

E. B. HESS.
TYPE WRITING MACHINE.
APPLICATION FILED FEB. 18, 1910.

984,671.

Patented Feb. 21, 1911.

Fig. 1.

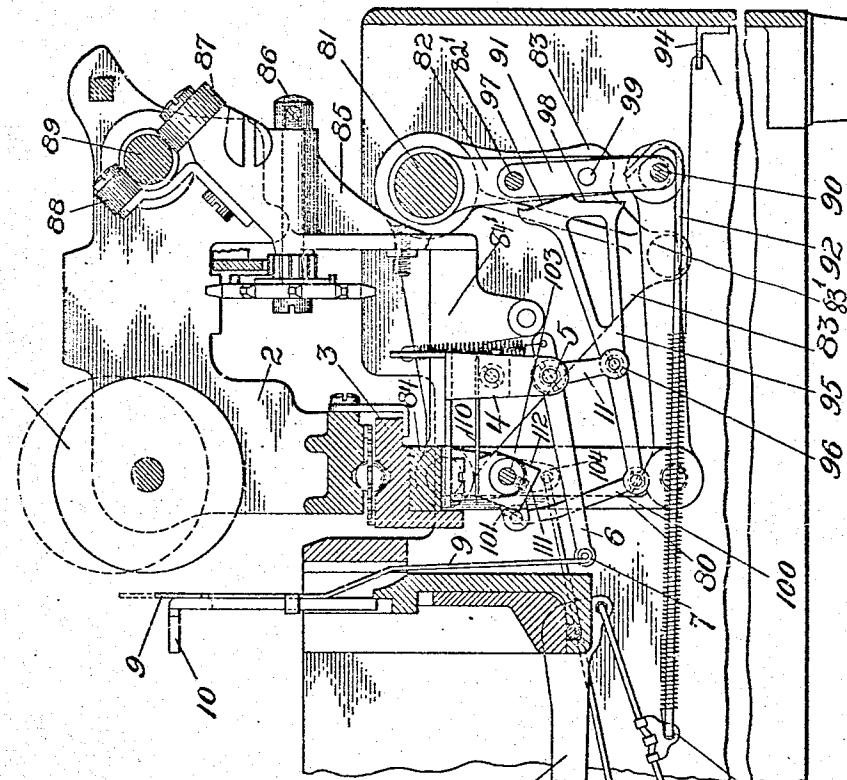


Fig. 2.

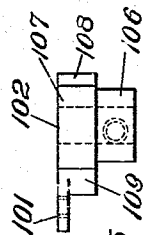
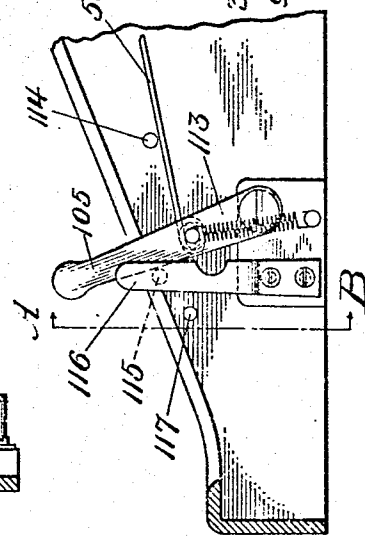
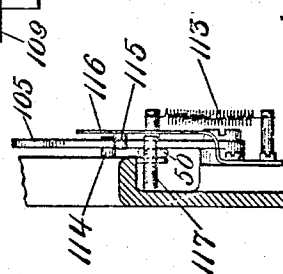


Fig. 3.



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By his Attorney
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UNITED STATES PATENT OFFICE.

EDWARD B. HESS, OF NEW YORK, N. Y., ASSIGNOR TO THE ROYAL TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

984,671.

Specification of Letters Patent.

Patented Feb. 21, 1911.

Application filed February 13, 1910. Serial No. 544,541.

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 Manhattan, city, county, and State of New York, have invented a certain new and useful Improvement in Type-Writing Machines, of which the following is a specification.

This invention relates to ribbon vibrator actuating devices, particularly applicable to front strike machines, designed to impart different extents of movement to the vibrator to print from different zones thereof and having cooperating stop devices acting to positively limit the movements of the vibrator.

The invention is an improvement upon the organization disclosed in my application filed April 16, 1909, Serial Number 490,243, and upon that shown in my Patent No. 874,338, dated December 17, 1907.

In the accompanying drawing, Figure 1 is a longitudinal section; Fig. 2, a detailed plan, on an enlarged scale, of an adjustable rotative block, shown in Fig. 1, having stop surfaces of different radius for arresting the ribbon vibrator; and Fig. 3 is a section on the line A, B, of Fig. 1.

The general construction is, in many respects, the same as that of the typewriting machine known as the "Standard" manufactured by the Royal Typewriter Company. The shift rail 3 has extending downward from it adjacent each end an arm 80 to the lower ends of which are pivoted horizontally disposed parallel links 92 whose rear ends are pivoted to the side plates of the main frame of the machine. At the tops of arms 80 adjacent the shift rail 3 are also pivoted parallel links 83 carried by a rock shaft 81 and shown in the form of webs or plates of somewhat triangular shape. A lateral projection 83' on one or both plates 83 is to receive a draw link that effects elevation of the shift rail 3. In the center of the machine there is rigidly attached to the shift rail at 84 a frame or bracket 84' that shifts with the rail and carries a vertical bracket 85 that has bearings for the escape wheel shaft 86 and also carries supporting and guiding rolls 87, 88 that cooperate with a rod 89 extending between the side plates of the transversely movable platen frame 2. The universal bar

90 is carried in the ends of links 82 turning loosely on the rock shaft 81 and connected by a transverse rod 82': and in the center of the machine there is a rod or link 91 carried by the universal bar 90 and transverse rod 82'. The universal bar is drawn forward by hook links 92 each connected to a plate 93 clipped to a type bar operating link 30 and surrounded by a coiled spring connected at the front to said plate, and at its rear end engaged in an aperture in a plate 94. There is one such link 92 for each type bar link 30. Consequently, when the links 30 are drawn forward to throw the type bars to the printing point the universal bar is drawn forward. Of course, the links 30 may be actuated by key levers; or, they may be operated by finger stems or push pins, as is the case in the well known Royal Standard machine.

A horizontally disposed arm or thrust link 95 is pivoted intermediate its ends at 96 to the end of the short arm 11 of the ribbon vibrator bell crank. The longer horizontal arm 6 of the bell crank has pivoted to it at 7 the lower end of the ribbon vibrator 9 which is shown as guided on the standard of the usual type bar guide 10. The bell crank, 6, 11, is pivoted at 5 in a hanger 4 extending down from the shift rail. The arm 95 extends fore and aft of the machine and its rear edge or face is of considerable width so as to afford upon its rear edge two surfaces 97, 98, arranged in different lines. Cooperating with these surfaces is a lateral projection 99 on the central link 91. The surface 98 is nearer the pivot 96 than is the surface 97 and consequently as the universal bar has a definite limited extent of movement contact of projection 99 with surface 98 will produce less forward endwise movement of the link 95 than if projection 99 contacted with surface 97. In the position shown on forward movement of the universal bar, projection 99 acting on surface 98 would drive link 95 forward and effect through the bell crank 6, 11, such elevation of the ribbon vibrator 9 as is adequate to effect printing from the upper zone of the ribbon. Where, however, the lower end of arm 95 is depressed and projection 99 comes in contact with surface 97 a greater forward endwise movement will be imparted to the arm and consequently the ribbon vibrator

will be elevated to a greater extent sufficient to effect impressions from the lower zone of the ribbon.

Means are provided for rocking the arm 5 95 about its axis or pivot 96 to bring either surface 97 or 98 into position to cooperate with projection 99, or to so adjust the arm 95 (for stencil work) that it will not be engaged at all by projection 99 and the ribbon vibrator will, in such case, remain at rest. 10 Pivoted to the forward end of arm 95 is an upwardly extending link 100 whose upper end is pivoted to a horizontally disposed radial projection 101 from a block 102 fixed to a rock shaft 103. 15 A downwardly extending projection 104 from the same block is connected by link 50 with a rocking lever 105 pivoted at the front of the machine to the left hand side plate thereof. The link 20 50 may be therefore caused to rock the block 102 and so elevate and depress the forward end of arm 95 to effect proper adjustment of its rear end for the purpose described. The block 102 is formed with a hub 106 provided 25 with a tapped aperture to receive a screw for binding it to the rock shaft. The block 102 is angular in side elevation having five flat faces, the three upper ones 107, 108, 109 of which cooperate with a positioning leaf 30 spring 110 secured at its rear end to the hanger 4. The surface 112 and the lower edge or angle at which this surface and that 111 meet, form two stop surfaces for limiting the upward movement of the forwardly 35 extending arm 6 of the ribbon vibrator bell crank to thereby positively arrest the throw of the ribbon vibrator.

With the parts in position indicated, the arm 6 of the bell crank will abut against the 40 corner of the block at which the surfaces 111, 112 meet. This corner is farther from the axis 103 than is the surface 112. If the block be rocked to carry its arm 101 upwardly, the rear end of arm 95 will be lowered and its surface 97 will be brought into 45 operative relation to projection 99. In such case, the surface 112 of the block will be brought into position to arrest the bell crank arm 6 at such point to permit printing from the next or lower zone of the ribbon. If, 50 however, the block be rocked to carry arm 101 downwardly until the edge at which surfaces 111 and 109 meet is opposite the bell crank arm 6, then the rear edge of arm 55 95 will be carried above projection 99 so that on actuation of the universal bar there will be no movement of the ribbon vibrator, a condition required for stencil work. The lever arm for operating the link 50 has a 60 coiled spring 113 applied to it above its pivot and the lower end of the spring is attached to the frame below said pivot. When the arm is rocked forward until arrested by stop 114, then the arm 101 of 65 the rocking block 102 will be carried down

to such a point as to lift the rear edge of arm 95 above the path of the projection 99. The spring 113 will tend to hold the lever arm 105 in this position. If the arm 105 be 70 in the position shown, the spring 113 will tend to retain it in that position and the arm will bear against a projection 115 on a spring arm 116 attached to the side plate of the frame. In this position the machine is 75 adjusted for printing from the upper zone of the ribbon. If the spring arm 116 be pressed laterally to carry the stop projection 115 out of the path of the lever arm 105, the latter may then be drawn forward until arrested by stop 117 against which it will be 80 held by reaction of spring 113 and the adjustment then, as already stated, will be for printing from the lower zone of the ribbon. The arm 95 operates as a thrust arm or link. Its pivotal connection with the bell crank 85 arm 11 is incidental to its adjustment for the purpose of varying the throw of the vibrator. It has the advantage of acting directly upon the ribbon vibrator bell crank to which it is attached and makes possible a 90 simple effective construction comprising a small number of parts.

The spring 113 may be dispensed with if the spring 110 which locates the cams is made strong enough to take care of both the 95 cam and lever 105.

I claim—

1. Ribbon mechanism for a typewriting machine, comprising a ribbon vibrator, its 100 operating bell crank lever having one of its arms horizontally disposed and operatively connected with the vibrator, a horizontally disposed endwise movable arm pivoted to the other arm of the bell crank lever and 105 having at its rear surfaces at different distances from its pivot, a part operated by the movement of the universal bar and adapted to operate upon either of said surfaces to impart different extents of movement to the endwise movable arm and means for adjust- 110 ing the rear end of said arm vertically to bring either of said surfaces into operative relation to said part to effect a desired extent of movement of the vibrator.

2. Ribbon mechanism for a typewriting 115 machine, comprising a ribbon vibrator, its operating bell crank lever having one of its arms horizontally disposed and operatively connected with the vibrator, a horizontally 120 disposed endwise movable arm pivoted intermediate its ends to the other arm of the bell crank lever and having at its rear end surfaces at different distances from its pivot, a part operated by the movement of the universal bar and adapted to operate upon 125 either of said surfaces to impart different extents of movement to the endwise movable arm and means connected to the endwise movable arm in front of its pivot to effect adjustment of its rear end to bring 130

either of said surfaces into operative relation to said part to effect a desired extent of movement of the vibrator.

3. Ribbon mechanism for a typewriting machine, comprising a ribbon vibrator, its operating bell crank lever having one of its arms horizontally disposed and operatively connected with the vibrator, a horizontally disposed endwise movable arm pivoted intermediate its ends to the other arm of the bell crank lever and having at its rear end surfaces at different distances from its pivot, a universal bar movable fore and aft of the machine on actuation of the character keys, a part actuated by the movement of the universal bar and adapted to operate upon either of said surfaces to impart different extents of movement to the endwise movable arm, and adjustable means applied to the endwise movable part serving to move its rear end vertically to bring either of said surfaces into operative relation to said part actuated by the universal bar to effect a desired extent of movement of the vibrator.

4. Ribbon mechanism for a typewriting machine comprising a ribbon vibrator, a bell crank lever having a horizontal arm operatively connected with the vibrator and a downwardly extending arm, an endwise movable arm pivoted to the downwardly extending arm of the bell crank and having surfaces in different lines in rear of its pivot, operating means actuated by the universal bar and adapted to act upon either of said surfaces to impart different extents of movement to said arm and means for adjusting said arm to bring the desired one of its surfaces into coöperative relation to said operating means.

5. Ribbon mechanism for a typewriting machine comprising a ribbon vibrator, a bell crank lever having a horizontal arm operatively connected with the vibrator and a downwardly extending arm, an endwise movable arm pivoted to the downwardly extending arm of the bell crank and having surfaces in different lines in rear of its pivot, operating means actuated by the universal bar and adapted to act upon either of said surfaces to impart different extents of movement to said arm and means for adjusting said arm to bring the desired one of its surfaces into coöperative relation to said operating means combined with adjustable stop devices acting to positively limit the respective movements of the ribbon vibrator.

6. Ribbon mechanism for a typewriting machine, comprising a ribbon vibrator, its operating bell crank lever having one of its arms horizontally disposed and operatively connected with the vibrator, a horizontally disposed endwise movable arm pivoted to the other arm of the bell crank lever and having at its rear surfaces at different distances from its pivot, a part operated by the

movement of the universal bar and adapted to operate upon either of said surfaces to impart different extents of movement to the endwise movable arm and means for adjusting the rear end of said arm vertically to bring either of said surfaces into operative relation to said part to effect a desired extent of movement of the vibrator, combined with adjustable stop devices acting to positively limit the respective movements of the vibrator.

7. Ribbon mechanism for a typewriting machine, comprising a ribbon vibrator, its operating bell crank lever having one of its arms horizontally disposed and operatively connected with the vibrator, a horizontally disposed endwise movable arm pivoted intermediate its ends to the other arm of the bell crank lever and having at its rear end surfaces at different distances from its pivot, a part operated by the movement of the universal bar and adapted to operate upon either of said surfaces to impart different extents of movement to the endwise movable arm and means connected to the endwise movable arm in front of its pivot to effect adjustment of its rear end to bring either of said surfaces into operative relation to said part to effect a desired extent of movement of the vibrator, combined with adjustable stop devices acting to positively limit the respective movements of the vibrator.

8. Ribbon mechanism for a typewriting machine, comprising a ribbon vibrator, its operating bell crank lever having one of its arms horizontally disposed and operatively connected with the vibrator, a horizontally disposed endwise movable arm pivoted intermediate its ends to the other arm of the bell crank lever and having at its rear end surfaces at different distances from its pivot, a universal bar movable fore and aft of the machine on actuation of the character keys, a part actuated by the movement of the universal bar and adapted to operate upon either of said surfaces to impart different extents of movement to the endwise movable arm, and adjustable means applied to the endwise movable part serving to move its rear end vertically to bring either of said surfaces into operative relation to said part actuated by the universal bar to effect a desired extent of movement of the vibrator, combined with adjustable stop devices acting to positively limit the respective movements of the vibrator.

9. Ribbon mechanism for a typewriting machine comprising a ribbon vibrator, a bell crank lever having a horizontal arm operatively connected with the vibrator and a downwardly extending arm, an endwise movable arm pivoted to the downwardly extending arm of the bell crank and having surfaces in different lines in rear of its pivot, operating means actuated by the uni-

versal bar and adapted to act upon either of said surfaces to impart different extents of movement to said arm and means for adjusting said arm to bring the desired one of its surfaces into coöperative relation to said operating means, combined with adjustable stop devices acting to positively limit the respective movements of the vibrator.

10. Ribbon mechanism for a typewriting machine comprising the combination of a ribbon vibrator and adjustable means for controlling the movement of the vibrator so that at will different zones thereof may be printed from and the ribbon removed from the field of printing for stencil work, said adjustable means comprising a controlling lever and three stops for positively limiting its movement, two of said stops being fixed and the third, intermediate the other two,

normally in the path of the lever, and adapted to be moved out of the path of the lever when required for adjustment for stencil work.

11. The combination with the adjustable stop block, of the ribbon vibrator, its operating lever, the endwise movable link pivoted intermediate its ends to the lever and adapted to actuate it through different distances and an adjusting link connected with the stop block and with the endwise movable link in front of its pivot.

In testimony whereof, I have hereunto subscribed my name.

EDWARD B. HESS.

Witnesses:

EDWARD L. BOESCH,
GEORGE F. HANDLEY.