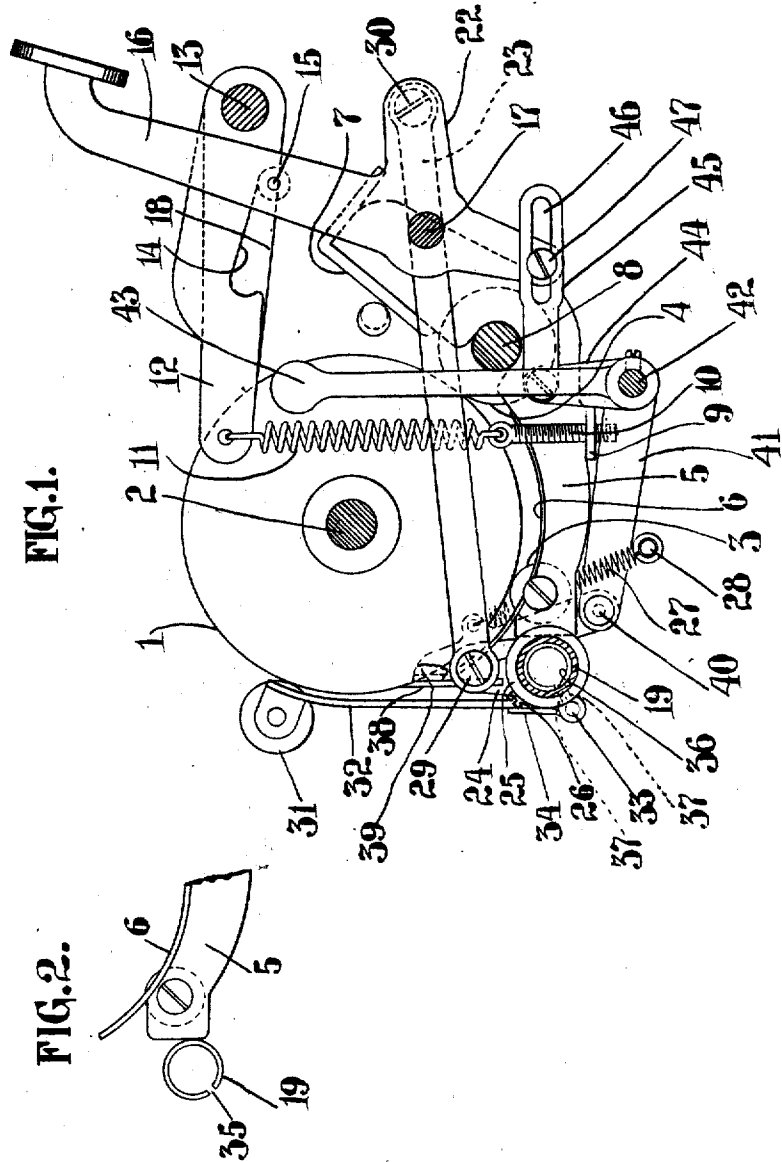


1,009,415.

Patented Nov. 21, 1911.
 2 SHEETS—SHEET 1.



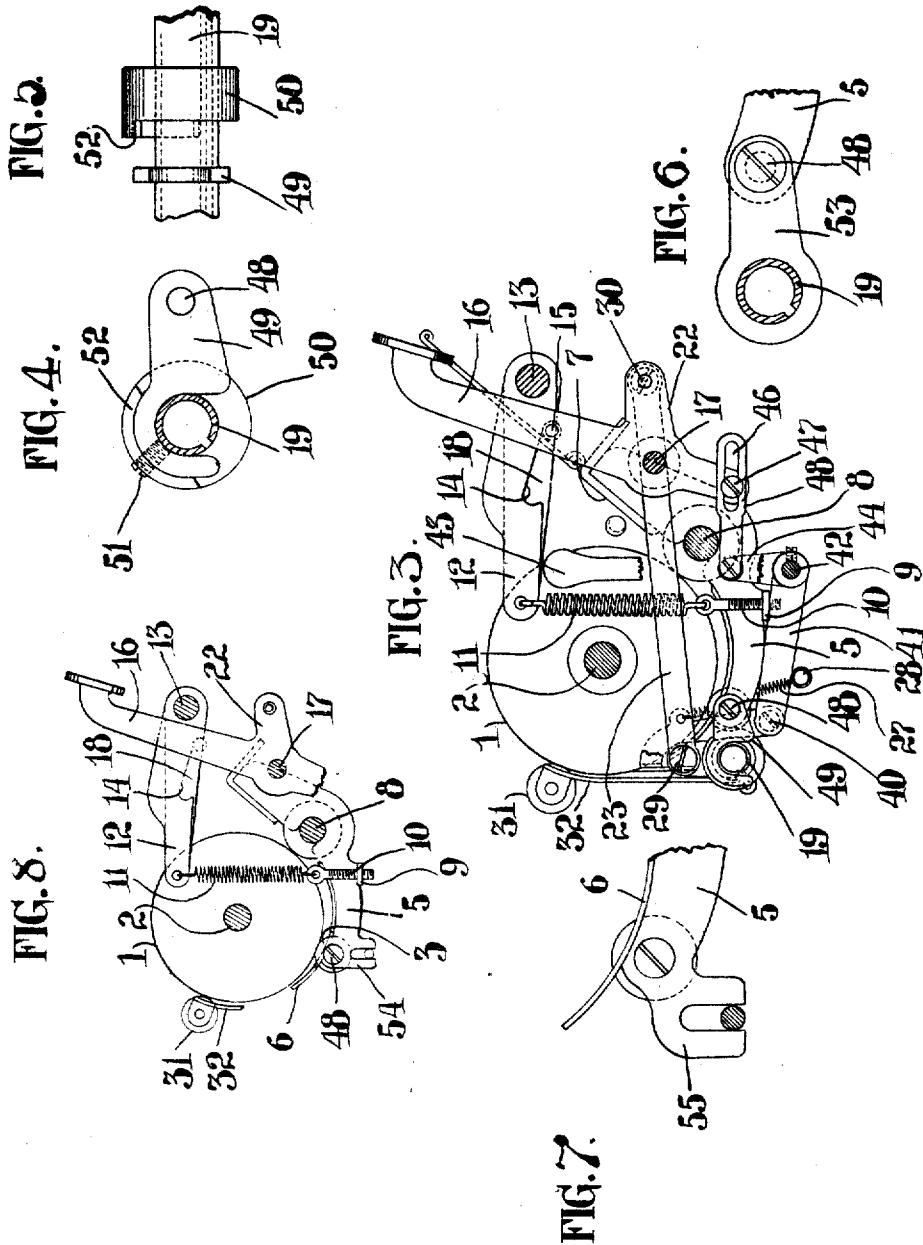
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1,009,415.

Patented Nov. 21, 1911.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

EDWARD B. HESS, OF NEW YORK, N. Y., ASSIGNOR TO ROYAL TYPEWRITER COMPANY,
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WRITING-MACHINE.

1,009,415.

Specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed December 6, 1907 Serial No. 405,350.

To all whom it may concern:

Be it known that I, EDWARD B. HESS, a citizen of the United States of America, residing in the borough of Brooklyn, city and State of New York, have invented certain Improvements in Writing-Machines, of which the following is a specification.

This invention relates to paper feed devices for visible typewriting machines and is shown as applied to a machine in which impressions are made against the front face of the platen.

In the accompanying drawings: Figure 1 is a vertical longitudinal section taken, in the main, just outside of the right hand end of the platen. Some of the parts illustrated may however be located outside of said end plate: Fig. 2, a detail elevation of the front end of the paper feed devices: Fig. 3, a view similar to Fig. 1 but on a smaller scale showing a modification of the construction: Fig. 4 shows in detail in side elevation one of the rocking links for guiding the feed devices in front of the front feed roll: Fig. 5, a front elevation thereof: Fig. 6, a detail view similar to Fig. 5 showing a modification: Fig. 7, a similar view showing another modification: and Fig. 8, a view similar to Fig. 4, with some of the parts omitted, showing still another modification of the manner of guiding the feed devices at the front thereof.

Referring first to Figs. 1 and 2; 1 is the platen, the shaft 2 of which is mounted to turn in bearings in the end plates of the carriage.

Below the platen are front and rear feed rolls 3, 4, whose shafts are mounted in bearings in a frame shown as composed of end plates 5 connected by a paper pan or guide 6 lying in part between the front and rear feed rolls, and by a paper table 7. The front feed roll revolves in apertures in the front part of the pan 6. The rear feed roll is intermediate the rear edge of the pan and front edge of the table and is mounted upon a shaft 8 turning in open bearings in the end frame plates 6. Each of these end plates has at its upper edge small outwardly extending flange or projection 9 in which is fitted an adjustable screw bolt 10 to the eye in the upper end of which is attached the lower end of a coiled spring 11 whose upper end is connected with the forward end

of an arm 12, 18, whose rear end is attached to a rock shaft 13 turning in the end plates of the carriage. The under side of the lever arm 12 at the right hand end of the platen is formed with an inclined face 14 against which works a pin 15 extending through the end plate of the carriage and carried by a lever arm, or release lever, 16 located outside said end plate and rocking about an axis 17. At the left hand end of the platen, the rock shaft carries a forwardly projecting arm 18 corresponding with the lever arm 12 and having attached to its forward end a second suspension spring 11. When the lever arm 16 is in rearmost position, the front ends of the arms 12, 18, are elevated and the suspension springs 11 sustain the frame of the feed devices with the front and rear feed rolls in contact with, or in suitable relation to, the face of the platen. When the lever arm 16 is drawn forward, the front ends of the arms 12 and 18 are lowered and the sustaining springs being thus released or lowered the paper feed devices may move away from the platen. This part of the present invention contemplates that the feed devices shall be guided or restrained at the forward edge of the feed device frame against forward movement thereof and the means applied at the forward part of the frame for preventing its forward movement may also serve as a guide for the frame in its vertical movement toward and from the platen.

In Figs. 1 and 2, the means for preventing forward movement of the frame, which is otherwise entirely unrestrained other than by the suspension springs, is a shaft 19 located below the printing line and against the rear face of which the forward ends of the side pieces 5 abut. Other means for preventing forward movement of the feed devices and for guiding them in their movements away from and toward the platen are shown in other figures and are hereinafter described.

The lever arm 16, Fig. 1, has a projection 22 lying back of its axis and pivotally connected therewith is a piston link 23 whose forward end is attached to a vertically disposed lug or projection 24 on a collar 25 adjustably secured by a set screw 26 upon a hollow shaft 19 having bearings in the end plates of the carriage, and capable of being

rocked. A coiled spring 27 attached at its upper end to the link 23 adjacent its front end has its lower end attached to a fixed point 28 and by its reaction tends to hold the parts in normal position indicated in Fig. 1 and in which the pivotal connections 29 and 30 are in line with the axis 17 of the release lever. When the release lever 16 is drawn forward to permit the feed devices to move away from the platen, a forward thrust is imparted to the link 23 which rocks the hollow shaft 19 thereby carrying away from the platen the margin clamping rollers 31 of which there is one at each side of the machine carried in upright arms 32 hinged at their lower ends at 33. The flat spring 34 applied to the arms 32 tend to hold the margin roll in contact with the platen. The hollow shaft 19 has a longitudinal slot 35. Within the shaft are disposed the split sleeves 36, the adjacent edges of each of which are formed with abutting flanges 37 that extend through the slot 35 in the wall of the hollow shaft. In the outer ends of these flanges are hinged at 38 the standards 32 that carry the margin rolls. There is also employed a scale bar 38 carried in the ends of arms 39, one at each end of the platen, that are each curved or bent to pass around the end of the platen and then extend rearwardly and downwardly their lower ends being pivoted at 40 in the forward ends of arms 41 carried by a rock shaft 42. Applied to this rock shaft outside the right hand end plate of the carriage is a vertically disposed lever arm 43 by which the shaft may be rocked independently of movement of the release lever to raise the scale bar 38 to the line of print. In order that the scale bar may be raised when the release lever is operated to throw off the feed devices, the rock shaft 42 is provided with an upright arm 44 to which is pivoted the front end of a link 45 having in its rear portion an elongated slot 46 in which works a stud bolt 47 projecting laterally from the side of the release lever 16 below the axis thereof. The lost motion of the bolt 47 in the slot permits the described independent elevation of the scale bar by manipulation of the lever 43. When the release lever 16 is drawn forward the stud bolt 47 coming against the rear wall of slot 46 rocks shaft 42 and raises the scale bar to the line of print. The split sleeves 36 disposed within the hollow shaft 19 fit frictionally therein and serve to hold the arms 32 firmly, but they may nevertheless be moved laterally within the shaft, by pressure exerted at the axis 33, to adjust the margin clamps relatively to the printing point.

Figs. 3 and 4 illustrate the same general arrangement as that shown in Fig. 1 with the following exception. The front ends of

the end frame pieces 5 of the feed device frame are pivotally connected at 48 with a link 49 adapted to rock about the shaft 19. The link 49 is formed with a hook at the front end having a circular surface to embrace and rock upon the shaft. To hold the links 49 in proper position upon the shaft there is placed outside of them at each end of the shaft a collar 50 that may be adjustably secured by a set screw 51. To reduce friction, the collar is cut away upon the side contiguous the link so as to leave a surface 52 equal to part only of the area of the hooked end of the link.

In Fig. 6, the link there marked 53 is formed with a circular aperture so that it may be slipped endwise over the split shaft 19.

Figs. 7 and 8 show still other ways of guiding the paper feed devices and holding them against forward movement should there be, to an undesirable extent, such a tendency induced by rotation of the platen.

In Fig. 8, the end frames 5 are formed respectively with a downwardly extended part 54 recessed or bifurcated vertically below the axis of the front feed roll. Short pins projecting inwardly from the side plates of the carriage enter these recesses and effect guiding and holding of the paper feed devices.

In Fig. 7, there are downward projections, there marked 55, at the forward ends of the frame pieces 5. These projections, however, extend in front of the axis of the front feed rolls. They are provided with a vertical slot or recess in which guide pins projecting from the side plates of the carriage work.

A paper feed frame carrying front and rear feed rolls and sustained by springs, the points of suspension of which may be lowered to permit the feed devices to fall or move away from the platen is shown and broadly claimed in my application Ser. No. 404,009, filed November 27, 1907 and designated Case RR' and the present invention is an improvement thereupon.

The above mentioned application shows also laterally adjustable margin clamp rolls, means for throwing them off when the paper feed devices are thrown out of action, a scale bar normally below the line of print, and means for raising it to the line of print when the paper feed devices are thrown off. The specific construction of those devices shown herein, *i. e.* a split hollow shaft having internal lateral movable parts to which the margin roll standards are attached, and the link extending from the release lever to a projection from the rock shaft are the invention of L. C. Myers and are not claimed herein.

I claim:

1. Paper feed devices for a front strike machine comprising a frame, front and rear

feed rolls carried thereby, spring means for suspending the frame, means for releasing the suspending means to permit the frame to move away from the platen and means located at the front portion of the frame to limit its forward movement.

2. Paper feed devices for a front strike machine comprising a frame, front and rear feed rolls carried thereby, spring means for suspending the frame, means for releasing the suspending means to permit the frame to move away from the platen and means located at the front portion of the frame to limit its forward movement and for guiding it positively in its movements away from and toward the platen.

3. Paper feed devices for a front strike machine comprising a frame, front and rear feed rolls carried thereby, spring means for suspending the frame, means for releasing the suspending means to permit the frame to move away from the platen and links rocking about a fixed axis to which the forward

part of the frame is pivotally connected.

4. The combination with the platen and feed devices of a release lever for moving the feed devices away from the platen, a slotted link in the slot of which a projection on the release lever works, a rock shaft having a projection to which the slotted link is pivoted, arms extending from the rock shaft, secondary arms pivoted to the front ends thereof, and a scale bar carried by said secondary arms whereby when the release lever is operated to throw off the paper feed devices the scale bar is elevated, and means for independently operating the rock shaft to raise the scale irrespective of throwing off of the paper feed devices.

In testimony whereof, I have hereunto subscribed my name.

EDWARD B. JESS.

Witnesses:

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L. T. BROWNING.