbon feed shifting means, and an arm extending from the ribbon feed shifting means and engaging the longitudinally movable rod for the purposes set forth; said rod being rotatable and disengaging its connection with the ribbon feed shifting means by said rotation.

14. In a sight writing typewriter, the combination of a ribbon guide, a means imparting a throw to said ribbon guide shiftable to vary its connection therewith and to amplify or diminish the throw thereof, a longitudinally movable rod having a flange by which

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it engages said means to shift it, and the ribbon feed changing mechanism having an arm extending therefrom into engagement with said flange whereby the rod is moved simultaneously with the shifting of the ribbon feed; said flange having recess therein adapted to be brought into registry with the arm of the ribbon-feed changing-mechanism, to ren-

der said arm ineffective as to the longitudinally shiftable rod. 10

The foregoing specification signed at Washington D. C. this 30th day of March, 1905.

CARL A. JOERISSEN.

In presence of—

HERVEY S. KNIGHT,
JNO. R. ADAMS.