No. 866,196. PATENTED SEPT. 17, 1907.

C. GABRIELSON.

TYPE WRITING MACHINE.

APPLICATION FILED APR. 29, 1904.

2 SHEETS—SHEET 1.

Fig.1.

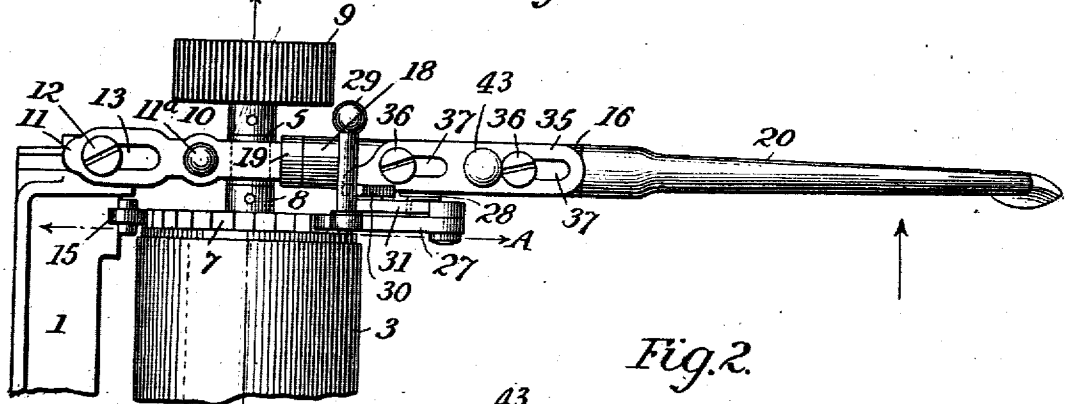


Fig.2.

Fig.3.

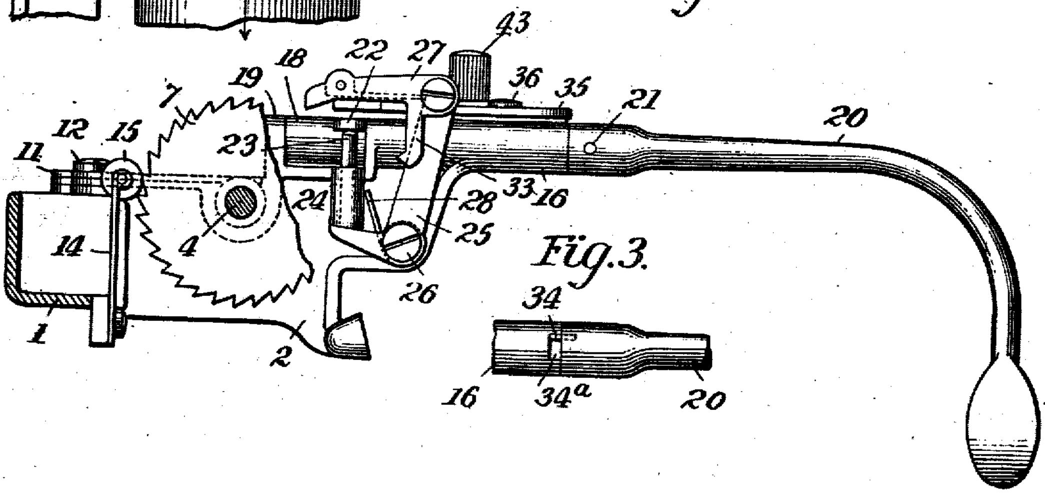
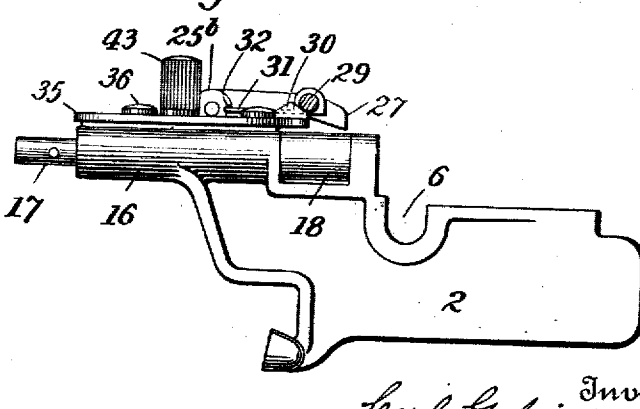


Fig.4



Witnesses

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2 SHEETS—SHEET 2.

Fig. 5.

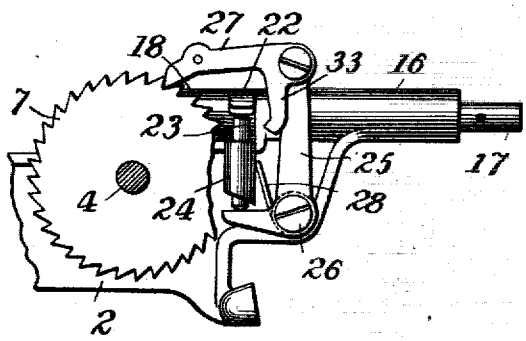


Fig. 6.

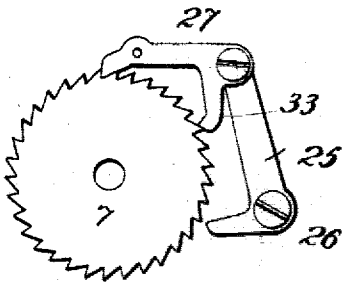


Fig. 7.

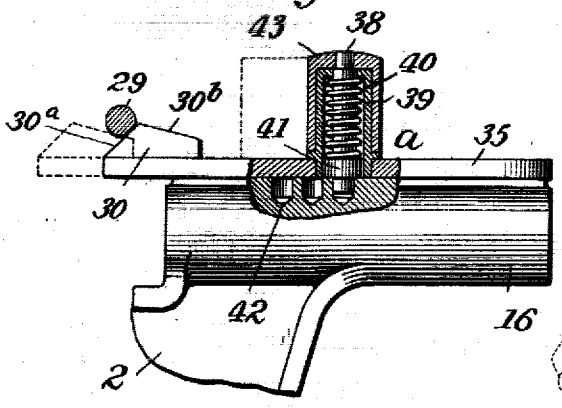


Fig. 9.

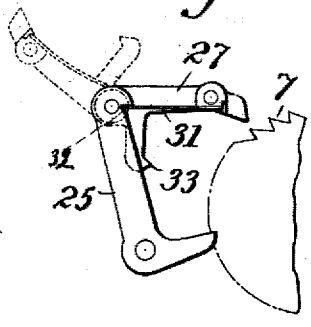
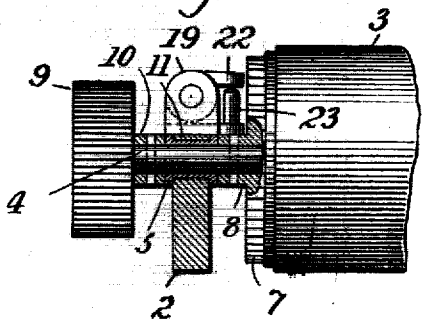


Fig. 8.



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UNITED STATES PATENT OFFICE.

CARL GABRIELSON, OF SYRACUSE, NEW YORK, ASSIGNOR TO L. C. SMITH AND BROS. TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

No. 866,196. Specification of Letters Patent. Patented Sept. 17, 1907.

Application filed April 29, 1904. Serial No. 205,841.

To all whom it may concern:

Be it known that I, CARL GABRIELSON, a citizen of the United States, and a resident of Syracuse, Onondaga county, State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates particularly to the mounting of the platen in the carriage and the devices for turning the platen to space between lines.

The invention is particularly described in the following specification and illustrated in the accompanying drawing, in which,

Figure 1 is a top plan view of the line spacing mechanism showing also the right ends of the carriage and platen; Fig. 2 is a section on the line A--A of Fig. 1, the ratchet-wheel being partly broken away and the spacing pawl being shown in its normal position; Fig. 3 is a detail view showing the stop for limiting the movement of the line spacing lever; Fig. 4 is a right end view of the carriage frame with the spacing pawl and space regulating device attached, the carriage handle being removed; Fig. 5 is a side view of the pawl and ratchet mechanism, similar to that shown in Fig. 2, but showing the pawl moved into an intermediate position and engaging the ratchet-wheel; Fig. 6 is a side view of the pawl and ratchet, showing the pawl at the limit of its movement; Fig. 7 is a side view, partly in section, of the space regulating device and the portion of the carriage frame to which it is attached, and Fig. 8 is a section on the line B of Fig. 1; Fig. 9 is a view showing the line space pawl in several positions.

Referring to the drawing, 1 and 2 indicate the back and right end bars respectively of the carriage frame, and 3 indicates the platen which is mounted upon a shaft 4. The platen shaft is journaled in a flanged sleeve or bearing 5, which rests within a groove or depression 6 in the upper side of the right end bar 2, and a sleeve similarly arranged in a corresponding groove in the left end of the carriage, (not shown). As shown in Fig. 8, these sleeves are provided with annular flanges which prevent longitudinal movement of the sleeves in their seats. The platen is constructed in the usual manner with a ratchet-wheel 7 at one end having a boss 8 which is secured to the shaft and abuts against the adjacent sleeve or bearing 5, thus preventing endwise movement of the shaft and platen. The usual knob 9 for turning the platen is provided, being secured to the shaft by a sleeve or boss 10 which abuts against the outer end of the bearing 5. The platen shaft turns freely within the sleeve bearings 5 and each bearing is locked within its seat 6 by means of an adjustable locking plate 11 which is secured to the top of the end bar of the platen frame by a set screw 12 passing through a longitudinal slot 13 in the rear end of said plate. The locking plate is of spring metal and its forward end normally rests upon the sleeve 5 between the flanges, as shown in Figs. 1 and 8, thus holding the platen firmly in place without putting any unnecessary friction upon the shaft. When it is desired to remove the platen, the set screws 12 may be loosened and the locking plates moved backward by means of handles 11^a a sufficient distance to uncover the grooves 6, when it it obvious that the platen and its sleeve bearings may be removed bodily from the carriage.

A spring arm 14 connected to the platen carriage, carries a roller 15 which bears against the ratchet-teeth constituting the usual holding dog to prevent free movement of the platen.

There is a bearing 16 upon the frame bar 2, in front of the platen shaft and at right angles thereto and a short shaft 17 is journaled within said bearing and secured against longitudinal movement therein by a sleeve 18 secured to the rear end of the shaft and fitting between the rear end of the bearing and a shoulder 19. The handle 20, by means of which the carriage is returned from the left to the right end of the machine, is rigidly secured to the shaft 17 by suitable means, such as the pin 21 passing through the handle and the shaft. When the handle is grasped and pulled in the direction of the arrow (Fig. 1) to return the carriage, it will be seen that the shaft 17 will be turned upon its axis, and an arm 22 which projects from the side of the sleeve 18 toward the platen, will be rocked downwardly. This arm 22 bears upon the upper end of a pin or plunger 23 which slides within a vertical guide opening extending through a lug 24 upon the carriage frame and is supported at its lower end upon the horizontal arm of a bell-crank lever 25, which latter is pivoted upon a stud 26 projecting from the carriage frame. The vertical and longer arm of the bell-crank lever carries a pawl 27 for engaging and moving the ratchet-wheel. A spring 28 coiled around the stud 26 and connected to the bell-crank lever, normally holds the parts in the positions shown in Fig. 2, with the pawl out of engagement with the ratchet-wheel and the horizontal arm of lever 25 abutting against the lower end of the lug or guide 24, which guide forms a stop to limit the return movement of the pawl.

The free end of the pawl, in its retracted position, is normally supported by an arm or hand piece 29 which projects laterally from the pawl and rests upon a cam-shaped flange 30 forming part of a space regulating device *a* which is hereinafter described. The pawl 27 is normally pressed gently downward by a spring 31 having one end secured to the free end of the pawl and its opposite end engaging a notch 32 in the arm of the bell-crank lever. The spring 31 also serves to hold the line space pawl in any desired inoperative position and out of the way when the platen is being removed, as illustrated in Fig. 9. When the pawl 27 is thrown

back the spring engages frictionally with the round end of the lever 25 and the pawl will thus be held stationary in any position. In Fig. 9 it is shown in full lines in one position and dotted lines in another.

When the handle is grasped and pulled to the right, as indicated by the arrow in Fig. 1, it will be seen that the rocking of the shaft 17 and consequent depression of the plunger 23, will rock the bell-crank lever 25 and move the pawl rearward into engagement with the ratchet-wheel, as shown in Fig. 5, and the ratchet-wheel will be turned until a stop arm 33 which is connected with the pawl and projects downwardly therefrom, engages the ratchet-wheel, as shown in Fig. 6, and prevents further movement of the pawl. The rocking of the shaft 17 is also limited by a stop pin 34 (Fig. 3) secured to the inner end of the handle 20 and projecting into a slot 34^a in the abutting end of the bearing 16 at its lower side.

The distance between the lines of print is regulated by means of the space regulator *a* which consists of a slide 35 adjustably secured upon the frame end 2 and having upon its rear end the flange 30, the latter having preferably inclined surfaces 30^a and 30^b. This slide is adjustably held by means of screws 36 passing through longitudinal slots 37 in the slide. The space regulator may be moved backward and forward and may be locked in several positions by means of a detent pin 38 arranged within a thimble 39 which has its lower open end secured in an opening in the slide 35. A spring 40 is arranged between the upper end of the thimble and a shoulder 41 near the lower end of the pin and is adapted to force the pin into any one of a series of detent holes 42 formed, as shown, in the top of the bearing 16. The upper end of the pin extends through an opening in the top of the thimble and is connected to a cylindrical finger piece 43 which fits over the thimble. By lifting the finger piece and moving the same backward or forward the space regulator may be adjusted to any desired position, and locked by the release of the finger piece.

When the space regulator is in its foremost position shown in Figs. 1 and 2 and in full lines in Fig. 7, the arm 29 of the pawl rests upon the inclined surface 30^a of the flange 30 and if the pawl be moved rearward, the arm 29 which is pressed gently downward by the spring 31 drops off of the surface 30^a at an early point in the movement of the pawl and engages a tooth low down upon the forward side of the ratchet-wheel, and the continued movement of the pawl rotates the platen for the widest spacing. When the space regulator is moved rearward as far as possible, as indicated in dotted lines in Fig. 7, it will be evident that the arm 29 will normally rest upon the inclined surface 30^b, as shown, and that the pawl will be held out of engagement with the ratchet-wheel during the greater part of its movement, as the pawl cannot engage the ratchet-wheel until the arm 29 passes off the incline 30^a. The pawl will therefore engage a tooth higher up on the ratchet-wheel and the platen will be moved a distance suitable for single spacing. In the intermediate position of the space regulator the arm will normally rest upon an intermediate portion of the flange 30 and the pawl will move an intermediate distance upon the flange before engaging the ratchet-wheel, thus causing an intermediate movement of the platen.

It will be evident that the mechanism described may be varied more or less without departing from the spirit of the invention.

Therefore, without limiting myself to the precise construction and arrangement of parts illustrated and described, I claim:

1. In a typewriting machine, the combination with the platen and its ratchet, of a pawl for turning the ratchet to space between lines, an elbow lever carrying said pawl, a rock shaft having an arm, a part interposed between said arm and the elbow lever, and a carriage return handle connected to said shaft.

2. In a typewriting machine, the combination with the platen and its ratchet, of a pawl for turning the ratchet to space between lines, said pawl standing normally apart from the ratchet, a lever carrying said pawl, a spring connecting the pawl with the lever to urge the pawl into position for engagement with the ratchet, and a second spring operating upon the lever to hold the pawl normally away from the ratchet.

3. In a typewriting machine, the combination with the platen and its ratchet, of a pawl for moving the ratchet, a stop arm carried by the pawl and adapted to engage the ratchet to limit the movement of the pawl, an elbow lever upon which said pawl and stop arm are pivotally mounted, a rock shaft having an arm for moving said elbow lever, and a carriage return handle connected to said rock shaft.

4. In a typewriting machine, the combination with the platen and its ratchet, of a pawl for moving the ratchet, a stop arm rigidly connected to the pawl, a lever carrying said pawl and stop arm, a rock shaft and connections for moving said lever, and an independent stop for limiting the movement of said rock shaft.

5. In a typewriting machine, the combination with the platen and its ratchet, of a pawl moving in the plane of the ratchet for engaging the ratchet to move the platen, and a space regulating device comprising a slide movable parallel to the plane of the ratchet, means for adjusting the slide to different positions, and a support for the spacing pawl carried by the slide and adapted to variably release the pawl and permit it to engage with the ratchet, depending upon the position of the slide.

6. In a typewriting machine, a space regulating device comprising a slide having a space pawl supporting portion, means for guiding the slide, and locking means comprising a spring plunger, a thimble connected to the slide and inclosing and guiding said plunger, a cylindrical handle fitting over said thimble and secured to said plunger, and a series of holes to coöperate with said plunger and hold the slide in different positions.

7. In a typewriting machine, a line space regulating device comprising a slide provided with guide slots and with a pawl supporting flange having inclined surfaces, screws passing through said slots and connecting the slide to the carriage frame, and a locking device for holding the slide in different positions.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL GABRIELSON.

Witnesses:
C. M. STEVENS,
C. F. PARSONS.