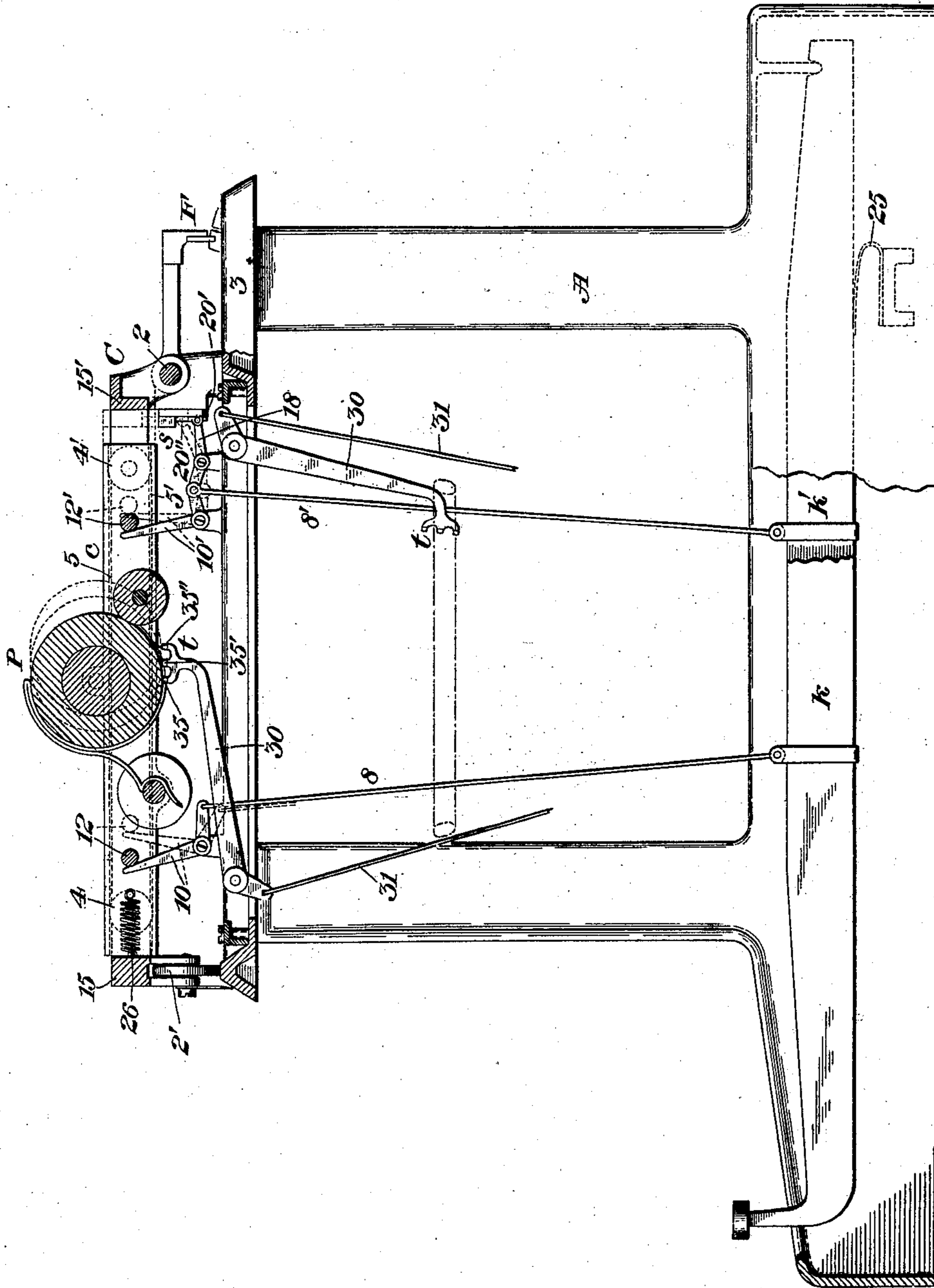


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C. S. CHAMPION.  
KEY OPERATED MACHINE.  
(Application filed Dec. 31, 1897.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## KEY-OPERATED MACHINE.

SPECIFICATION forming part of Letters Patent No. 693,373, dated February 18, 1902.

Application filed December 31, 1897. Serial No. 664,814. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES S. CHAMPION, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Key-Operated Machines, of which the following is a specification.

This invention relates to improvements in key-operated machines; and it has for its main object the provision of shifting mechanism for moving the platen of a type-writing or analogous machine to any one of three different positions transversely of the direction of travel of the carriage.

As is well known in the art, type-writers of the Remington and other similar types are so constructed that the platen thereof around which the paper is carried is shiftable from a normal position, which is usually the position of the platen for small letters of the alphabet, to another position transversely of the printing-line, this latter position corresponding to the upper-case position for printing capital letters and similar characters.

In the machine forming the subject-matter of this invention my object is to furnish a machine of this type in which the platen may be moved from any one to another of three different positions transversely of the printing-line, these positions corresponding, respectively, to the lower-case and upper-case positions of the ordinary single-shift type-writer, while the third position is an extra one for miscellaneous characters of the keyboard of the machine. In constructing a machine in this manner it will be apparent that as the platen has three different positions, in any one of which characters may be imprinted on a moving sheet of paper or similar material, the types or type-bars by means of which the characters are formed should each have thereon three characters, one of which will be ordinarily the lower-case character or small letter of the alphabet, another of which will be the corresponding upper-case or capital letter, while the third will be some predetermined miscellaneous character or device. The several positions of the platen will be such that at the printing moment the proper one of the three characters of the type struck

will be brought opposite the printing-line and will operate to print a letter upon the traveling sheet. Obviously in a machine of this type, which I term a "three-case" machine, many of the parts found in the usual two-case machine will be dispensed with and the size and weight of the apparatus as a whole very materially reduced, as well as the cost thereof.

The principal feature of this invention is the employment, in connection with some suitable platen mounted for traveling movement and also capable of shifting transversely of its line of travel, of shifting means for moving the platen to any one of three transverse positions, one of which will be a normal position, to which ordinarily the platen will be returned after it has been shifted, while one of the other positions will define the extreme movement of the platen in the opposite direction to that in which it lies normally, the third position being preferably an intermediate one, ordinarily half-way between the other two or extreme positions.

As I consider it essential in a machine of this type to control with absolute precision the shifting or transverse movements of the platen to prevent misalignment of the characters printed on the moving sheet, I deem it advisable to employ some means shiftable into and out of the path of movement of the carrier on which the platen is mounted for stopping positively the movement of such carrier, and hence while I have shown herein two stops, preferably fixed, for limiting the extreme movements of the platen I have also illustrated in connection therewith a third stop shiftable into and out of the path of movement of the platen-carrier in such a manner as to form a positive abutment, against which the platen-carrier will be stopped directly and held positively whenever such shiftable stop is brought into action to define the position of the platen.

In the preferred construction, which is that illustrated in the drawing thereof, the normal position of the platen will be forward or toward the front of the type-writer or analogous machine, and the shifting means, whereby the position of the platen will be changed as desired, will embody two separately-operable shifting devices, one of which will include an

actuating member having a greater range of movement than the actuating member of the other shifting device. Ordinarily, of course, one shifting device will move the platen-carrier twice as far as the other one, and in all cases I prefer to employ in connection with the shifting means suitable retracting means for returning the platen-carrier, and hence the platen, to the normal position.

In the drawing accompanying and forming part of this specification I have illustrated in sectional end elevation so much of a type-writing machine embodying my present invention as is deemed necessary for a proper illustration of the novel features.

A designates in a general way the framework of a type-writing machine, which framework may be of any suitable construction, but for convenience of illustration is shown as a Remington frame, the lower part or base of which is hollow and will carry the key-levers, while on the top plate of the machine, above the mouth of the basket, a suitable carriage (designated in a general way by C) will be supported for traveling movement. It will be understood that this carriage will derive its traveling movement from a spring or similar source of power (not shown) and that each intermittent movement of the carriage as it advances will be controlled by the ordinary pawl-and-rack feed device, (indicated at F.)

The carriage C will be guided in its movements by the usual carriage-rod, and this carriage-rod or back rod is designated herein by 2. The forward side of the carriage will have the usual antifriction-roller 2', which will travel on the forward side of the top plate 3.

In machines of the two-case type hereinbefore referred to it is customary to support the platen on a carrier mounted on the carriage for shifting movement transversely of the line of travel of such carriage, and this feature is retained herein. Any suitable platen may be employed—such, for example, as that indicated by P—and this platen will be mounted substantially in the usual manner, so as to rotate intermittently on a carrier, such as c.

In the construction illustrated herein the platen-carrier is supported and guided at both of its ends by the usual antifriction-rolls, such as 4 and 4', which may be guided between suitable flanges, such as 5 and 5'. It is immaterial which of the coöperating parts is supported by the carriage and which by the platen-carrier, so long as the antifriction-rolls are mounted on one and the flanges or similar members on the other.

For the purpose of controlling the movements of the platen-carrier, and hence of the platen, I have illustrated herein shifting means embodying a pair of key-operated shifting-levers, one of which will control one of the movements of the platen and the other of which will control another movement. In this case the key-lever or shifting-lever k is intended to control the shifting of the platen-carrier from its normal to its opposite ex-

treme position, while the other shifting-lever k' will control the shifting of said platen-carrier to a position between the two extreme limits of movement. In this case the connections from each key-lever to the platen-carrier are substantially the same. From the lever k a connecting-rod 8 passes to the short arm of the angle-lever 10, supported on the framework in a suitable position, while from the key-lever k' a similar connecting-rod 8' extends to a corresponding angle-lever, such as 10', also mounted in a suitable position on the upper part of the framework and in the rear of the machine in the construction shown. I do not, of course, limit myself to the exact connections illustrated herein, but consider as within the scope of my invention any equivalents for the features just described. It should be noted, however, that in the construction illustrated the movements of the angle-levers 10 and 10' are not the same, the upper end of the long arm of the angle-lever 10 having in this case a movement twice that of the corresponding member of the angle-lever 10'.

Each of the angle-levers just referred to co-operates with a suitable member of the platen-carrier c, and in this instance I have illustrated a pair of cylindrical rods, such as 12 and 12', with the former of which the angle-lever 10 coacts, while the latter is intended to be engaged by the angle-lever 10'. If now the shifting-lever k is depressed, the platen-carrier c will be shifted to the rear a distance indicated by the positions of the angle-lever 10 in full and dotted lines, whereas the movement of the platen-carrier when the shifting-lever k' is operated is indicated in full and dotted lines at 10' and will be but half of the first-mentioned movement.

Obviously some suitable stops, such as the fixed stops 15 and 15', may be employed for determining the two extreme positions of the platen-carrier; but in connection therewith I employ another stop shiftable for the purpose of locating the platen-carrier directly and positively in its intermediate position. This shiftable stop may be of any suitable construction and may be operated in any desired manner, so long as it is movable into and out of the path of a member controlling the shifting or transverse movement of the platen; but in the construction shown I have illustrated a vertically-movable stop (designated in a general way by s) shiftable into and out of the path of transverse movement of the rear side of the platen-carrier c. This shiftable stop will preferably be connected with and operated by one of the shifting-levers, in this case the lever k', it being connected in the construction shown to a lever 18, properly supported on the framework, which lever is connected at one end with the stop s by a pin-and-slot connection and at the other end with the angle-lever 10' or the rod 8', as the case may be, the joint being sufficiently loose to prevent binding of the parts.

In the present case the stop *s* is supported in a vertical guideway 20' in a projecting portion 20 of the main framework, the lowermost position of said stop being determined by the stop-face 20". Obviously the upper face of the stop *s* should in the normal position lie below the platen-carrier *c* and be out of the way; but when shifted it will move upward into the path of said platen-carrier and will stop or interrupt the movement of the latter by the shifting means at the proper point. This stop *s* works in contact with a stop in the same plane as the forward face of the stop 15'.

For the purpose of retracting the shifting members or levers *k* and *k'* to their normal positions I may make use of suitable springs, such as the spring 25, of well-known construction. Moreover, some suitable spring will be employed for returning the platen-carrier to its normal position, in this case toward the forward side of the machine. A helical or coil spring 26 is illustrated for this purpose and connects the slidable platen-carrier with the forward side of the carriage.

In connection with a machine having a platen-carrier constructed in the manner just described it will be obvious that suitable types or type-bars should be employed, each having three type characters upon the working face thereof. Such types are illustrated herein at the free ends of type-arms, such as 30, of the ordinary construction, pivoted in the usual manner in the ring of the type-basket and operated by suitable connecting-rods, such as 31, which, it should be understood, are controlled by the proper key-levers. (Not shown.)

The types are indicated by *t*, and the faces of each are designated, respectively, by 35, 35', and 35". Obviously the type character or face 35 will be brought into operation when the platen and the other parts of the mechanism are in the positions shown in full lines in the drawing, while the face 35' will be used when the platen and coacting parts are in the intermediate position, the type-face 35" being employed when the platen and the other parts are in the extreme right-hand position.

The manner in which a machine of this type is used is substantially similar to the mode of operation of a Remington or other two-case machine, except that instead of having but one shifting lever or key to control the movement of the platen there are two keys controlling two different movements of the platen, one of which will preferably be double the movement controlled by the other shifting-lever. Of course only one shifting-lever should be operated at one time, and, as is obvious, the platen and its carrier will return to the normal or left-hand position in the construction shown when a previously-operated shifting-lever is released.

Having described my invention, I claim—

1. In a key-operated machine, the combination, with a traveling platen shiftable trans-

versely to its direction of travel, and with means for imparting a traveling movement to said platen; of separably-operable shifting means attached to separate moving parts for moving said platen transversely to its line of travel different distances in the same direction, and stops controlling such positions of the platen.

2. In a key-operated machine, the combination, with a traveling platen shiftable transversely to its direction of travel, and with means for imparting a traveling movement to said platen, of separably-operable shifting means attached to separate moving parts for moving said platen transversely to its line of travel from a normal position different distances in the same direction, and stops controlling such positions of the platen.

3. In a key-operated machine, the combination, with a traveling platen shiftable transversely to its direction of travel, and with means for imparting a traveling movement to said platen, of separably-operable shifting means attached to separate moving parts for moving said carriage transversely to its line of travel from a normal position different distances in the same direction; stops controlling such positions of the platen; and retracting means for returning said platen from either of such other positions to its normal position.

4. In a key-operated machine, the combination, with a traveling platen shiftable transversely to its direction of travel, and with means for imparting a traveling movement to said platen, of separably-operable shifting means attached to separate moving parts for moving said platen transversely to its line of travel from a normal position different distances in the same direction; stops controlling such positions of the platen; and a retracting-spring for normally returning the platen to its first-mentioned position.

5. In a key-operated machine, the combination, with a traveling platen shiftable transversely to its direction of travel, and with means for imparting a traveling movement to said platen, of a pair of separately-operable shifting devices attached to separate moving parts for moving said platen transversely to its line of travel different distances in the same direction from a normal position thereof, and stops controlling such positions of the platen.

6. In a key-operated machine, the combination, with a traveling platen shiftable transversely to its direction of travel, and with means for imparting a traveling movement to said platen, of a pair of separately-operable key-actuated shifting devices attached to separate moving parts for moving said platen transversely to its line of travel different distances in the same direction from a normal position thereof, and stops controlling such positions of the platen.

7. In a key-operated machine, the combination, with a traveling platen shiftable trans-

versely to its direction of travel, and with means for imparting a traveling movement to said platen, of separately-operable key-actuated shifting-levers attached to separate moving parts for shifting said platen transversely to its line of travel different distances in the same direction from a normal position thereof, and stops controlling such positions of the platen.

8. In a key-operated machine, the combination, with a traveling carriage, and with means for imparting a traveling movement to said carriage, of a platen supported on said carriage and shiftable transversely thereof; separately-operable shifting means attached to separate moving parts for moving said platen transversely to the carriage different distances in the same direction; and stops controlling such positions of the platen.

9. In a key-operated machine, the combination, with a traveling carriage movable between two extreme positions and with means for imparting a traveling movement to said carriage, of a platen supported on said carriage and shiftable transversely thereof; separately-operable shifting means attached to separate moving parts for moving said platen transversely to the carriage at any point in the movement of the carriage and different distances in the same direction; and stops controlling such positions of the platen.

10. In a key-operated machine, the combination, with a traveling platen shiftable transversely to its direction of travel, and with means for imparting a traveling movement to said platen, of a key-controlled type having three type characters thereon disposed in a line transverse to the printing-line of the platen; separately-operable shifting means attached to separate moving parts for moving said platen transversely to its line of travel different distances in the same direction to bring the printing-line thereof opposite the corresponding character of the type; and stops controlling such positions of the carriage.

11. In a key-operated machine, the combination, with a traveling platen shiftable transversely to its direction of travel, and with means for imparting a traveling movement to said platen, of a pair of stops controlling two different transverse positions of said platen; a sliding stop movable into and out of action and controlling a third transverse position of the platen; and shifting means for moving said platen to any one of said three positions.

12. In a key-operated machine, the combination, with a traveling platen shiftable transversely to its direction of travel, and with means for imparting a traveling movement to said platen, of a pair of stops controlling two different transverse positions of said platen; a key-operated sliding stop movable into and out of action and controlling a third transverse position of the platen; and shifting

ing means for moving said platen to any one of said three positions.

13. In a key-operated machine, the combination, with a traveling platen shiftable transversely to its direction of travel, and with means for imparting a traveling movement to said platen, of a pair of stops controlling two different transverse positions of said platen; shifting means for moving said platen to any one of its different transverse positions; and a sliding stop controlled by said shifting means and movable into and out of action and controlling a third transverse position of the platen.

14. In a key-operated machine, the combination, with a traveling carriage, and with means for imparting a traveling movement to said carriage of a platen-carrier supported on said carriage and shiftable transversely thereof; a platen on said platen-carrier; a pair of stops controlling two different transverse positions of said platen-carrier; a sliding stop movable into and out of the path of the platen-carrier and controlling a third transverse position of the platen-carrier; and shifting means for moving said platen-carrier to any one of said three positions.

15. In a key-operated machine, the combination, with a traveling carriage, and with means for imparting a traveling movement to said carriage, of a platen-carrier supported on said carriage and shiftable transversely thereof; a platen on said platen-carrier; a pair of stops controlling two different transverse positions of said platen-carrier; a pair of separately-operable shifting devices for moving said platen-carrier to either one of two transverse positions thereof; and a shiftable stop controlled by one of said shifting devices and movable into and out of the path of the platen-carrier and controlling a third transverse position of said platen-carrier.

16. In a key-operated machine, the combination, with a carriage, of a platen-carrier supported on said carriage and shiftable transversely thereof; a platen on said platen-carrier; a pair of stops for limiting the extreme movements of the platen-carrier in opposite directions; a shiftable stop movable into and out of the path of the platen-carrier between one of said pairs of stops and the platen-carrier; and shifting means for actuating said shiftable stop.

17. In a key-operated machine, the combination, with a carriage, of a platen-carrier supported on said carriage and shiftable transversely thereof; a platen on said platen-carrier; a pair of stops for limiting the extreme transverse movements of the platen-carrier in opposite directions; a shiftable stop movable into and out of the path of the platen-carrier between one of said pair of stops and the platen-carrier; retracting means normally tending to return the platen-carrier into engagement with the other of said pair

of stops; and shifting means for actuating said shiftable stop.

18. In a key-operated machine, the combination, with a carriage, of a platen-carrier supported on said carriage and shiftable transversely thereof; a platen on said platen-carrier; a pair of stops for limiting the extreme movements of the platen-carrier in opposite directions; a reciprocatory stop movable into and out of the path of the platen-carrier between one of said pair of stops and the platen-carrier and of sufficient weight to return to its normal position after being actuated; and shifting means for actuating said reciprocatory stop.

19. In a key-operated machine, the combination,

with a carriage, of a platen-carrier supported on said carriage and shiftable transversely thereof; a platen on said platen-carrier; a pair of stops for limiting the extreme transverse movements of the platen-carrier in opposite directions; a vertically-reciprocatory stop in contact with one stop of said pair and movable into and out of the path of the platen-carrier between said last-mentioned stop and the platen-carrier; and shifting means for actuating said shiftable stop.

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