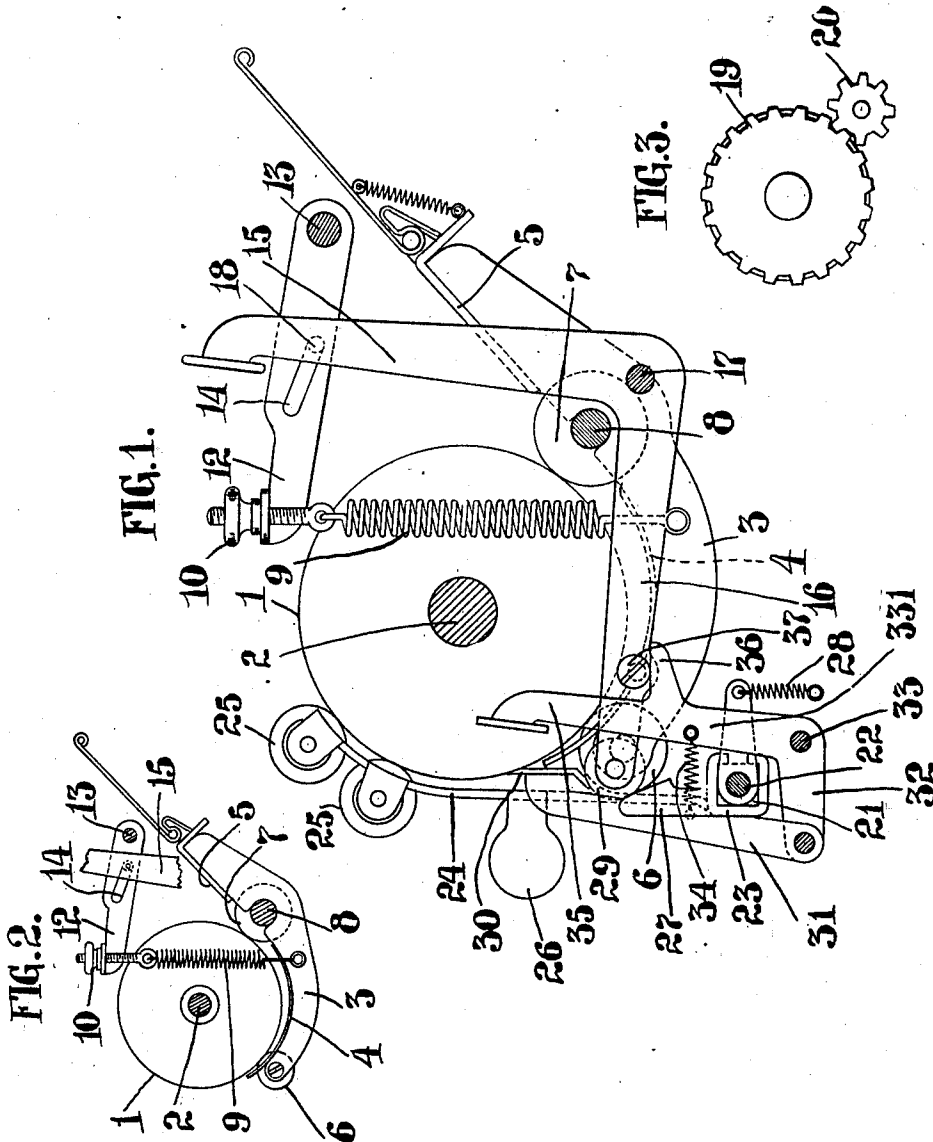


E. B. HESS.
 WRITING MACHINE.
 APPLICATION FILED NOV. 30, 1907.

1,004,569.

Patented Oct. 3, 1911.



WITNESSES:
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WRITING-MACHINE.

1,004,569.

Specification of Letters Patent.

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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 of a visible writing machine and is shown as, applied to a platen against the front face of which impressions are made.

In the accompanying drawing: Figure 1 is a longitudinal vertical section taken, in the main, just outside of the right hand end of the platen, showing the platen and the paper feed devices and the release lever lying outside the end plate, the carriage frame being omitted; Fig. 2 is a similar view on a smaller scale from which some of the parts shown in Fig. 1 are omitted; Fig. 3, a detail view showing a way in which the rear feed roll may be driven from the platen at the same surface speed as that of the latter.

1 is the platen of which 2 is the axis having appropriate bearings in side plates of the carriage. The paper feed devices as shown consist of a frame comprising two plates 3, one at each end, connected by a paper pan 4 and by a part 5 of the paper table. The front feed roll 6 has its bearings in the front ends of these frame plates 3 and, as usual, may be formed in sections which revolve in apertures or slots in the front portion of the pan 4. To the rear of this point is the rear feed roll 7 which may also be in sections as usual. 8 is its shaft shown as having open bearings in the frame plates 3. At each end of the platen there is a coiled spring 9 attached to the end frame piece 3 in front of the rear feed roll. The upper ends of these springs are connected to adjustable eye bolts 10 carried in the front ends of lever arms 12 rocking at their rear ends about an axis 13. These lever arms have corresponding inclined slots 14. On the outer face of the right hand side plate of the carriage is a bell crank lever having an upright arm 15 and a horizontally disposed arm 16. The axis of the bell crank is a rock shaft 17 to which the bell crank is fast. A pin 18 on the inner side of the upper part of the bell crank lever at the right hand side of the machine projects through the side plate into the

inclined slot 14 in the lever arm 12 located at the right hand end of the platen. At the left hand end of the platen, the rock shaft carries an arm corresponding with the part 15 of the crank and having also a pin the same as 18 projecting into the inclined slot in the lever arm that supports a coiled suspending spring at the left hand side of the machine. When the lever arm 15 is in rearmost position, the outer ends of the corresponding lever arms 12 at the respective ends of the platen will be elevated and the springs 9 will hold the front and rear feed rolls in engagement with or in suitable juxtaposition to the surface of the platen. A gear 19 turning with the platen meshes with a gear 20 on the shaft of the reed feed roll. These gears are so proportioned that the feed roll will be driven at the same surface speed as is the platen and the teeth are of such depth as to prevent them from passing out of engagement when the feed devices move away from the platen. It is preferred that the springs 9 shall be of such strength as that when the feed rolls are in normal position against the face of the platen, the springs will not be extended but will act merely as suspending links. To lower the feed devices or to permit them to move away from the platen, it is only necessary to draw forward the lever arm 15 when the supports 10 of the upper ends of the suspending springs will be moved downwardly and the feed devices may fall away from the platen by gravity. Experience has shown that their weight is sufficient for this purpose and that the use of any supplementary spring tending to withdraw them from the platen is unnecessary.

The feed devices thus far described are shown in the small detail view, Fig. 2, from which it will be observed that they are freely suspended and do not rock about any fixed pivot but are, on the contrary, strictly speaking, floating. The point of application of the springs to the frame carrying the feed rolls and the disposition of the weight of the parts may be, and preferably is, such that they are balanced, or substantially so, on the points of suspension, the point of the attachment of the spring being the center of gravity. It will be apparent that the feed devices or the frame or part carrying the feed rolls being unconfined, except by the supporting springs, the rolls may adapt

themselves to the platen so as to secure uniform contact or pressure of the respective rolls thereon.

I prefer to employ in connection with the feed devices thus far described, a scale bar and margin clamp devices. Those shown are constructed and operate in the following manner. About in line below the front face of the platen is mounted a square rock shaft 21 the ends 22 of which are cylindrical and turn in bearings in end plates of the carriage. This rock shaft is embraced by a sleeve 23 adjacent each end and from each sleeve there extends upwardly a yielding arm 24 curved at its upper part to conform to the platen and carrying margin clamp rolls 25, 25, arranged one ahead of the other. The respective margin clamps may be adjusted laterally by sliding the sleeve 23 on the square rock shaft and for convenience in adjusting them, they are each provided with a hand piece 26. The rock shaft at the right hand end of the platen carries also an upright projection 27 having an inclined rear face. The rock shaft is held in normal position by a spring 28 applied to a horizontal arm projecting rearwardly therefrom and the reaction of which tends to draw the projection 27 rearwardly against a roller 29 in the front end of the horizontally disposed arm 16 of the bell crank lever. The scale bar 30 is carried in the upper ends of arms 31 pivoted at their lower ends upon arms 32 extending forward from a rock shaft 33 having its bearings in the side plates of the carriage. Each arm 32 is extended upwardly above the rock shaft to which it is attached, the upward extension being marked 33'. Each such part 33' is connected by a coiled spring 34 with the corresponding arm 31 that supports the scale bar, the scale bar being thus drawn against the face of the platen. At the right hand side of the machine, the part 33' is prolonged forming a lever arm 35 equipped with a usual finger piece and from the rear of which extends a horizontal projection 36 against which an adjustable eccentric stop 37 on the bell crank arm 16 works. The arrangement is such that when the feed rolls are permitted to move away from the platen, the roll 29 in the end of the bell crank arm 16 acts upon projection 27 on the square rock shaft and forces it rearwardly causing the shaft to turn in its bearings and move the margin clamps away from the face of the platen. The eccentric

stop or projection 37 also bears against the lug or projection 36 on the lever arm 35 and rocks that arm rearwardly thereby causing the arms or parts 32 to lift the scale bar to the line of print.

Since the construction of the carriage and platen frame may be such as is usual in this class of machines, it is thought unnecessary to illustrate them.

Paper feed devices supported or suspended by coiled or other spring suspension means and combined with means for releasing said suspending means so as to permit the feed devices to move away from the platen are shown and broadly claimed in my application No. 404,009 filed November 27, 1907, the present invention being an improvement upon the construction disclosed in said application.

I claim:

1. Feed devices comprising a platen, front and rear feed rolls located below the axis of the platen, spring means for suspending the rolls to allow them to float freely, and paper feed release device to which the spring suspending means are connected and which act to release the suspending devices to permit the rolls to move away from the platen.

2. Paper feed devices for a writing machine comprising a platen, front and rear feed rolls located below the axis of the platen, a frame in which they are carried, spring means for suspending the frame to allow the frame to float freely, and paper feed release devices to which the spring suspending means are connected and which act to release said spring suspending means to permit the frame to move away from the platen.

3. Paper feed devices for a writing machine comprising a platen, front and rear rolls located below the axis of the platen, a frame in which they are mounted, suspending springs for the frame to allow the frame to float freely, said springs being connected at their lower ends to the frame and at their upper ends to movable supports and means for lowering said supports to permit the frame to move away from the platen.

In testimony whereof, I have hereunto subscribed my name.

EDWARD B. HESS.

Witnesses:

JOHN M. LEE,
L. F. BROWNING.