

No. 753,797.

PATENTED MAR. 1, 1904.

C. A. JOERISSEN & H. R. LIVINGSTON.
POLYCHROME TYPE WRITER.

APPLICATION FILED JULY 10, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

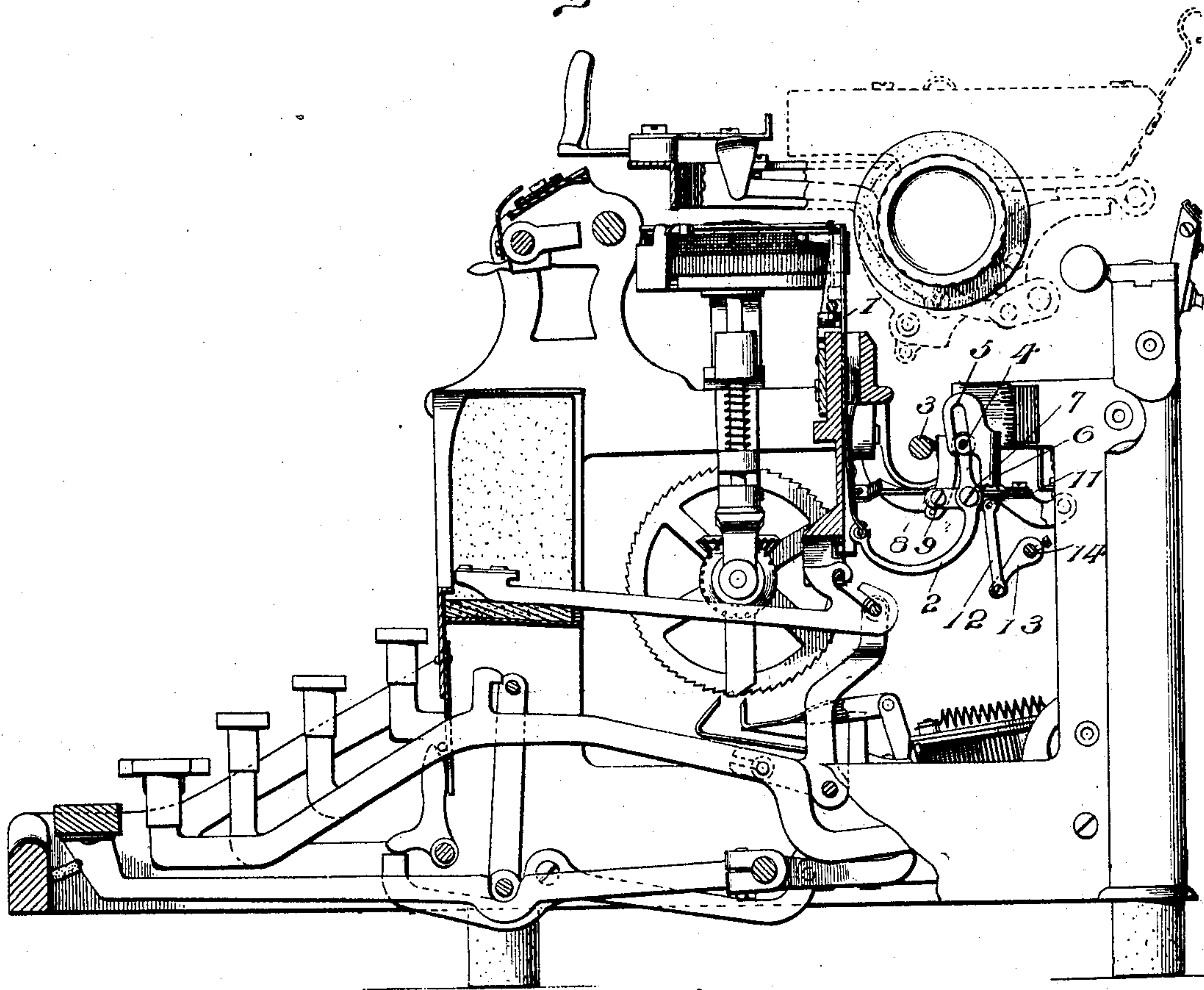
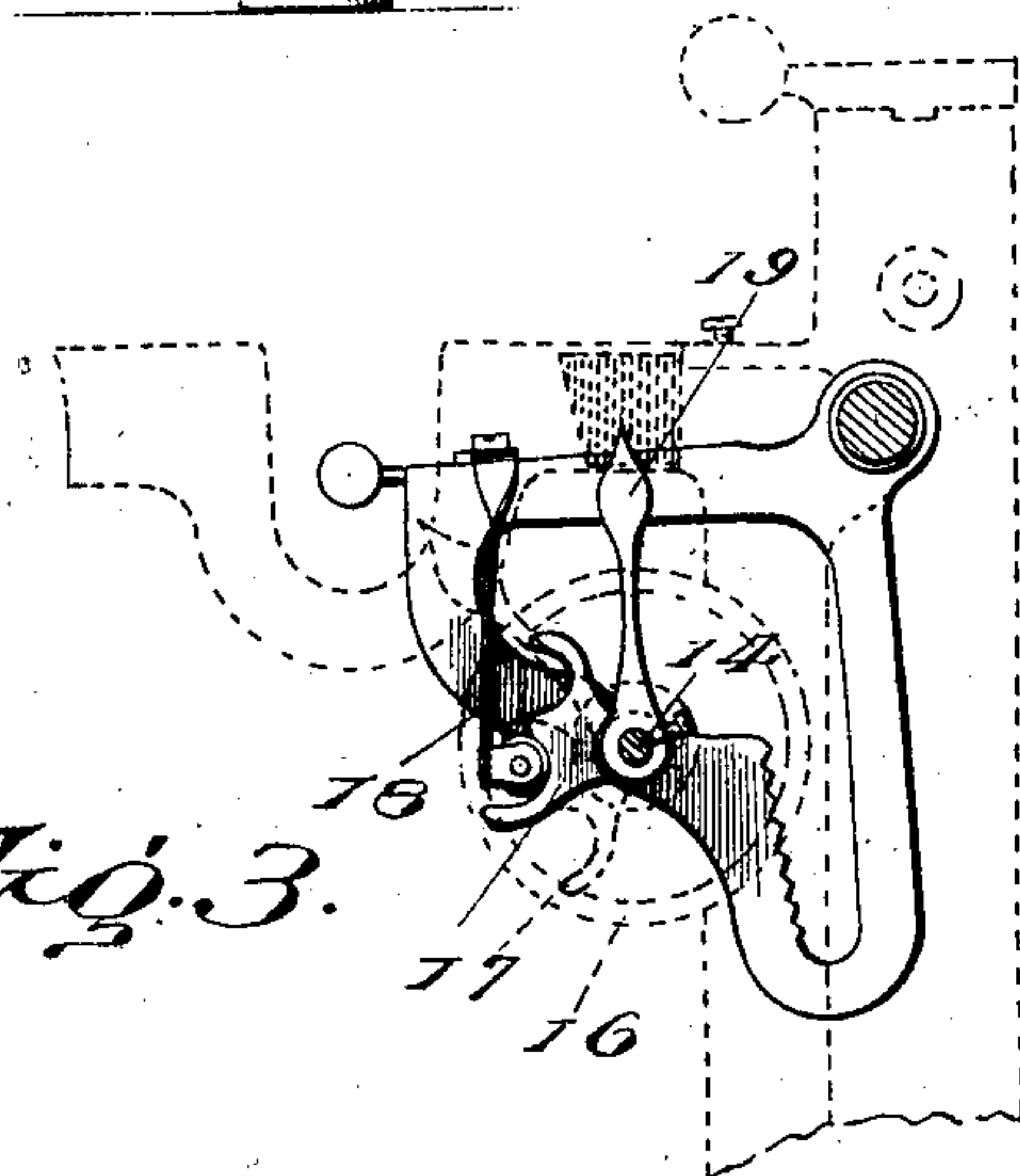


Fig. 3.



Witnesses

Wm. J. ...
Andrew ...

By

Inventors

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and
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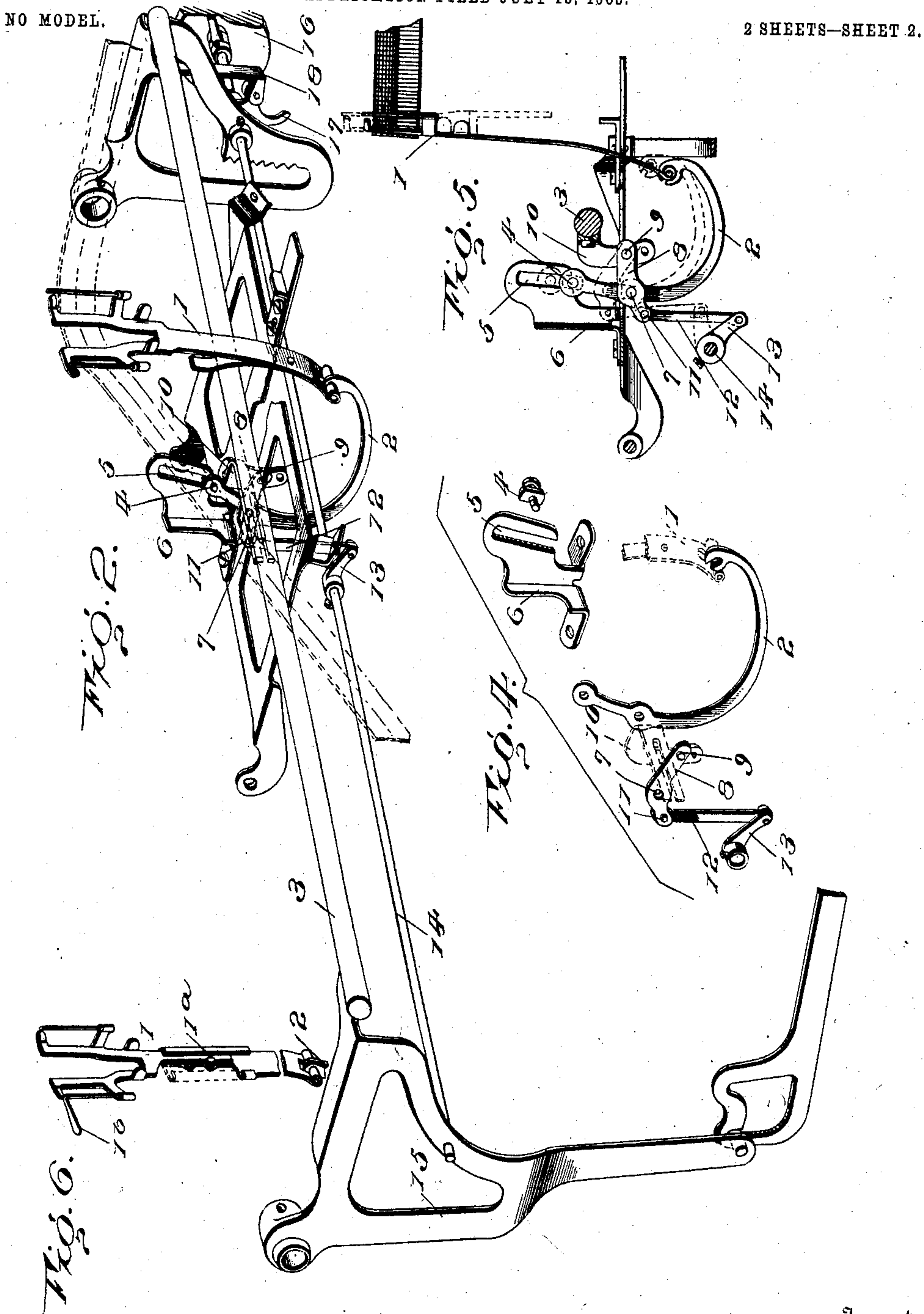
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2 SHEETS—SHEET 2.



Witnesses

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[Handwritten signature]

By

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and
Harry R. Livingston
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UNITED STATES PATENT OFFICE.

CARL A. JOERISSEN AND HARRY R. LIVINGSTON, OF WASHINGTON,
DISTRICT OF COLUMBIA.

POLYCHROME TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 753,797, dated March 1, 1904.

Application filed July 10, 1903. Serial No. 164,974. (No model.)

To all whom it may concern:

Be it known that we, CARL A. JOERISSEN and HARRY R. LIVINGSTON, citizens of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Polychrome Type-Writers, of which the following is a specification.

Our invention relates to visible-writing type-writers in which a disappearing-ribbon attachment projects the ribbon into the path of the type as each impression is made and immediately thereafter withdraws the ribbon from the printing-line to permit the impression to be observed.

The object of our invention is to provide means for shifting such a ribbon attachment relatively to the coöperating or controlling parts in order to present different portions of the ribbon to the type at will without interfering with the normal movements of the ribbon during either the lower or upper case writing—in other words, to permit the use of a polychrome ribbon in a sight-writing type-writer and to provide for making impressions with either of the lines of coloring running longitudinally through the ribbon at will.

Our invention will be fully understood upon reference to the accompanying drawings in which it is illustrated as applied to the "Underwood" type-writer, by way of example.

In said drawings, Figure 1 is a vertical section from front to rear of a type-writer to which our invention is applied. Fig. 2 is a perspective view of our invention, together with immediately-coöperating parts of the type-writer. Fig. 3 is an end elevation of parts by means of which the position of the polychrome attachment is fixed and the color of the writing is determined, the knob by which the adjusting-shaft is turned being indicated by dotted lines, as also is one of the positions of the parts. Fig. 4 is a perspective view of several parts of the polychrome attachment segregated. Fig. 5 is an enlarged detail view of the polychrome attachment shown in Fig. 1, but in reversed position, and with one of the alternative positions of adjustment indicated in dotted lines. Fig. 6 is

a detail view, in sectional perspective, showing a modification.

1 represents a ribbon-guide of a disappearing-ribbon attachment in a sight-writing type-writer, and 2 is a lever or oscillating arm, which raises the ribbon-guide into the path of the printing character each time a type-bar approaches the platen and withdraws said guide to disclose the printing as the type-bar recedes. This lever 2 in the type of the machine which I have selected for the illustration of my invention is supported mainly by the lift-rail 3, which controls the printing of upper-case characters, and said lever is oscillated by the engagement of its inner end 4 in a slot 5 of the universal spacing-frame 6, which, as is well known, is reciprocated by connection with the universal bar, which need not be specifically referred to.

According to our invention the ribbon-guide is adapted to receive a polychrome ribbon—such, for instance, as suggested by dotted lines in Fig. 2—and to present either of the two colors suggested or any one of a plurality of colors that might be provided in said ribbon in front of the printing-line of the machine without interruption to the normal movements of the guide. This can be accomplished by various means, which would provide for shifting the position of the guide relatively to the parts by which it is supported and those by which it is operated. It would be within the purview of our present invention to accomplish the described shifting of the guide by simply providing the guide with a slip-joint 1^a and a handle 1^b, by which it can be moved up or down; but we prefer to accomplish this shifting by locating the fulcrum 7 of the lever 2 on a fulcrum-bar 8, which is pivoted at 9 to the lift-rail 3 in any suitable manner—as, for instance, through the medium of a hanger or bracket 10—and to connect the free end 11 of the bar 8 through a link 12 with an arm 13 on a shaft 14, the angular position of which may be fixed at will to accord with the movement necessary to be imparted to the fulcrum 7 in order to shift the position of the ribbon-guide 1 to bring the desired one of its colors opposite the printing-line.

As stated, the free end 4 of the lever 2 engages with a slot 5 on the spacing-frame 6, said slot being heretofore provided for the purpose of maintaining controlling connection
 5 between the frame 6 and the lever 2, notwithstanding the vertical movement that is imparted to the lever 2 bodily when the lift-rail is shifted with its frame for upper-case printing. The slot 5 is elongated slightly to provide
 10 for the additional vertical movement of the lever 2 independently of the lift-rail. The shaft 14, which is rotated to obtain the color-shift of the ribbon, is preferably journaled in the upper-case shift-frame 15, which supports the rail 3, and partakes of the movements thereof.

Any suitable means may be employed for imparting angular movement to the shaft 14 or for fixing it in different positions angularly. This may be accomplished by a key-lever extending into the keyboard or adjacent thereto or by any other convenient means. By way of illustration we have shown for
 25 this purpose a knob 16, Figs. 2 and 3, on one end of the shaft 14 at the side of the machine and a ratchet 17, receiving a spring-pawl 18, which drops into any one of the depressions in the ratchet, which correspond in number to the colors of the ribbon and in position to
 30 the angular movement of the shaft required to present the respective colors before the printing-line.

19 represents an indicator which may be employed in connection with a suitably-located dial, group of colors, or other indicia to indicate the position of the polychrome attachment.

While we have illustrated our invention in connection with one particular known type-writing machine, we desire it understood that, broadly considered, our invention may be applied to other, or all, sight-writing type-writers or type-writers having the feature of visible writing.

45 Having thus described our invention, the following is what we claim as new therein and desire to secure by Letters Patent:

1. In combination with a visible-writing type-writing machine, having a ribbon attachment which withdraws the ribbon from the printing-line to permit inspection of the writing after each character is printed; a polychrome attachment, shifting the ribbon beyond its normal position at will to permit
 50 writing upon either of the ribbons' colors without interfering with the normal operation of the ribbon attachment.

2. In combination with a disappearing-ribbon attachment for visible-writing type-writers and an upper-case attachment for shifting said ribbon attachment with the platen; means for imparting to said ribbon attachment a further independent movement to present a different longitudinal portion of the ribbon to
 55 the printing-line in both lower and upper case

writing, whereby it is adapted for use with a polychrome ribbon.

3. In combination with a disappearing-ribbon attachment for visible-writing type-writers, and the means by which said ribbon attachment is actuated in its normal operation, means for shifting the ribbon attachment relatively to its actuating means without interrupting the controlling relation of the latter for writing upper-case characters, and means for adjusting the position of the ribbon attachment relatively to its actuating means, whereby said attachment is adapted for use with a polychrome ribbon.

4. In a visible-writing type-writer, the combination of the disappearing-ribbon attachment, an oscillating lever by which said ribbon attachment is normally actuated, an upper-case attachment by which said ribbon attachment is shifted, and means for shifting the fulcrum of the oscillating lever independently of the upper-case attachment.

5. In a polychrome attachment for visible-writing type-writers, the combination of the disappearing-ribbon attachment, an oscillating lever controlling the ribbon attachment, and the movement of which is controlled by the type-writing mechanism, an upper-case lift-rail by which said lever is supported and means for shifting the fulcrum of the lever relatively to the shift-rail.

6. In a polychrome attachment for visible-writing type-writers, the combination of the disappearing-ribbon attachment, an oscillating lever controlling the ribbon attachment, and the movement of which is controlled by the type-writing mechanism, an upper-case lift-rail by which said lever is supported and means for shifting the fulcrum of the lever relatively to the shift-rail, consisting of a shaft, an arm on said shaft and a link connecting said arm with the fulcrum of the lever.

7. In a type-writing machine the combination of an upper-case lift-rail frame, a disappearing-ribbon attachment supported from said frame and a polychrome-ribbon attachment mounted on said frame and having controlling connection with the disappearing-ribbon attachment, whereby the latter is adapted to serve for a polychrome ribbon.

8. In a sight-writing type-writer, the combination of a disappearing-ribbon attachment having a lever through which it is actuated, an upper-case shift-frame upon which said lever is fulcrumed, and a polychrome-ribbon adjustment consisting of a shaft also mounted in the shift-frame and having means through which it shifts the position of the lever-fulcrum relatively to the shift-frame.

9. In a polychrome visible-writing type-writer, the combination of the disappearing-ribbon attachment comprising a ribbon-guide, a lever imparting movement to said ribbon-guide, and a movable fulcrum-bar for said lever; an upper-case lift-rail upon which said

fulcrum-bar is pivoted, and a shaft having means for fixing it at different angular positions, movable with said lift-rail and having an arm connected with the fulcrum-bar of the
5 lever.

10 10. In a polychrome visible-writing type-writer, the combination of the ribbon-guide, a lever for moving said guide, a fulcrum-bar on which said lever is fulcrumed, a lift-rail for upper-case printing, upon which the fulcrum-bar is pivoted, a universal spacing-frame controlling said lever, and a shaft carried by

the mounting of the lift-rail, and having suitable connection with the fulcrum-bar by which the position of the fulcrum of the lever, relatively to the lift-rail may be adjusted by the
15 angular movement or rotation of the shaft.

The foregoing specification signed this 1st day of July, 1903.

CARL A. JOERISSEN.

HARRY R. LIVINGSTON.

In presence of—

HERVEY S. KNIGHT,

EDWIN S. CLARKSON.