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J. S. HEXTER

TYPEWRITING MACHINE

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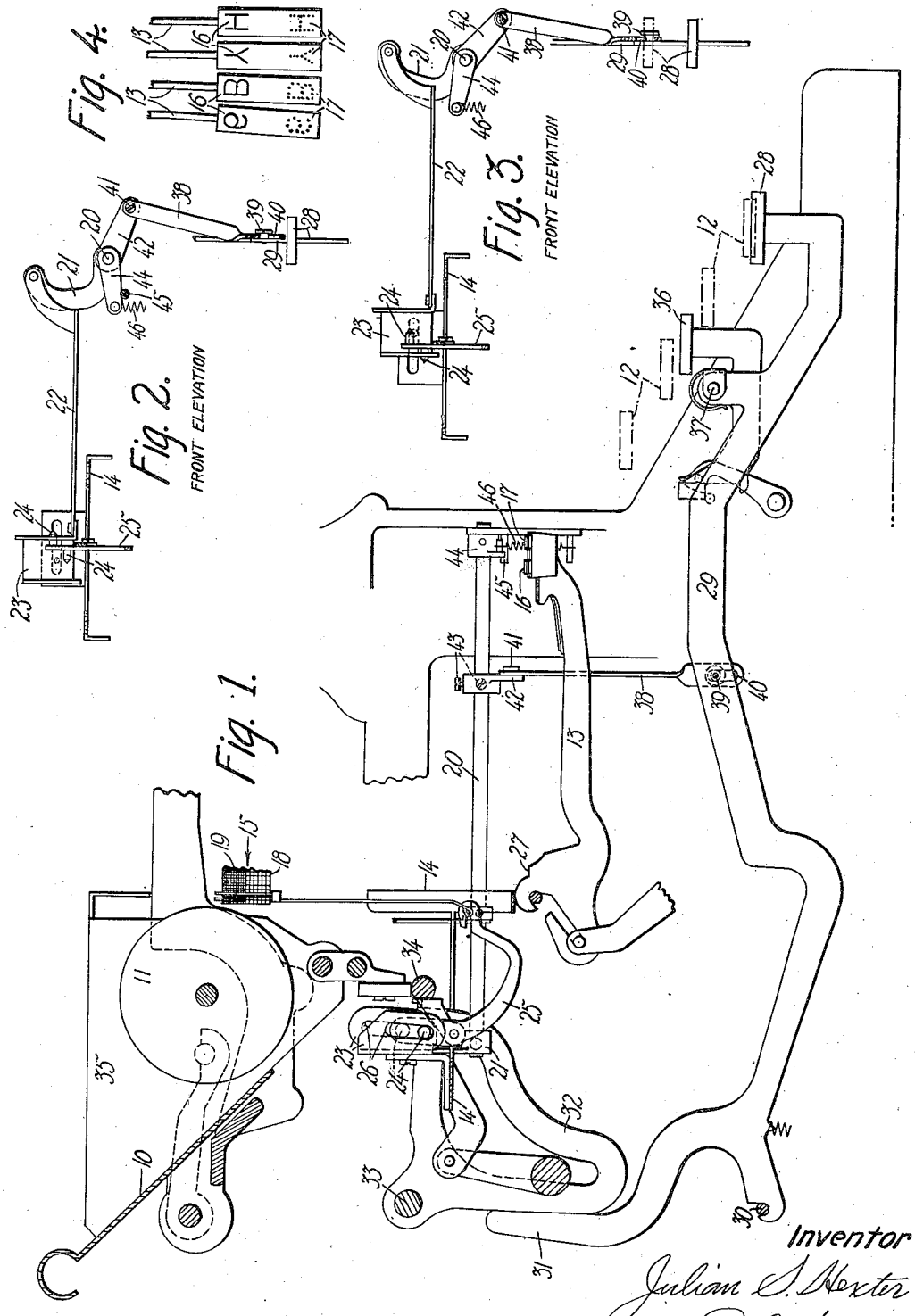


Fig. 1.



Fig. 2. FRONT ELEVATION



Fig. 3. FRONT ELEVATION



Fig. 4.

Inventor:
Julian S. Hexter
by D. C. Hickney
Attorney

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JULIAN S. HEXTER, OF CHICAGO, ILLINOIS, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

## TYPEWRITING MACHINE.

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This invention relates to means for typing entries upon checks and upon their attached vouchers, it being desired to protect the check against alteration.

Heretofore in typing combined checks and vouchers, it has been proposed to employ a pin-point machine for typing the checks, and then reinserting the combined checks and vouchers in another machine which is provided with plain types and a plain record ribbon for typing the vouchers clearly.

In carrying out the present invention there is employed upon the typewriting machine a complete set of alphabetical and numeral types, all of which are capital letters, these being plain types and being used in typing the detachable voucher which is usually printed upon the same sheet as the check. Upon the same type-blocks or type-bars there is also provided a complete set of alphabetical and numeral pin-point or check-protecting types, which permit the typing of the check itself with protecting indentations. The pin-point types are brought into use by the depression of the capital shift-key upon the typewriting machine.

The typewriting machine is provided with a black record ribbon for use in typing the vouchers, while there is connected to said shift-key a bichrome ribbon-mechanism, which brings into use an indelible ink-ribbon automatically, so that when the pin-point types indent the paper, the ink from the indelible ribbon may be forced into the indentations for protecting the check. Hence by means of a single machine, both the check and the voucher may be made out in a satisfactory manner, and with a substantial saving of time, labor and expense.

In the Underwood typewriting machine there is provided a ribbon-vibrating mechanism to automatically raise the ribbon in front of the type at each key-depression. There is also provided mechanism to selectively present to the type either the upper or lower field of a bichrome ribbon; said selecting mechanism being controlled by a key-lever at the front of the machine. Other mechanism in the Uderwood machine comprises a shift-key and linkage to raise the platen to render effective the upper case types, so that, when the keys are operated, the upper case types will strike the platen.

According to one feature of this invention, there is provided mechanism to operatively connect the platen shift-key to the ribbon-field selecting mechanism, so that, when the shift-key is operated to present the platen to the upper case types, simultaneously, the ribbon-vibrating mechanism will be rendered effective to present the upper field of the ribbon to the types. To this end, there is provided a one-way connection between the shift-key lever and a ribbon-field selecting shaft, which may comprise an arm fast thereto, and a downwardly-extending link connecting said arm to the shift-key lever.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a cross-sectional view, in elevation, through the center of an Underwood typewriting machine, showing the invention applied thereto.

Figure 2 is a detail of the ribbon-field selecting mechanism operatively connected to the shift-key lever in its normal position.

Figure 3 shows the same mechanism illustrated in Figure 2, in its operated position.

Figure 4 is a detail of the type-heads, showing the plain capital type in lower case, and the perforating type used in upper case position.

A combined check and voucher, upon which it is desired to type some data, is inserted over a table 10 at the rear of the machine, under a platen 11 and up in front thereof past the printing point. Then the keys 12 are depressed to swing type-bars 13 which are operatively connected to a universal bar 14 which raises a ribbon 15 in front of the types at each key-depression.

The type-head of each of the set of type-bars comprises two types, the lower case capital or numeral type 16, and the upper case capital or numeral type 17, the latter being designed to perforate the check at each key-depression. Typing upon the voucher is done with lower-case types through a black record field 18 of the ribbon, while for typing on the check, the upper-case types are used in combination with a purple indelible field 19 of the ribbon.

In the Underwood machine there is provided mechanism whereby the ribbon is vibrated to present either the upper or lower portion of a bicrome ribbon to the printing field, and the mechanism is controlled by a key at the front of the machine. Said ribbon vibrating and selecting mechanism is

disclosed in the patent to F. A. Cook, No. 926,050 of June 22, 1909, and need not herein be described. As modified in the present invention, this mechanism comprises a rock-shaft 20 upon which the operating key is mounted, and the shaft is effective, by means of an arm 21 fast thereto and a connecting link 22, to engage either side of a plate 23 with either of two pins 24 at either side of a vibrating lever 25. In this manner, by shortening or increasing the length of the actuating arm of the lever 25, the ribbon is raised to either present the upper or the lower field to the type. It will be noted that the pins engage alternatively with either of two slots 26 in the plate 23 fast to the universal bar 14, which is struck by a heel 27 on the type-bar and is disposed for horizontal travel.

In order to raise the platen to a position corresponding to the upper case type in which the type 17 will strike the work-sheet, there is provided mechanism in the Underwood machine which may comprise a key 28 actuating a key-lever 29. When the key is depressed, the key-lever is rocked on a fulcrum shaft 30 and the upwardly-extending arm 31 of the lever is swung forwardly. By the action of the arm 31 a rocking piece 32 is swung on a rocking shaft 33, and consequently a rail 34 fast thereto is raised, thereby raising the platen-frame 35 which is mounted for longitudinal travel along the rail.

One of the features of this invention is the operative connection of the two mechanisms hereinbefore described in such a manner that when the shift-key is depressed to raise the platen to upper case position, the ribbon-vibrating mechanism will simultaneously be set to present to the type the upper field of the ribbon at each key-depression.

It will be noted that whereas in the ordinary typewriting machine the function of the shift-key is to present the platen to upper case characters, in this invention the shift-key is also used to present the platen to check-perforating type. A locking key 36 is pivotally mounted upon the shift-key lever at 37. The perforating types may imprint or cut the check through an indelible ribbon.

In order that, when the shift-key is operated to present the platen to the upper case types, the ribbon may be vibrated in the upper field, there is provided a link 38 operatively connecting the key-lever 29 to the rock-shaft 20 of the ribbon-vibrating mechanism. Said link is slidably mounted on the lever 29 by means of a pin 39 fast thereto and engaging with a slot 40 in the link. The purpose of the slot is to allow for additional travel of the key-lever relatively to the rock-shaft. The upper end of the link 38 is mounted on a pin 41 fast to an arm 42, which is, in turn, fast to the rock-shaft by means of set-screws 43. The travel of the rock-shaft is limited by an arm 44 fast to the shaft and co-operating with a pin 45 fast to the frame of the machine. There is also provided a spring 46 secured at the end of the arm 44 and to the frame to return the ribbon-vibrating mechanism to its normal or lower field position, as shown in Figure 2.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriting machine having a platen and a case-shift mechanism, a ribbon-vibrating mechanism and means for selectively controlling the printing zones of a bichrome ribbon, a set of plain alphabetical and numeral printing types in the lower case, a set of alphabetical and numeral upper-case perforating types, and means controlled by the platen-shift mechanism to shift the ribbon-vibrating mechanism so as to present the upper field of the ribbon to the upper-case types and the lower field of the ribbon to the lower-case types.

2. In a typewriting machine having a platen and a case-shift mechanism, a ribbon-vibrating mechanism and means for selectively controlling the printing zones of a bichrome ribbon, a set of plain alphabetical and numeral printing types in the lower case, a set of alphabetical and numeral upper-case perforating types, and means controlled by the platen-shift mechanism to shift the ribbon-vibrating mechanism so as to present the upper field of the ribbon to the upper-case types and the lower field of the ribbon to the lower-case types, said last-mentioned means including connecting linkage between the case-shift mechanism and the ribbon-vibrating mechanism.

3. A typewriting machine for typing at one insertion a check with its detachable voucher, including the combination of a platen, case-shifting means for bringing into use either the upper or the lower case types of a system of type-bars, said type-bars carrying both plain and check-protecting sets of types, one set in lower case and the other set in upper case, each set including both alphabetical and numeral types, a ribbon-mechanism, and means for selectively controlling the printing zones of a bichrome ribbon, said ribbon-controlling means including a rock-shaft overlying the shift-key and substantially parallel thereto, and means for operatively connecting said shaft to the shift-key to selectively control the printing zones of the ribbon by the depression of the shift-key.

4. A typewriting machine for typing at one insertion a check with its detachable

voucher, including the combination of a platen, case-shifting means for bringing into use either the upper or the lower case types of a system of type-bars said type-bars carrying both plain and check-protecting sets of types, one set in lower case and the other set in upper case, each set including both alphabetical and numeral types, a ribbon-mechanism, and means for selectively controlling the printing zones of a bichrome ribbon, said ribbon-controlling means including a rock-shaft overlying the shift-key and substantially parallel thereto, and means for operatively connecting said shaft to the shift-key to selectively control the printing zones of the ribbon by the depression of the shift-key, said last-mentioned means including a spring effective to hold the rock-shaft in a position to vibrate the ribbon in lower case at the depression of the key, and a link operatively connecting an arm fast to the rock-shaft and the shift-key lever.

5. In combination with a typewriting machine having a platen, a platen-shift mechanism including a key-lever, a ribbon-vibrating mechanism, and means for selectively presenting either the upper or the lower printing field of a bichrome ribbon, said selecting means including a rock-shaft extending rearwardly from the front of the machine and substantially parallel to the key-lever, type-bars co-operating with said platen, each of said type-bars having an upper-case perforating type and a lower-case plain printing type, keys to operate said type-bars, and means for operatively connecting the rock-shaft of the ribbon-selecting means to the shift-key lever so that the ribbon will normally be vibrated in lower printing field at each lower-case-type-key depression and in upper printing field at each upper-case-type-key depression.

6. In combination with a typewriting machine having a platen, a platen-shift mechanism including a key-lever, a ribbon-vibrating mechanism, and means for selectively presenting either the upper or the lower printing field of a bichrome ribbon, said selecting means including a rock-shaft extending rearwardly from the front of the machine and substantially parallel to the key-lever, type-bars co-operating with said platen, each of said type-bars having an upper-case perforating type and a lower-case plain printing type, keys to operate said type-bars, and means for operatively connecting the rock-shaft of the ribbon-selecting means to the shift-key lever so that the ribbon will normally be vibrated in lower printing field at each lower-case-type-key depression and in upper printing field at each upper-case-type-key depression, said last-mentioned means including an arm fast to the rock-shaft and a link operatively connecting said arm to the shift-key lever.

7. A machine for typing checks having detachable vouchers thereon, comprising a set of plain alphabetical and numeral types for typing the vouchers, a set of perforating alphabetical and numeral types for typing the checks, a single set of keys controlling both sets of types, a shift-key for bringing either set of types into use, and a bichrome ribbon mechanism controlled by said shift-key for bringing into use a different ribbon to co-operate with the perforating types.

JULIAN S. HEXTER.