

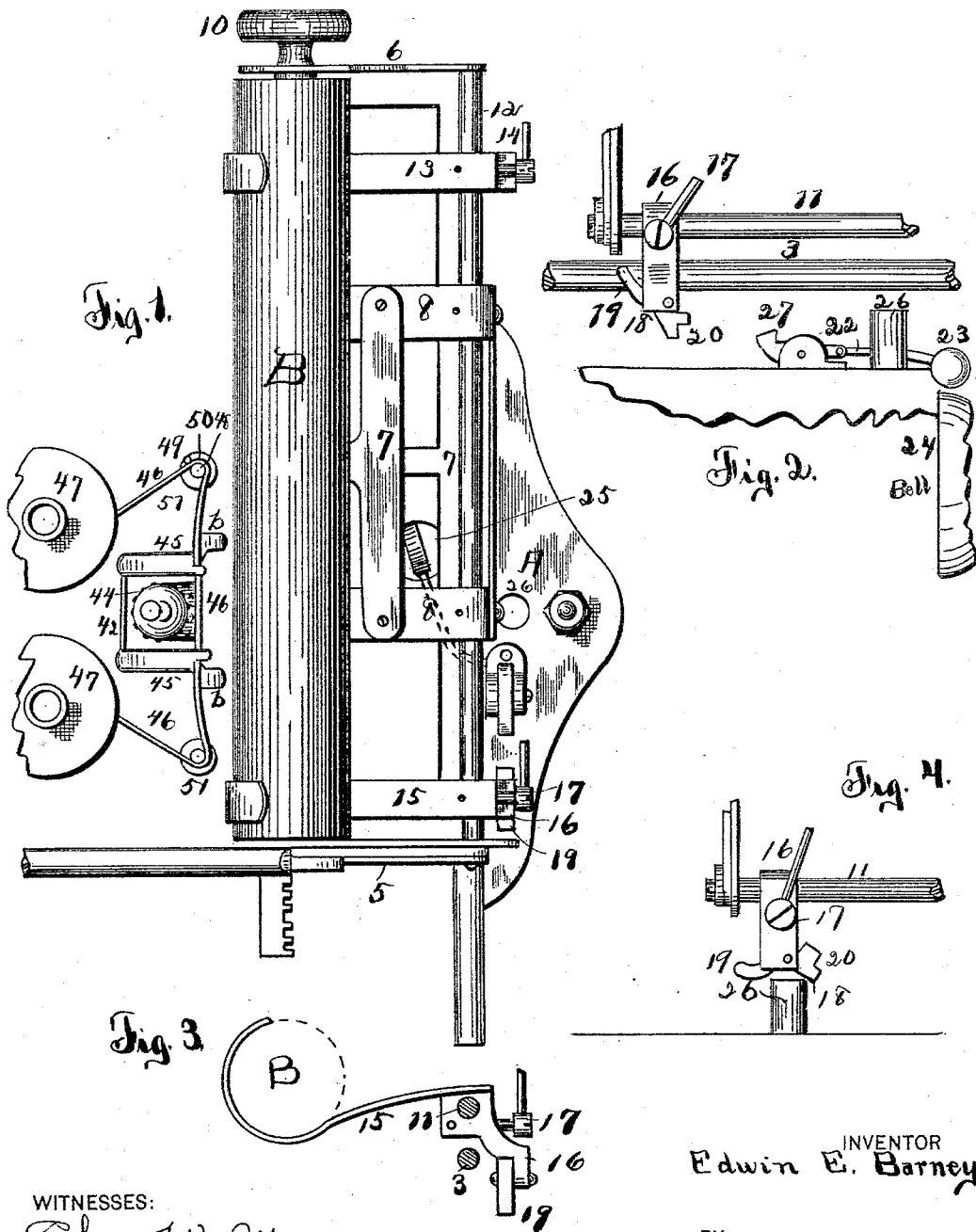
(No Model.)

3 Sheets—Sheet 1.

E. E. BARNEY.
TYPE WRITING MACHINE.

No. 546,292.

Patented Sept. 17, 1895.



WITNESSES:

Chas. W. Marvin.
E. S. Bond.

INVENTOR
Edwin E. Barney

BY

Smith & Thomson
ATTORNEYS.

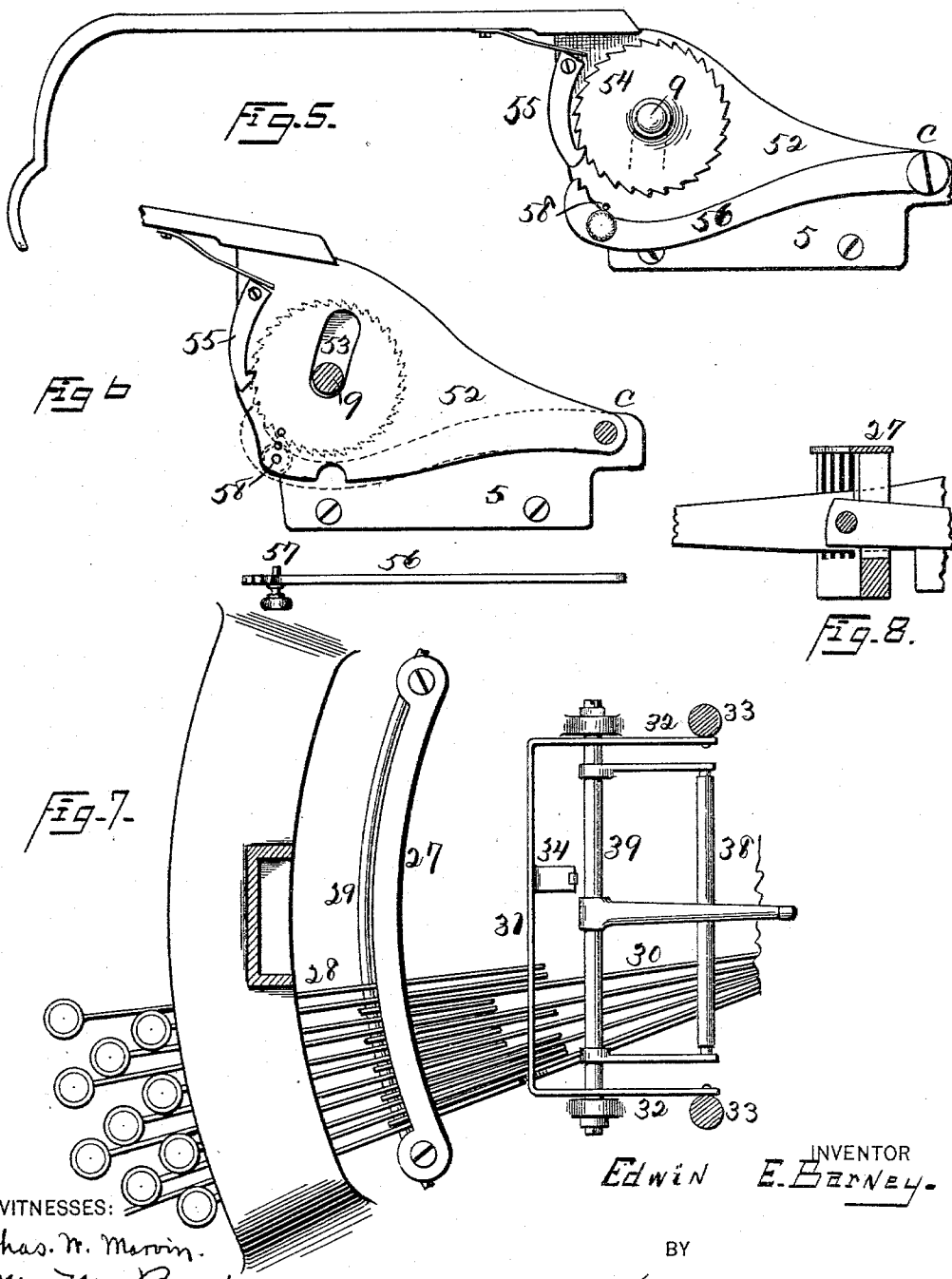
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3 Sheets—Sheet 2.

E. E. BARNEY.
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Patented Sept. 17, 1895.



WITNESSES:
Chas. W. Marvin.
M. M. Borch

INVENTOR
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(No Model.)

3 Sheets—Sheet 3.

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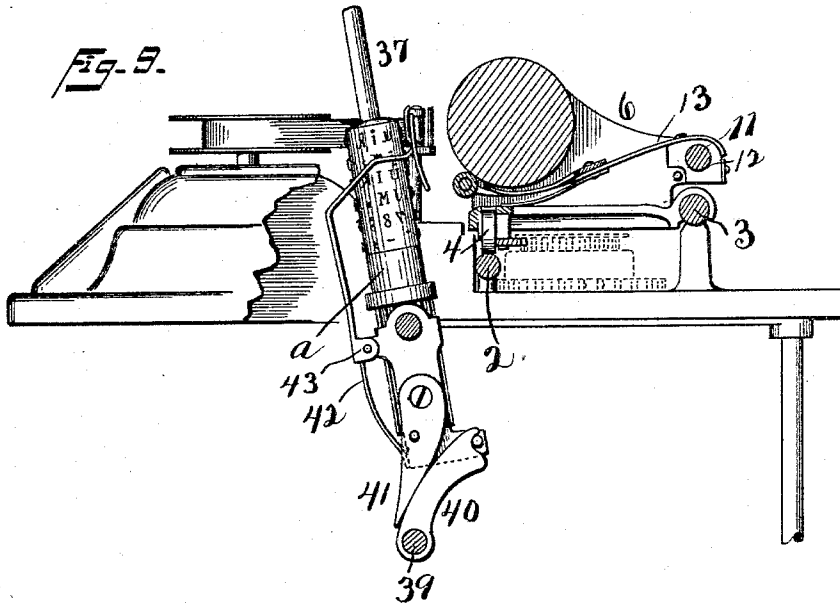
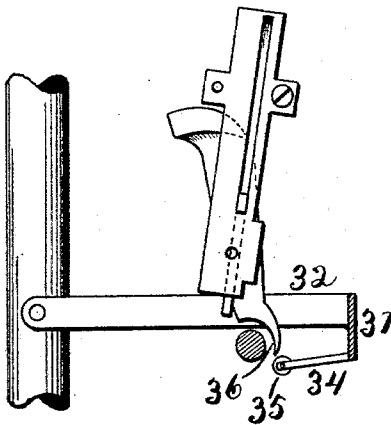


Fig. 10.



WITNESSES:

Charles W. Marvin.
M. M. Bost.

INVENTOR
Edwin E. Barney.

BY
Smith & Denison
ATTORNEYS.

UNITED STATES PATENT OFFICE,

EDWIN E. BARNEY, OF GROTON, NEW YORK, ASSIGNOR TO THE CRANDALL
TYPEWRITER COMPANY, OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 546,292, dated September 17, 1895.

Application filed April 2, 1894. Serial No. 506,129. (No model.)

To all whom it may concern:

Be it known that I, EDWIN E. BARNEY, of Groton, in the county of Tompkins, in the State of New York, have invented new and useful Improvements in Type-Writers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to type-writing machines, and particularly to the several mechanisms therein which are hereinafter specified.

My object is to produce an improved type-writing machine in which are provided an adjustable carriage-stop, bell-ringer, and paper-band, all combined in one; also, a release to permit the carriage to be shifted or to be taken off; also, an improved ribbon-vibrator in which the spring of the ribbon-guiding arms throws back both the guide and the spindle; also, an improved ribbon take-up or tightener; also, an improved type-bar-lever mounting; also, an improved straight bail easing the operation of the key-levers on the ends of the keyboard, with which bail the key-levers engage; also, an improved line-spacing and platen-rotating ratchet mechanism, and which is also provided with the other novel features hereinafter described.

My invention consists in the several novel features of construction and operation hereinafter described, and which are specifically set forth in the claims hereunto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a top plan of the machine, omitting the keyboard. Fig. 2 is a front elevation of the front of part of the carriage and top plate, showing the stop and bell-ringing mechanism. Fig. 3 is a sectional side elevation of the combined and adjustable paper-band, bell-ringing trip, and stop-button. Fig. 4 is a front elevation of the same, showing the button tilted to pass the stop for margin-printing and also to permit the removal of the carriage. Fig. 5 is a side elevation of the platen-rotating ratchet-lever mechanism in its normal position. Fig. 6 is a like view of the same, excepting that the ratchet and stop-

pawl are dotted in, in order to expose the slot-way, and showing the mechanism in the position of rotating the platen. Fig. 7 is a top plan of part of the keyboard-levers and their mounting and the bail for easing the operation of the key-levers on the ends of the keyboard. Fig. 8 is a sectional elevation of part of a key-lever and its auxiliary and their mounting. Fig. 9 is a vertical sectional elevation, partly broken away, of the top plate, the impression-platen, the carriage, paper-guide, type-sleeve and its mounting, one of the ribbon-spools, and the ribbon-guide. Fig. 10 is a detail in elevation of the sleeve-lifting cam, actuated by the lifting of the bail by the operation of the lifter key-levers.

A is the top plate, upon which the front track 2 and the rear track 3 are erected, 4 being the roller or rollers in the front of the carriage-frame. This frame comprises the ends 5 6 and the longitudinal rail 7, having lugs 7', 70 concaved to fit onto and partly inclose the rear track.

B is the platen, mounted upon the shaft 9 and adapted to be rotated by the button 10, said shaft being journaled in said ends.

Upon the bar 11, secured in the ends of the carriage above the rear bearings upon the rear track, a block 12 is mounted, and upon it is secured the paper-band 13, extending through, under, and curving upward partly around the platen and provided with a set-screw 14, by which it is adjusted and secured in any position desired. Near the other end of the bar 11 another paper-band 15 is mounted adjustably by means of a block 16, and upon the lower end of said block the dog 18 is pivoted, provided with an arm 19 and a shoulder 20, said arm being adapted to engage with said block.

Upon the top plate a bevel-faced pawl 21 is pivoted, and 22 is the hammer-rod secured thereto and carrying the hammer 23, which is adapted to strike the bell 24 through the opening 25 in the top plate whenever by the traverse of the carriage, while printing, the dog 18 engages with, rocks, and passes over the pawl 21, and 26 is a post erected upon the top plate, with which the dog engages to stop

the carriage. By pressure upon the arm 19 the dog can be tilted, so as to pass over the stop-post for finishing a word at the end of a line and also for the removal of the carriage, which, thus released, readily slides off from the rear trackway.

At 27 I show the curved comb-bar through which the key-levers 28 pass, 29 being a curved rod upon which these levers are journaled in front of the comb, and 30 are the auxiliaries or rearward extensions of said levers, adapted to engage with the straight bail 31, the arms 32 of which are pivoted upon the uprights 33, so that said bail is lifted whenever a lifter key-lever is operated. This bail is provided with a rearward arm 34, carrying a roller 35, Fig. 10, which, whenever the bail is lifted, is adapted to engage with the cam 36 and raise the sleeve to be oscillated and strike against the platen to print, all substantially as shown in the well-known Crandall oscillatory and rotary type-sleeve machine, except that said bail is straight and not curved. This bail is made straight in order to shorten the arm 34 to bring the bail closer to the cam to reduce the leverage upon said arm and bail and cause the machine to operate easier in proportion to such reduction of such leverage. Another bail 38, with which the inner ends of the auxiliaries engage, is secured to the shaft 39, upon which the primary cam 40 is secured in engagement with the secondary cam 41, pivoted upon the frame which carries the spindle 37, and 42 is a spring-bar having one end in engagement with the back of the frame which carries the spindle and pivoted at 43 onto said frame and thence extending upward and provided with the bifurcation 44, creating the arms 45, which are slitted vertically to receive the ribbon 46 in said slits as it extends across in front of the type-sleeve, said arms thence extending down to and being secured to the top plate at *b*, said downward extensions being springs, so that the operation of a key-lever will create a spring-tension upon said extensions by throwing the ribbon against the platen in advance of the printing-stroke of the type-sleeve, and then when said impression is made and the lever is released such spring-tension will throw the ribbon back away from the platen simultaneously with the retraction of the type-sleeve.

The ribbon 46 is conducted from one of the spools 47 to the other through the slits between the rotating sleeves 48 and the pins 49, erected upon the flange 50 upon each upright, said sleeves being rotatably mounted upon the uprights 51, erected upon the top plate, and between them passing through the guide-arms 45, so that when said arms are thrown forward the ribbon is drawn taut between them.

A plate 52 is pivoted at *c* upon the end 5 of the carriage and provided with a slot 53,

through which the platen-shaft extends, and 54 is a ratchet-wheel secured upon said shaft.

The lever 54' is secured to said plate, and 55 is a spring-pawl in engagement with said ratchet, pivoted upon said plate, so that by raising said lever said plate is raised, lifting said pawl and rotating the ratchet and platen. A stop-pawl 56 is pivoted upon said plate and provided at its free end with a pin 57, which is adapted to engage with one of the holes 58 in said plate, whereby the space between the lines of print is regulated and adjusted, the raising of the plate lifting the stop-pawl into engagement and stopping the rotation of the ratchet.

It will be seen that the bail 31 is only operated by the key-levers, which are known as "lifters" in that they raise the type-sleeve, and as this sleeve is raised more for the characters less used than for the others, and as these occasionally-used characters are represented by the key-levers upon the ends of the keyboard, the straightening of the bail 31 reduces the distance between the fulcrum of each outside lifter and its bearing upon this bail, and therefore the lever operates easier proportionately to the reduction of such distance.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with the carriage, impression platen and the bell, of a paper guide adjustably mounted upon said carriage, a pawl upon said guide, a trip with which said pawl engages, a hammer carried by said trip, and a stop with which said pawl engages after passing said trip.

2. The combination with the key levers, of a bail, a shaft rotated thereby, a primary cam secured to said shaft, a secondary cam actuated by the primary one, a spindle frame a spring bar engaging with it, and provided with arms through which the ribbon is guided.

3. The combination with the carriage, the platen and its shaft journaled therein, of a plate pivoted upon the carriage and slotted as shown, a pawl upon said plate, a ratchet secured upon said shaft, and means to lift said plate to rotate said platen.

4. The combination with the carriage, the platen and its shaft journaled therein, of a plate pivoted upon the carriage and slotted as shown, a pawl upon said plate, a ratchet secured upon said shaft, a stop pawl mounted upon said plate, and means to lift said plate.

5. The combination with the carriage, the platen and its shaft journaled therein, of a plate pivoted upon the carriage and slotted as shown, a pawl upon said plate, a ratchet secured upon said shaft, a stop pawl adjustably mounted upon said plate, and means to lift said plate.

6. In a type-writing machine, the combination with the lift-key-levers and a curved fulcrum rod, upon which they are journaled, of

a straight bail upon the line of a chord to the circle of said fulcrum rod with which said levers engage to raise it, and a type-sleeve lifted thereby when a lever is operated.

5 7. In a type-writing machine, the combination with the lifter-key-levers and a curved fulcrum rod upon which they are journaled, of a straight bail upon the line of a chord to the circle of said fulcrum rod with which said

levers engage with varying fulcrum, and a type-sleeve lifted by said bail when a lever is operated.

In witness whereof I have hereunto set my hand this 21st day of March, 1894.

EDWIN E. BARNEY.

In presence of—

D. H. MARSH,

F. T. TANNER.