

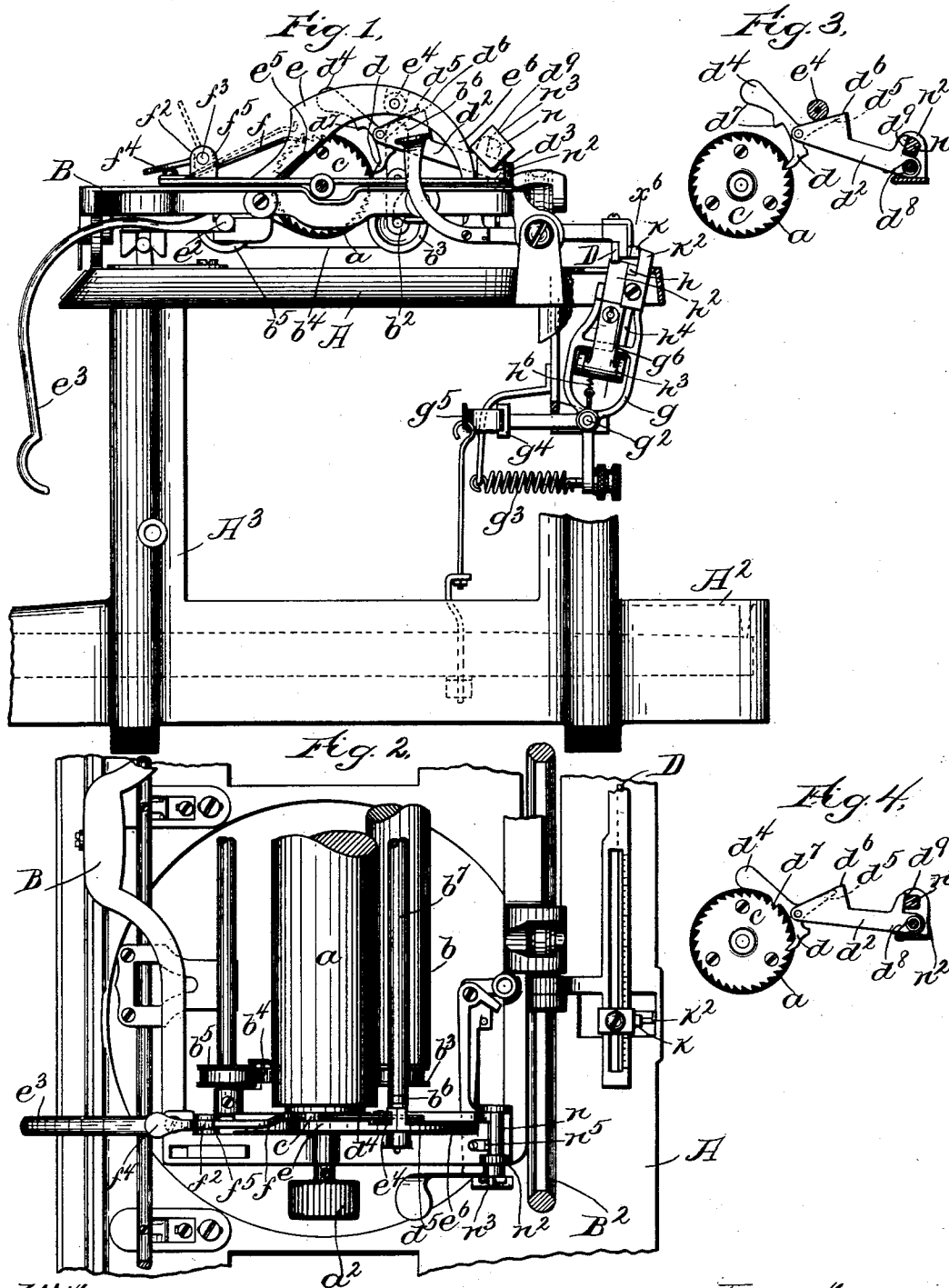
(No Model.)

2 Sheets—Sheet 1.

J. B. PRICE.
TYPE WRITING MACHINE.

No. 593,432.

Patented Nov. 9, 1897.



Witnesses
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Fig. 5.

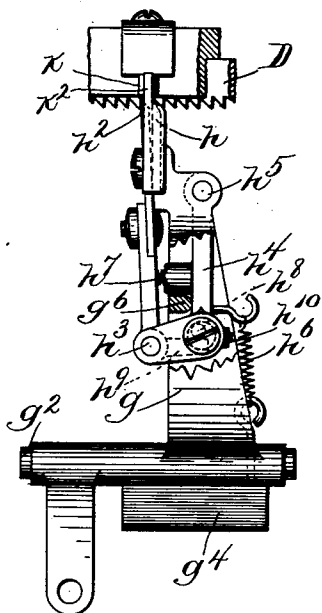


Fig. 6.

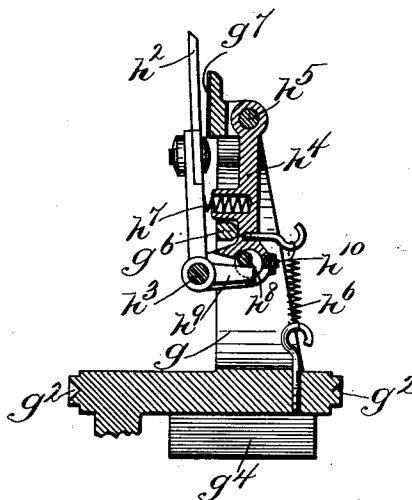
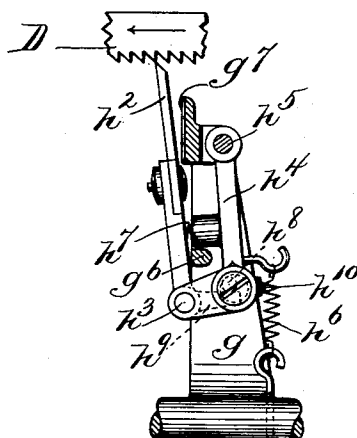


Fig. 7.



Witnesses

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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. 593,432, dated November 9, 1897.

Application filed November 23, 1896. Serial No. 613,052. (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 Type-Writers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is embodied in a type-writing machine and is applicable to machines of the well-known Remington type.

The invention relates especially to the mechanism for feeding the paper both in the letter-space feed and in the line-space feed; and it consists in novel details of construction whereby greater convenience of operation is attained.

The invention further relates to details of this part of the mechanism, which will be described, by which the necessary adjustments of the machine for perfect writing are more readily attained than heretofore.

Figure 1 is a side elevation of a sufficient portion of a type-writing machine to illustrate this invention; Fig. 2, a plan view thereof; Figs. 3 and 4, details showing a portion of the platen-feed mechanism in side elevation in different positions; Fig. 5, a rear elevation of the letter-space-feed mechanism on a larger scale; Fig. 6, a vertical section thereof on the plane indicated at x^6 , Fig. 1; and Fig. 7, a rear sectional elevation of said letter-space-feed mechanism with portions thereof in a different position from that shown in Fig. 5.

The main framework of the machine, comprising the top plate A, supported from the base A² by standards or uprights A³, and the keys and type-bars may be of any suitable or usual construction, being herein shown as substantially the same as in the well-known Remington machine.

The paper to be printed upon is supported upon the cylindrical platen or paper-roll a, supported in suitable bearings on the carriage B, which advances in the direction of the axis of the roll as the writing progresses, said roll being turned in its bearings to advance the paper when a new line of writing is to be made. The paper is held to the surface of the platen a by a paper-feed roll b, mounted on a shaft supported in bearings b¹, pivotally

hung upon the frame in which the platen is journaled, said roll-shaft being provided at its ends with pulleys b³, over which are passed elastic belts b⁴ to pulleys b⁵ at the front of the platen a, all substantially as in the well-known Remington machine.

In order to provide for the release of the paper from the hold of the paper-feed roll b, as is desirable when adjusting the position of the paper with relation to the platen, the bearing-hangers b² of said feed-roll shaft are extended above their pivots in the form of arms b⁶, connected by a cross-bar b⁷, which stands above and at the rear of the platen and may be readily taken hold of and pulled forward by the operator when it is desired to release the paper.

In order to rotate the platen when desired to feed the paper forward for a new line, said platen is provided at its end with the usual ratchet c, the teeth of which are properly spaced with relation to the movement of the paper desired between the successive lines of writing, and coöperating with the said ratchet is a pawl d, pivoted in an arm or pawl-carrier d², itself pivoted on the platen-carrier at d³ at the rear of the platen. The said pawl is normally acted upon by a weight or spring, herein shown as a weight d⁴ made integral therewith, which retains it out of engagement with the ratchet c, as shown in Fig. 1, thus leaving the platen free to be turned in either direction, except as it is restrained by the yielding latch f, which bears against the teeth of the ratchet and stops the rotation of the platen at points corresponding exactly to the spacing of the ratchet-teeth in the usual manner.

The feed-pawl d and its carrier d² are actuated to rotate the platen and feed the paper by a lever e, pivoted at e² on the platen-carrier and provided with a handle e³, conveniently located at the front of the machine to be grasped by the operator when it is desired to return the platen-carriage and feed the paper for the beginning of a new line of writing. Said lever e is provided with a projection e⁴, preferably a roll, which engages with a finger d⁵ on the pawl d and turns the same against the action of its weight d⁴ on its pivot in the pawl-carrier d² until the point

or tooth of the pawl comes into engagement with the teeth of the ratchet c then presented to it, after which the projection e^4 engages with a seat d^6 on the pawl-carrier (see Fig. 3) and moves the same, together with the pawl, downward, thereby rotating the ratchet and platen and feeding the paper to the position desired for the next line of writing, the said feed movement being arrested by a projection on the pawl-carrier or pawl, herein shown as a projection d^7 on the pawl, bringing up on the ratchet, as shown in Fig. 4.

It is not essential that the actuating-lever should engage directly with the independently-pivoted pawl-carrier, but such construction relieves the pawl and its pivot of considerable strain.

In order to vary the amount of feed of the paper and the consequent spacing between the lines of writing, so that the latter may be as close as is legible, or double or triple such close spacing, a variable stop is provided for limiting the return movement of the pawl-carrier d^2 , which is lifted by a spring d^8 when the handle e^3 of the feed-lever is released, said feed-lever itself being lifted by a spring e^5 . Said variable stop consists of a cam n , supported in bearings n^2 on the platen-carrier and provided with a handle or enlarged head n^3 , by which it may be turned to present one or another of its cam-faces to a shoulder d^9 on the pawl-carrier, said cam-faces being properly located to limit the return movement of the pawl-carrier, so that in its next descent it will turn the ratchet one, two, or three teeth, as may be desired.

A spring n^4 retains the line-space-regulating cam in whatever position it may be turned to by the operator.

It is useful at times to lock the platen against rotation, so that the paper may be moved with relation thereto in order to accurately position the surface of the paper with relation to the point of imprint, and for this purpose the said line-space regulator n has a portion of its periphery of such size that by its engagement with the shoulder d^9 it depresses the pawl-carrier d^2 to its lowest position, where the pawl is locked against the teeth of the ratchet, as shown in Fig. 4, thus preventing rotation of the platen in either direction and enabling the paper to be readily adjusted with relation thereto, the pressure of the paper-feed roll at this time being relaxed, if desired, by properly manipulating the handle b^7 , before mentioned, so that in case several layers of paper and transfer-paper are used there is no danger of rubbing or smutching the surface of the paper. It is sometimes desirable, furthermore, to provide for line-spacing which is not an exact multiple of the space corresponding to the distance between two consecutive teeth of the ratchet c , and to accomplish this result the yielding platen-holding latch f , before referred to, is controlled by a holding device, shown as a cam f^2 , pivoted at f^3 and provided with a handle

f^4 , said cam having a flattened or reduced portion f^5 , which when brought opposite the spring-shank of the latch f by raising the handle f^4 permits the spring-latch to rise from the teeth of the ratchet, as shown in dotted lines, Fig. 1, the spring-shank of said latch being so made that it would normally retain the latch out of engagement with the ratchet, but is pressed into position to engage the ratchet by the portion of the cam f^2 of full diameter when the said cam is turned to the proper position by its handle f^4 . The platen a is provided with a handle a^2 to facilitate the rotation thereof when it is to be turned otherwise than by the feed-pawl d .

The carriage B for the platen is pivotally supported on a guide-rod B^2 at the rear of the top plate A of the machine and is actuated and controlled in its feed movement by a spring and a feed-rack D, independently pivoted on said guide-rod B^2 , these parts being substantially the same as in the well-known Remington machine, and therefore requiring no detailed description or illustration.

The platen-feed lever e is provided with an extension e^6 , which lifts the feed-rack from the feed-pawls in the return movement of the carriage, and the said feed-rack is reengaged with the feed-pawls at the end of the return movement in substantially the same way as in the Remington machine, this part of the mechanism constituting no part of the present invention.

The feed of the paper-carriage and platen thereon is controlled by feed-dogs coöperating with the feed-rack D in the usual manner, said dogs and their actuating means, however, being of novel construction. The said feed-dogs are supported upon a rocking frame g , pivoted at g^2 on the main frame of the machine and acted upon by a spring g^3 , tending to turn the said frame in one direction, said frame being provided with a cross-bar or yoke g^4 , connected at its ends with a transverse bar g^5 under the entire bank of key-levers, including the space-key of the machine, so that said frame is rocked against the stress of its spring g^3 at the depression of each key in the usual manner. Said rocking frame has a dog h fixed thereon, which in the movement of the frame produced at the depression of the key falls into engagement with the tooth of the feed-rack D then opposite to it, and it also carries a second relatively-movable dog h^2 , which in accordance with the present invention is pivoted at its lower end h^3 upon a hanger h^4 , itself pivoted at h^5 on the rocker g and acted upon by a spring h^6 , tending to move the said hanger h^4 on its pivot h^5 until arrested by a stop (shown as a cross-bar g^6) on the rocker g , in which position the said hanger remains during the normal feeding operation of the paper-carriage.

The spacing-dog h^2 turns on its pivot h^3 under the action of a light spring h^7 , carrying its upper end in a direction opposite to the

feed movement of the paper-carriage, the said spacing movement of the dog being limited by a stop h^8 , engaging with an arm h^9 of said dog. (See Fig. 6.) The said stop consists of a pin or rod fitted in a socket in the hanger h^4 and having a reduced portion eccentric to its bearing in said socket, so that by rotating it in the socket the range of movement of the dog h^2 controlled by it may be minutely adjusted as is required, it being necessary that the movement of the upper end of the dog with relation to the fixed dog h should be approximately equal to or a trifle less than the distance between two consecutive teeth of the feed-rack D. When turned to the proper position to secure the desired adjustment of the movement of the dog h^2 , the said adjusting device h^8 is secured against any further movement, as by a set-screw h^{10} . The backward movement of the dog h^2 on its pivot h^3 which takes place under the stress of the carriage-feeding spring is limited by the engagement of said dog with a portion g^7 of the rocker g by the side of the fixed dog h in the usual manner, the edges of the two dogs being then in alinement with one another.

The operation of the dogs in permitting the rack to escape tooth by tooth as the rocker g is vibrated to and fro is substantially the same as in the well-known Remington machines, and therefore needs no further description.

When the platen-carriage is moved backward, as is sometimes done, without lifting the feed-rack from the feed-dogs, the said rack is at such time in engagement with the movable dog h^2 , and instead of jumping from tooth to tooth over the end of said dog, as is the case in previous constructions except when said dog is jointed to prevent such action, the rack in the above-described construction turns the hanger h^4 on its pivot h^3 against the stress of the spring h^6 , thus permitting the easy return movement of the carriage without jumping the rack, as shown in Fig. 7.

In order to prevent the striking of successive imprints at the same point on the paper when the carriage has reached the limit of its movement, the feed-rack is provided with a stop projection k , shown as connected with the usual adjustable stop which operates the alarm before the end of the line is reached and finally stops the feed movement of the carriage, and the rocker g for the feed-dog is provided with a cooperating projection k^2 , which is engaged by the stop k at the end of the effective feed movement of the carriage and locks the rocker, so that it cannot vibrate, and consequently, through the connection of the rocker to the keys, prevents depression of the keys, so that the type cannot be caused to strike the paper, and the operator will recognize by the touch the fact that the carriage has reached its limit of movement.

I claim—

1. The combination of a cylindrical platen provided with a ratchet, of a pawl-carrier piv-

oted in the rear of said platen, a pawl pivoted in the free end of said pawl-carrier and normally disengaged from the ratchet, and the actuating-lever pivoted in front of the platen and having an arm extending over and into operative position with relation to the pawl, and adapted to engage the said pawl and depress it into engagement with the ratchet, substantially as described.

2. The combination of a cylindrical platen provided with a ratchet, of a pawl-carrier pivoted in the rear of said platen, a pawl pivoted in the free end of said pawl-carrier and normally disengaged from the ratchet, and the actuating-lever pivoted in front of the platen and having an arm extending over and into operative position with relation to the pawl, the said pawl being provided with a finger and said pawl-carrier with a seat, both of which are adapted to be engaged by the said actuating-lever to cause the pawl to engage the ratchet; substantially as described.

3. The combination of a cylindrical platen provided with a ratchet, of a pawl-carrier pivoted in the rear of said platen, a pawl pivoted in the free end of said pawl-carrier and normally disengaged from the ratchet, and the actuating-lever pivoted in front of the platen and having an arm extending over and into operative position with relation to the pawl, said pawl being provided with a finger and said pawl-carrier with a seat, and the actuating-lever with a projection e^4 to engage the said finger and seat, and the pawl-carrier and pawl being further provided with a stop adapted to engage the ratchet and limit the rotation thereof, substantially as described.

4. The combination of a cylindrical platen provided with a ratchet, of a pawl-carrier pivoted in the rear of said platen, a pawl pivoted in the free end of said pawl-carrier and normally disengaged from the ratchet, and the actuating-lever pivoted in front of the platen and having an arm extending over and into operative position with relation to the pawl, and a variable stop, as n , cooperating with a shoulder or the pawl-carrier to determine the range of movement of said pawl-carrier under the operation of the actuating-lever, substantially as described.

5. The cylindrical platen provided with the ratchet, combined with a pawl-carrier and pawl pivoted therein, normally yieldingly held out of engagement with said ratchet, a stop limiting by its engagement with said ratchet the rotation thereof produced by said pawl-carrier and pawl, and a lock whereby said pawl-carrier may be retained with its pawl and stop locked in engagement with the teeth of the ratchet, substantially as described.

6. The combination with the cylindrical platen, with a paper-roll mounted on a shaft provided with pulleys and elastic bands extending from said pulleys around a portion of the periphery of the platen, with pivotally-supported bearings for said paper-roll shaft, one at each end thereof, and arms extending

from said bearings, and a cross-bar connected with said arms whereby said feed-roll may be moved against the stress of the elastic bands out of contact with said platen, substantially as and for the purpose described.

5 7. The combination of the ratchet-toothed feed-rack, with a vibrating dog-carrier having a dog fixed thereon, a hanger pivotally connected with said dog-carrier, and a dog
10 pivoted on said hanger, substantially as described.

8. The combination of the ratchet-toothed feed-rack, with a vibrating dog-carrier having a dog fixed thereon, a hanger pivotally
15 connected with said dog-carrier, and a dog pivoted on said hanger, and an adjustable stop for limiting the movement of said dog with relation to said hanger, substantially as described.

20 9. The combination of the ratchet-toothed feed-rack, with a vibrating dog-carrier having a dog fixed thereon, a hanger pivotally connected with said dog-carrier, a dog pivoted on said hanger, and an adjustable stop
25 for said pivoted dog composed of a pin mounted to rotate in a socket in the dog-support, said pin having an eccentric portion engaging with said dog and constituting a stop

therefor, and means for fastening said pin against rotation when adjusted, substantially as described. 30

10. The combination of the feed-rack with a vibrating dog-carrier and a dog fixed thereon, a hanger pivotally connected with the said dog-carrier, and a stop limiting the movement
35 thereof in one direction, and a spring to hold said hanger against said stop, and a dog pivoted on the said hanger and movable with relation thereto, said dog and hanger being also movable on the pivot of the latter with
40 relation to the dog-carrier, substantially as described.

11. The combination with the cylindrical platen provided with a ratchet, of a yielding platen-holding latch, as f , cooperating with
45 said ratchet, and a latch-operating device comprising a cam f^2 having a handle f^4 , substantially as and for the purpose described.

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

JOHN B. PRICE.

Witnesses:

JOS. P. LIVERMORE,
NANCY P. FORD.