

(No Model.)

J. B. PRICE.
TYPE WRITING MACHINE.

No. 585,783.

Patented July 6, 1897.

Fig. 1.

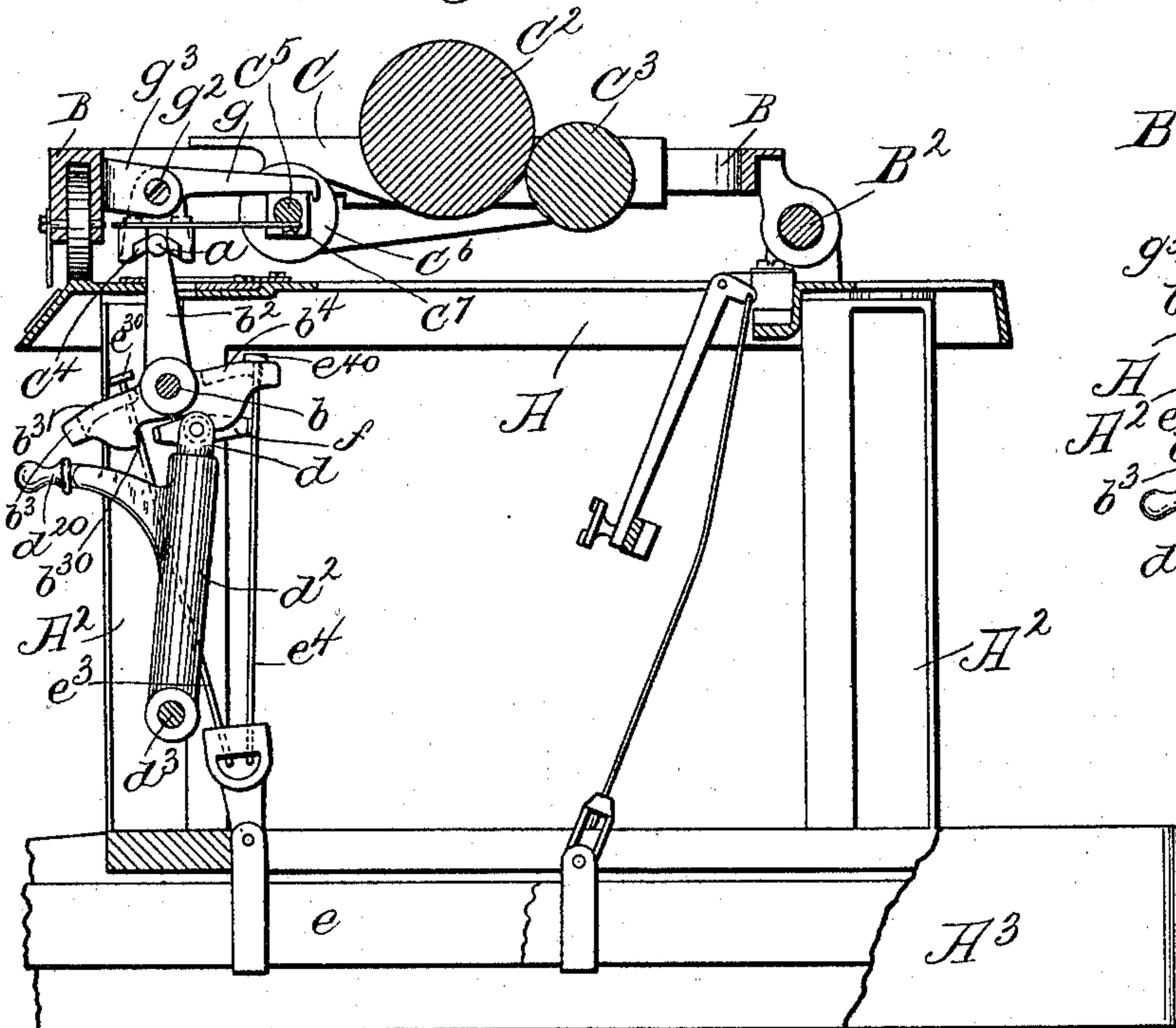


Fig. 2.

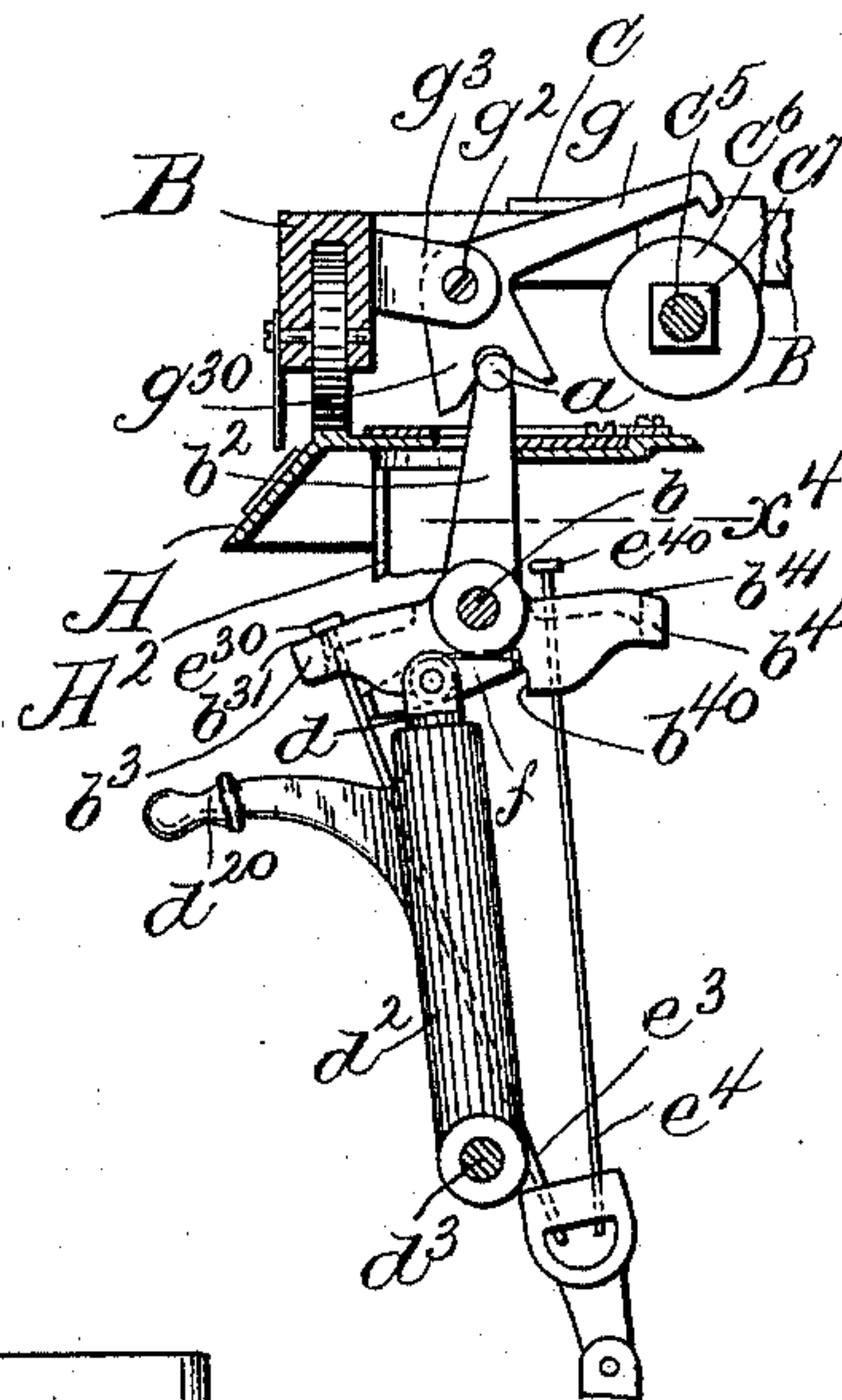


Fig. 3.

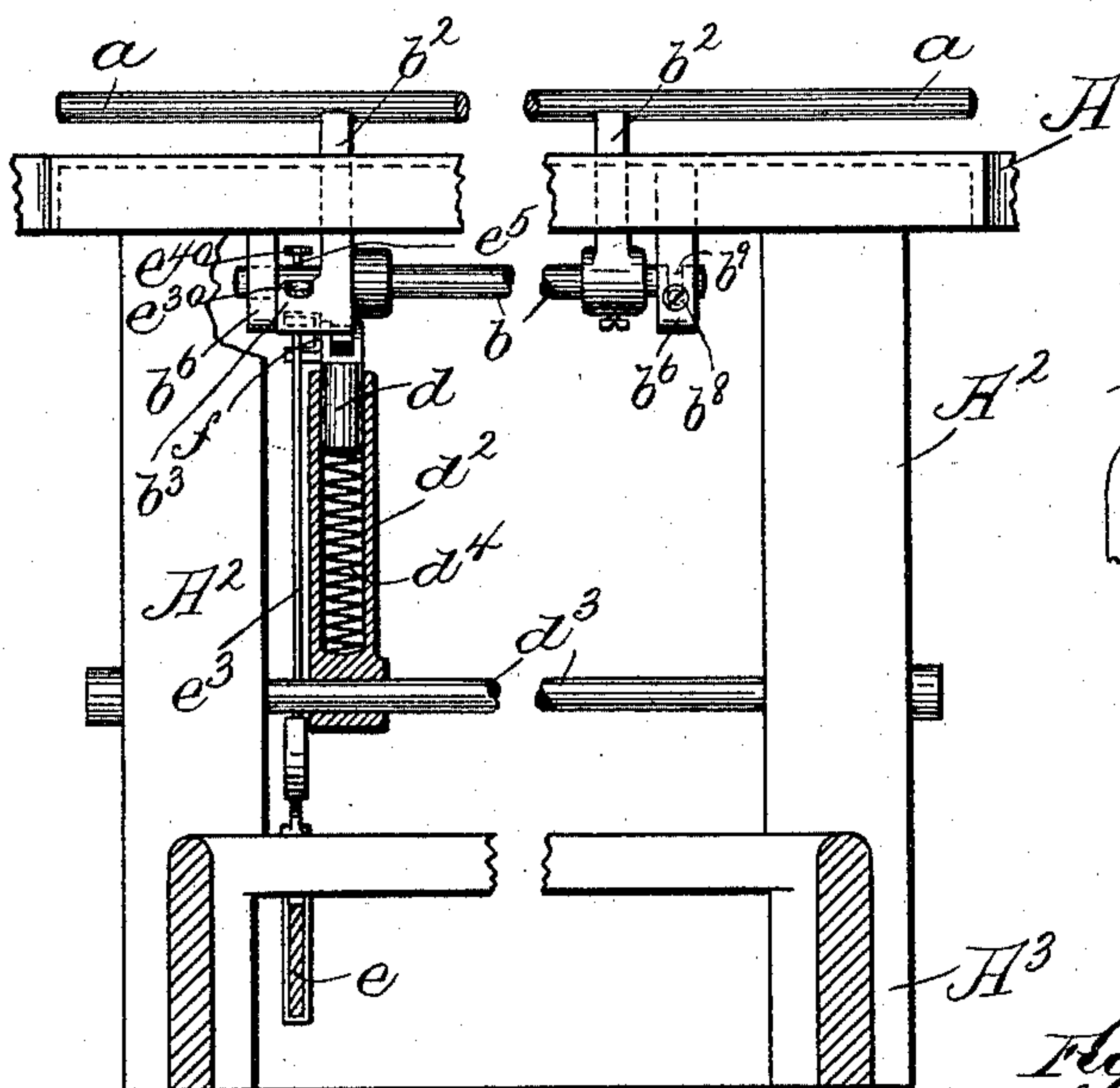


Fig. 4.

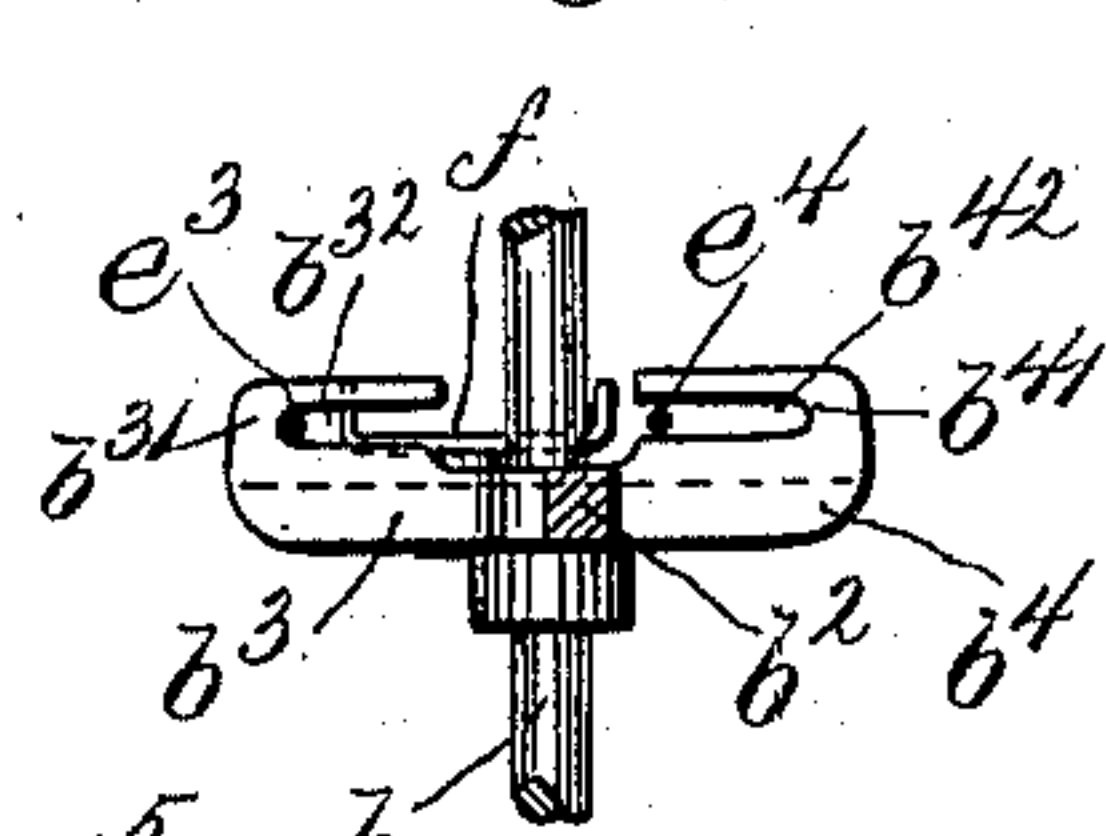


Fig. 5.

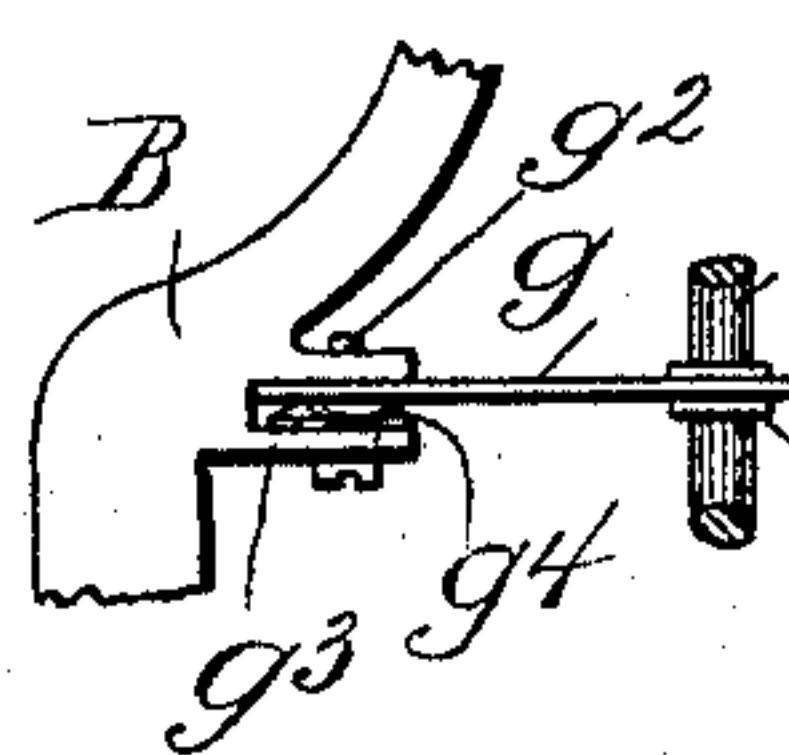


Fig. 6.

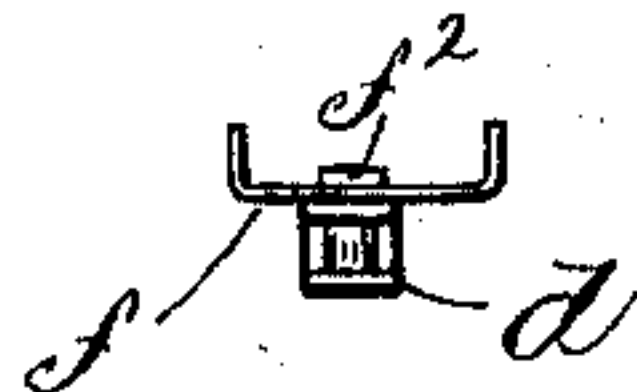
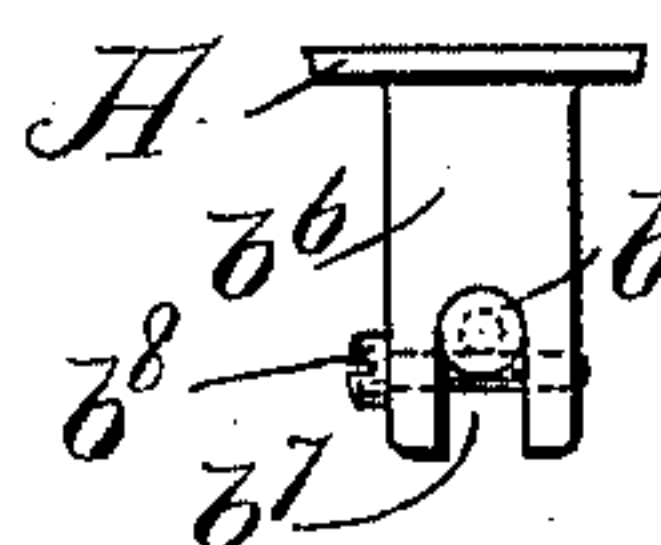


Fig. 7.



Fig. 8.



Witnesses
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Att'y

UNITED STATES PATENT OFFICE.

JOHN B. PRICE, OF WOLLASTON, MASSACHUSETTS, ASSIGNOR TO THE
MANHATTAN TYPEWRITER COMPANY, OF NEW JERSEY.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 585,783, dated July 6, 1897.

Application filed November 20, 1896. Serial No. 612,818. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. PRICE, of Wollaston, county of Norfolk, and State of Massachusetts, have invented an Improvement in
5 Type-Writers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present invention relates to a type-
10 writer; and it consists, mainly, in details of construction which are applicable to machines having two types on each type-bar—such, for example, as the well-known Remington machine—the invention being embodied in an
15 improved construction and arrangement of the device for shifting the platen-frame from the lower-case position to the upper-case position, and its connection with a shift-key provided for temporarily shifting the said platen
20 from the position in which it is at any time retained by said shifting device to the other position.

The invention further consists in an improved device for locking the said platen-
25 frame to the pivoted carriage to prevent the platen from falling back by gravity when the carriage is lifted by the operator to expose the writing, the said locking device being normally in locking position instead of depending upon the force of gravity to carry it to
30 such locking position when the platen is raised, as is the case with the locking devices heretofore employed for this purpose. The said locking device in accordance with the
35 present invention is arranged to be automatically unlocked when the platen is to be shifted from its normal position, a connection being made with the shifting-rod, as will be hereinafter described.

40 The platen-shifting device constructed in accordance with the present invention comprises the usual rock-shaft having arms connected with the shift-rod which controls the movement of the platen-frame on the carriage, the said rock-shaft being provided with
45 an arm having an engaging portion at each side of its axis adapted to be engaged by a spring-pressed plunger provided with means for shifting its point of engagement from one
50 to the other of said engaging portions, so that when said plunger is in one position the spring

thereof will tend to turn the said rock-shaft in one direction, and when the said plunger is in the other position it will tend to turn the said rock-shaft in the other direction, so
55 that the position of the platen is primarily determined by the position of the spring-plunger.

To temporarily shift the platen from either position in which it may be held by the said
60 shifting device by a shift-key, such as is usually provided, the connection between said shift-key and the rock-shaft is so arranged that the shifting of the spring-plunger also shifts the point of engagement of the shift-
65 key connection, so that the operation of said shift-key in all cases moves the carriage against the stress of the spring, the direction of movement being away from the position determined by the position of said spring.
70 The said plunger is arranged to engage with the under surface of the arms of the rock-shaft, and, as herein shown, the said rock-shaft is supported in forked bearings extending downward from the top plate of the frame,
75 being held in position at one end by the upward pressure of the spring and at the other end by a screw or pin extending across the fork below the said rod. The said shifting device is thus readily removable from the re-
80 mainder of the machine, its removal being accomplished by merely taking out the said retaining pin or screw, when said shaft can be withdrawn from said forked supports.

The locking device for the shifting platen-
85 frame consists of a hooked lever pivotally secured to the carriage-frame and adapted to extend over and engage a portion of the shifting platen-frame, so as to prevent the movement thereof with relation to the carriage
90 when the latter is lifted to expose the writing. In order to disengage the said hook to permit the rearward movement of the platen when the shifting device or shift-key is operated, the said hook is provided with a forked ex-
95 tension at the opposite side of its pivot or fulcrum, adapted to engage with the shifting-rod, so that when the said shifting-rod is moved to shift the carriage the lever is rocked on its pivot and the hooked end thereof lifted
100 out of engagement with the carriage.

Figure 1 is a sectional elevation of a suffi-

cient portion of a type-writing machine to illustrate the invention, part of the front upright of said frame being broken away to show the platen-shifting device in elevation. Fig. 2 is a detail showing the said carriage-shifting device in its other position. Fig. 3 is a front elevation of the machine, certain parts being omitted for convenience; Fig. 4, a sectional plan on line x^4 , Fig. 2; Fig. 5, a detail showing in plan the device for controlling the shift-key connection; Fig. 6, a detail showing the carriage-locking device in plan; Fig. 7, a detail thereof to be referred to, and Fig. 8 an end elevation of the shifting-rock-shaft bearing.

The top frame-plate A, mounted on the uprights or supports A^2 , extending upward from the base A^3 , may be and are shown as substantially like those of the well-known Remington type-writer.

The carriage B is pivotally supported on the guide-rail B^2 on the said top plate A and is adapted to support the shifting platen-frame C, which carries the platen C^2 and paper feed-roll C^3 , all of which may be of usual construction. The position of the platen is shifted with relation to the type (each type-bar containing two characters, such as the upper-case and lower-case form of a given letter) by the usual shift-rod a , connected with arms or uprights b^2 on the rock-shaft b , which is supported in suitable bearings, which will be hereinafter described, so that by rocking the said shaft the shift-rod is moved laterally to correspondingly move the platen-frame C, which is engaged thereby through the agency of jaws C^4 , connected with the cross rod C^5 , which also forms a bearing for the paper-feed pulleys C^6 .

The normal position of the platen, as shown, is its forward position with relation to the carriage, the type-bars being so arranged that the lower-case letter will be presented to the surface of the paper if a key is operated when the carriage is in this position. To print an upper-case letter, therefore, it is necessary to shift the carriage to its rearward position, a suitable shift-key being provided for this purpose, as will be described. Means are also provided, however, for shifting the carriage so that it will remain in abnormal position, and the shift-key connections are so arranged that said shift-key will then produce an opposite movement of the carriage, so that when the said carriage is shifted to the upper-case position to print capital letters continuously it can be temporarily shifted so as to print a lower-case letter or correspondingly-located character when required. This is accomplished in accordance with the present invention in the following manner:

The rock-shaft b , to which the shift-rod a is connected, is provided with lateral arms b^3 b^4 , having on their lower side a transverse engaging surface, against which rests a plunger d , mounted in a guide-stem d^2 , pivoted upon a cross-rod d^3 , extending across the machine

near the lower front portion thereof. The said guide-support d^2 is herein shown as a tubular stem in which the plunger d is longitudinally movable, being normally pressed outward by means of a spring d^4 , it being obvious that the pressure of the plunger d against the surface of the arms b^3 or b^4 will tend to rock the shaft b in one direction or the other, according as said spring acts upon one or the other of said arms.

As shown in Fig. 1, the plunger d is in a position to bear against the surface of the arm b^4 at the rear of the axis of the rock-shaft b , so that the shift-rod is normally held forward and the platen maintained in its forward position. In order to shift the platen to and retain it in its rearward position, the guide-support d^2 is rocked on its pivot, as by a handle d^{20} , until the plunger d is shifted into engagement with the opposite arm b^3 , as indicated in Fig. 2, the said arms b^3 b^4 being provided with shoulders b^{30} b^{40} at the ends of the surface engaged by the plunger d to limit the movement of said plunger and determine the position thereof with relation to the axis of the rock-shaft b .

In order to temporarily shift the carriage from either position, the usual shift-key upon the key-lever e is employed, said key-lever being provided with a connecting device whereby the downward movement of said key will rock the shaft b against the stress of the spring d^4 to temporarily shift the carriage from its normal position during the operation of the machine.

In order to shift the carriage in either direction by operating the said key, means are provided for shifting the point of engagement of the connection between the said key and the rock-shaft from one side to the other of the axis thereof by the same operation which shifts the point of engagement of the plunger d .

As herein shown, the connecting device between the key and rock-shaft is composed of two rods e^3 e^4 , extending upward to the rock-shaft b and adapted to engage, respectively, with the upper surface of the arms b^3 and b^4 thereof, the said rods being movable to and from the axis of the shaft b in guide-slots b^{32} and b^{42} , through which they extend, and being provided with heads e^{30} and e^{40} , adapted to engage with seats b^{31} and b^{41} on said arms at the ends of the said slots. To shift the said rods toward and from the center, the shifting device is provided with engaging projections, herein shown as fingers at the end of a plate f , secured, as by a screw f^2 , to the end of the plunger d , the said plate f being adapted by its movement in one direction to engage the rod e^4 , as shown in Fig. 1, and by its movement in the other direction to engage the rod e^3 , as shown in Fig. 2.

Referring to Fig. 1, the plate f is in engagement with the rod e^4 , the said rod being held thereby at the end of the slot b^{42} , while the arm b^4 of the "rocker," as it may be called,

is tipped by the plunger d , so that its surface is in engagement with the head e^{40} , whereby the depression of the shift-key, operating through the said rod e^4 , will rock the shaft b against the stress of the spring d^4 , temporarily shifting the carriage, which will be restored to its normal position—i. e., the position determined by the position of the guide-stem d^2 —by the stress of the spring d^4 when the key is released.

To shift the carriage so that it will remain in the reverse position, the handle d^{20} is manipulated, rocking the guide-stem on its pivot d^3 and shifting the point of engagement of the plunger d to the surface of the arm b^3 , so that the rocker is at once moved to the position shown in Fig. 2, the plate f at the same time engaging the rod e^3 and throwing it outward to the end of the arm b^3 and bringing the head e^{30} of said rod into engagement with the seat b^{31} at the end of said arm b^3 . The same movement shifts the rod e^4 toward the axis of the shaft b , the projection e^{40} being thrown out of engagement with the arm b^4 , so that a downward movement of the shift-key will be transmitted solely through the rod e^3 to produce the temporary shifting of the carriage the same as before, but in the reverse direction.

As shown in Figs. 3 and 8, the rock-shaft b is supported in downwardly-extending lugs or projections b^6 , which are forked at their lower ends to form downwardly-opening sockets b^{77} , into which the rock-shaft b is inserted laterally, there being no fastening device required at the end nearest the shifting device, since it is obvious that the upward pressure of the spring d^4 tends to hold the said rock-shaft in position in its socket. At the opposite end a retaining device, consisting, as shown, of a screw b^8 , is extended across the slot in the lug b^6 , adapted to support the said rod, which is shown as provided with an annular channel b^9 , fitting the surface of the screw b^8 , to prevent the longitudinal displacement of the shaft. By this construction the shaft may be very readily removed, since it is only necessary to take out the screw b^8 to release one end of the said shaft, the other end being released by merely depressing the spring d^4 .

As has been stated, the usual or normal position of the carriage in the operation of the machine is its forward position with relation to the supporting-frame B, in which position it is held by the shift-rod a through the agency of the spring-plunger d . To retain the carriage in this position when the carriage-frame is lifted and prevent it from dropping back with a slam, a locking device of novel construction and arrangement is herein shown, the said locking device consisting of the hooked lever g , pivoted at g^2 to a lug g^3 , extending inward from the front member of the frame B. The said lever g normally stands in a position to engage and hold the carriage in its normal position with relation to the carriage-frame, the hooked

end thereof being shown as engaging the cross-rod C^5 of the carriage, which supports the paper-pulleys C^6 , the said rod being provided with a squared block C^7 to form a good engaging surface or shoulder for the hook. In order to shift the carriage, therefore, it is necessary to disengage the said hooked lever when the shift-key is depressed or the permanent shifting device operated, and to this end the said lever g is provided with a projection g^{30} at the opposite side of its fulcrum g^2 , adapted to be engaged by the shift-rod a as the latter is moved to shift the carriage to the rear, the movement of the shift-rod thus rocking the lever g and lifting the hook to disengage it from the carriage.

When the shift-key is maintained in its rearward position by the shifting device, the platen-frame is in its corresponding rearward position, while the locking device stands tipped up out of its engaging position. To prevent the locking device from falling by gravity when the carriage is lifted, the lever g is shown as provided with a friction-washer g^4 , Figs. 6 and 7, the function of which is to yieldingly hold the locking-lever g against movement on its pivot except when positively actuated by the carriage-shifting rod. The said washer is shown as a disk of metal cut at g^5 to form wings, which are slightly bent at g^6 , so as to bear against the side of the lever g when interposed between the same and its supporting-lug, as shown. When, therefore, the shift-rod is back and the carriage lifted, the lever g will remain in the proper position to engage the shift-rod when the carriage is restored to its normal position. To insure proper engagement, however, regardless of the position of the locking device, the said projection g^{30} is shown as forked, so as to engage the said shift-rod a on both sides thereof, and is provided with a flaring mouth, moreover, as shown, so that the engaging portion of the lever and the shift-rod will come together with a latching action. By this construction of the locking device the hook is normally in its engaging position when the carriage is forward, so that the locking of the carriage in its normal position is assured.

I claim—

1. In a type-writer, the combination with a movable platen-frame, of a shifting-rod adapted to engage the same, a rock-shaft upon which said shifting-rod is supported having arms provided with engaging portions on opposite sides of its axis, and a spring-pressed plunger adapted to engage the under side of said arms and movable along said engaging portions from one side to the other of the axis of the rock-shaft, substantially as described.

2. In a type-writer, the combination with a movable platen-frame, of a shifting-rod adapted to engage the same, a rock-shaft upon which said shifting-rod is supported having arms provided with engaging portions on opposite sides of its axis, a spring-pressed plunger adapted to engage the under side of said

arms and movable along said engaging portions from one side to the other of the axis of the rock-shaft, a shift-key cooperating with said rock-shaft, and means for shifting its point of engagement from one side to the other of the axis of the rock-shaft to correspond with the position of the spring-pressed plunger, substantially as described.

3. The combination with the movable platen-frame, of the shifting-rod therefor, a rock-shaft to which said shifting-rod is connected, said rock-shaft having arms transverse to its axis, a spring-actuated plunger adapted to engage the under surface of said arms, means for shifting said plunger thereon from one side to the other of the axis of the rock-shaft, a shift-key having two engaging rods adapted to engage respectively with the upper surface of said arms, and an engaging portion of said spring-plunger adapted to engage and move said rods with relation to the axis of the rock-shaft during the movement of said plunger, substantially as described.

4. The combination with the movable platen-frame, of the shifting-rod therefor, a rock-shaft to which said shifting-rod is connected, said rock-shaft having arms transverse to its axis, said arms being provided with longitudinal slots, a spring-actuated plunger adapted to engage the under surface of said arms, means for shifting said plunger thereon from one side to the other of the axis of the rock-shaft, a shifting-key having two engaging rods, extending upward through the slots in said arms and provided with heads or enlargements adapted to engage the upper surfaces of said arms, and means for laterally shifting said rods, whereby one is moved toward the axis of the rock-shaft and the other away from the same, substantially as described.

5. In a type-writer, the combination with a movable platen-frame, of a spring-actuated rock-shaft adapted to control the position thereof, arms connected with said rock-shaft extending laterally therefrom at each side of its axis, a shifting-key provided with two connecting members adapted to engage said arms respectively, and means for laterally moving said connecting members whereby one is moved from a point near the end of the cor-

responding arm toward the axis of the rock-shaft, and the other is moved away from the said axis, toward the end of its corresponding arm, substantially as described.

6. In a type-writer, the combination with a movable platen-frame, of a rock-shaft adapted to control the position thereof, a spring-actuated controlling device engaging said rock-shaft from below, forked supports for said rock-shaft depending from the frame, and a pin extending across the open end of one of said forked supports below said shaft, the other end of the shaft being supported by said spring-actuated controlling device, substantially as described.

7. In a type-writer, the combination with a movable platen-frame, and supporting-carriage therefor pivotally connected to the frame of the type-writer, a hook pivotally supported upon said carriage, and normally in engagement with said platen-frame and a portion of said hook adapted to be engaged by the shift-rod of the machine to throw the said hook out of engagement with the platen-frame when the latter is to be shifted rearward on the carriage and a hook-retaining device, such as the friction-washer g^4 , to prevent the hook from falling by gravity when the carriage is lifted, substantially as described.

8. In a type-writer, the combination with a movable platen-frame, and supporting-carriage therefor pivotally connected to the frame of the type-writer, a hook pivotally supported upon said carriage, and normally in engagement with said platen-frame, a portion of said hook adapted to be engaged by the shift-rod of the machine, a friction device for retaining the hook against falling by gravity, and a yielding holding device for preventing the hook from changing its position when disengaged from the shift-rod, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN B. PRICE.

Witnesses:

JOS. P. LIVERMORE,
JAS. J. MALONEY.