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E. B. HESS.

TYPE WRITING MACHINE.

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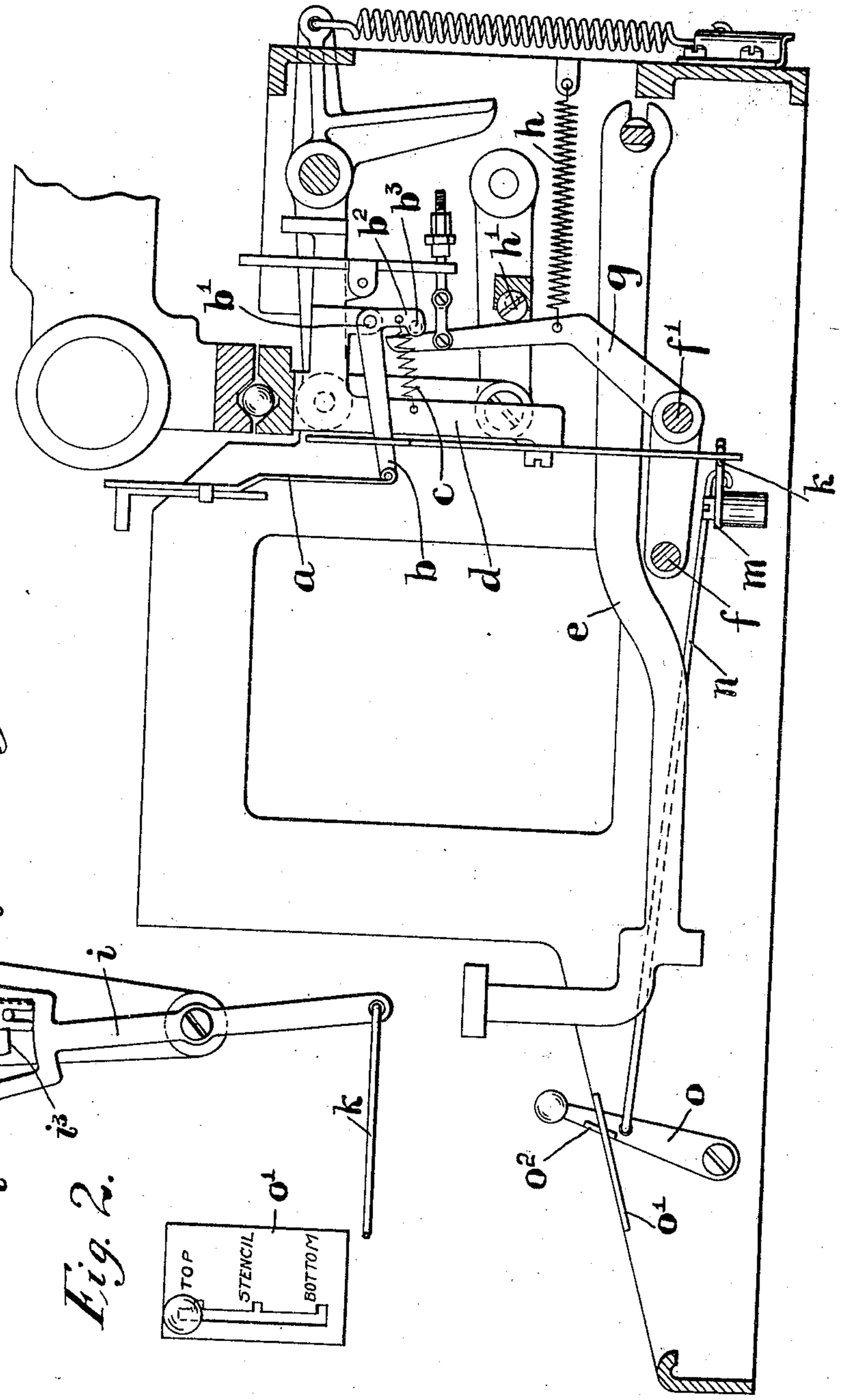

Fig. 1.

Fig. 3.

Fig. 2.

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TYPE-WRITING MACHINE.

No. 865,894. Specification of Letters Patent. Patented Sept. 10, 1907.

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To all whom it may concern:

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

This invention relates primarily to ribbon mechanism for visible writing machines. Its object is to provide a simple and effective way of normally holding the ribbon guide or vibrator retracted to maintain the ribbon below the printing point, and to project it to bring the ribbon to the printing point at the moment the type makes impact against the platen. A ribbon vibrator, or guide, which may be of ordinary, or of any suitable character, and which is adapted to hold the ribbon normally below the line of print, has applied to it a spring whose reaction tends to project it to bring the ribbon to the printing point at the moment of impression. Suitable means for normally holding the vibrator retracted against the tension of its spring are controlled on the depression of a finger piece to permit the spring of the vibrator to project it to bring the ribbon, at the moment of impression, to the printing point. To adapt this construction to the use of polychrome ribbons, or ribbons having parallel zones of different character or color, there is provided means, that may be set or adjusted by the operator, to positively determine the extent of projection that may be imparted to the ribbon vibrator by its spring and to thereby determine which one of two or more zones of the ribbon shall be carried to the printing point at the moment of impression.

This invention is applicable both to push pin and key lever machines and to machines in which for upper and lower case printing the type bar segment or basket, or the platen is shiftable. It is shown applied to a key lever machine.

In the accompanying drawings: Figure 1, is a vertical longitudinal section showing so much only of a writing machine as is deemed desirable to illustrate this invention; Fig. 2, a detail plan of an indicator plate in the key board associated with the devices for determining the extent of movement of the ribbon vibrator; and Fig. 3, a detail view of the stop device for arresting the upward movement of the vibrator.

a is a ribbon guide or vibrator vertically disposed and pinned at its lower end to the horizontally disposed arm b of a bell crank lever pivoted at b' in a projection extending from the front or shift rail of the carriage. The downwardly extending arm b^2 of this bell crank has applied to it a coiled spring c, attached at its front end to some fixed part as, for instance, to a downward projection d from the shifting carriage rail.

e indicates a horizontally disposed key lever of which there is one for each type bar.

f is an ordinary universal bar carried in arms fast on a rock shaft f' from which extends an upright arm g having attached to it one end of a universal bar spring h whose other or rear end is attached to a fixed part of the frame. This universal bar spring is to be materially stronger than the ribbon vibrator spring c and hence the upper end of arm g which lies immediately in front of a pin or projection b^3 on the side of the end of the arm b^2 of the bell crank lever will carry the latter rearwardly overcoming tension of spring c and holding the ribbon vibrator in its lowermost position. An adjustable eccentric stop h' limits the rearward movement of arm g. When a key lever is depressed the universal bar is carried down and its rock shaft f' is rotated moving arm g away from the downwardly disposed arm of the bell crank lever thereby permitting the spring of the ribbon vibrator lever to move it upwardly to carry the ribbon to the printing point.

To arrest the vibrator at the proper point with reference to the line of print a suitable stop device is employed. This may conveniently be a rocking lever or plate i through an opening in which the horizontally disposed arm b of the ribbon vibrator bell crank passes, its upward movement being limited by the stop surface of the plate. To adapt the device for the use of a plural zone ribbon the opening in the plate may be formed with plural stop surfaces of different elevation. Thus surface i' will arrest the vibrator at such point that printing will take place from the upper zone of the ribbon: surface i^2 will permit printing from the lower zone; and surface i^3 will hold the vibrator down for stencil work. The stop devices for thus controlling the ribbon vibrator may be of any suitable character. In the special form illustrated the rocking lever or plate i is pivoted at j on the projection d from the shift rail of the carriage. Its lower end is jointed to a laterally extending link k connected to one arm of a bell crank lever m, whose other arm is connected to a link n extending forward to a lever o located at the side of the key board and working in a slot in the indicator plate o'. A projection o^3 on the side of the lever engages notches in one of the side walls of the slot. The plate may appropriately have the words "Top", "Stencil" and "Bottom" when the ribbon has two zones only.

I claim:

1. A visible writing machine comprising the combination of a ribbon vibrator, a spring applied thereto whose reaction tends to elevate the vibrator to bring the ribbon to printing position, means acting to normally hold the ribbon vibrator down against the tension of the spring but moved to permit elevation of the vibrator when the finger pieces of the machine are operated and adjustable stop devices to determine the extent of elevation of the vibrator by its spring.

2. A visible writing machine comprising the combination of a ribbon vibrator, a spring applied thereto whose reac-

tion tends to elevate the vibrator to bring the ribbon to printing position, means acting to normally hold the ribbon vibrator down against the tension of the spring but moved to permit elevation of the vibrator when the finger pieces of the machine are operated and adjustable stop devices controlled by a device in the key board to determine the extent of elevation of the vibrator by its spring.

3. A visible writing machine comprising the combination of a ribbon vibrator, means for elevating it comprising a spring whose reaction tends to raise the vibrator to bring the ribbon to the printing point, a part movable with the universal bar and acting normally to overcome the tension of the vibrator spring and hold the vibrator in normal low position, means for operating the universal bar on depression of the finger pieces and to thereby move said part to permit elevation of the vibrator by its spring and adjustable stop devices under the control of the operator to determine the extent of elevation of the vibrator by its spring.

4. A visible writing machine comprising the combination of a ribbon vibrator, a spring applied thereto whose reaction normally tends to elevate the vibrator to bring the ribbon to the printing point, a movable part acting to normally overcome the tension of the spring to hold the ribbon vibrator depressed and means for actuating said part on depression of the finger pieces to permit the spring to raise the vibrator to bring the ribbon to the printing point.

In testimony whereof, I have hereunto subscribed my name.

EDWARD B. HESS.

Witnesses:
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