

(No Model.)

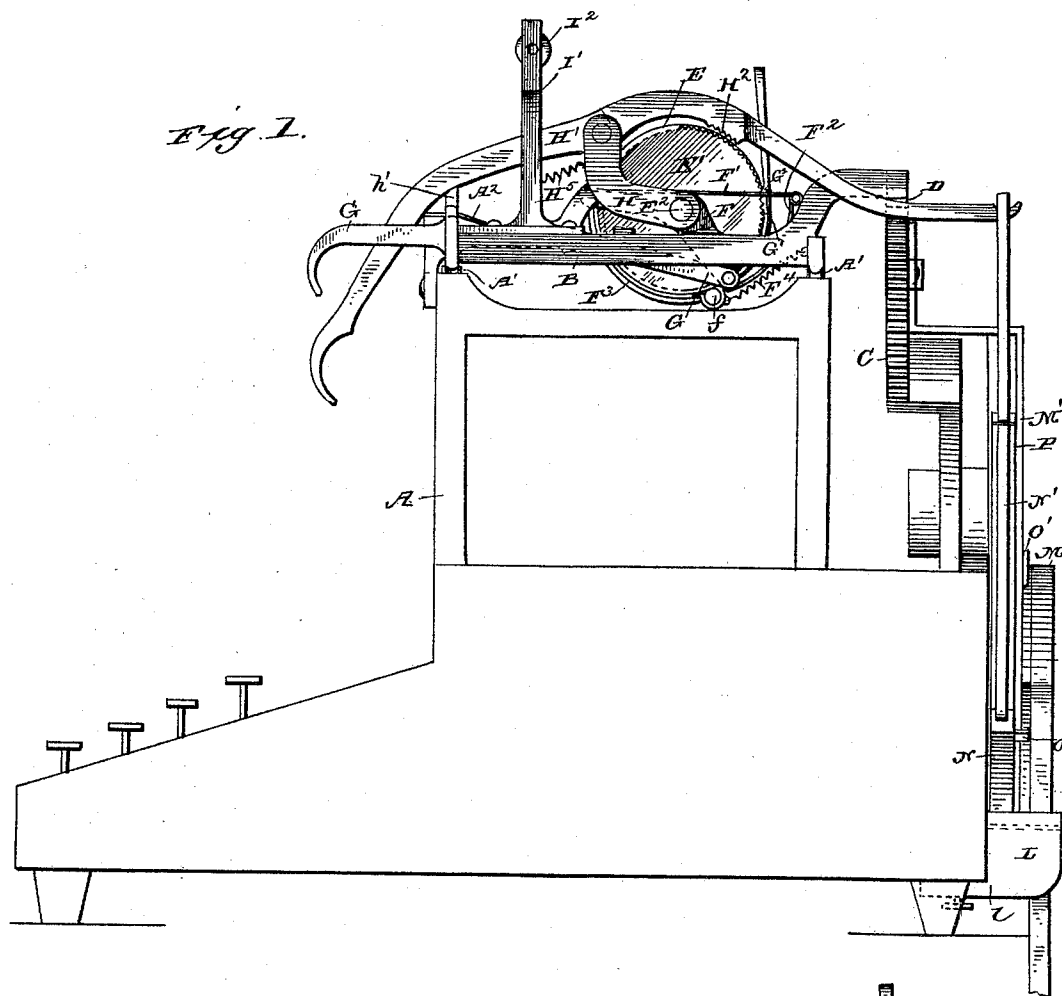
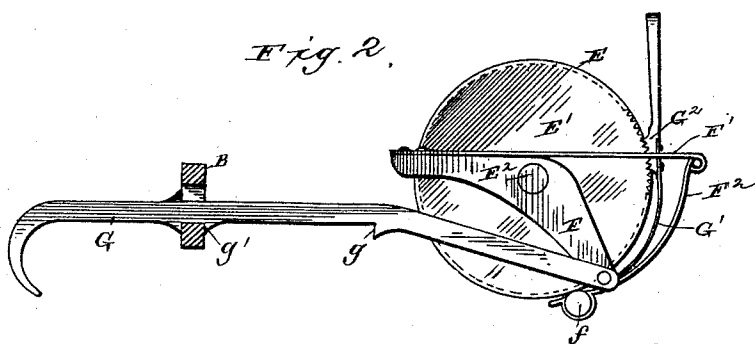
4 Sheets—Sheet 1.

J. F. FRANKEY.

CARRIAGE MECHANISM FOR TYPE WRITING MACHINES.

No. 458,566.

Patented Sept. 1, 1891.



Witnesses

E. D. Smith

Charles Stewart

Inventor
James F. Frankey,

By his Attorneys

Church & Church

(No Model.)

4 Sheets—Sheet 2.

J. F. FRANKEY.

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Fig. 3.

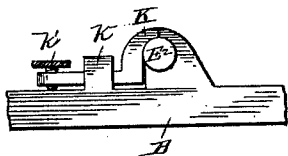


Fig. 4.

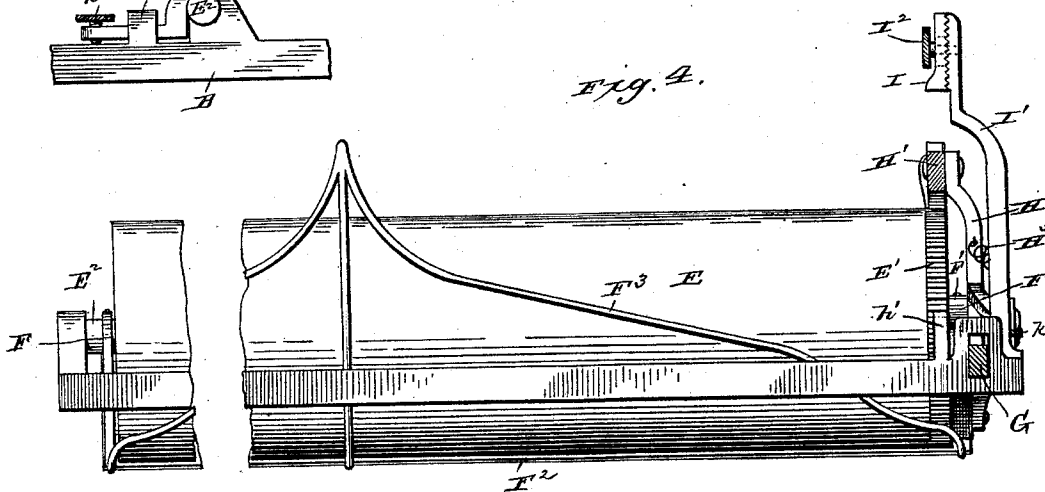


Fig. 5.

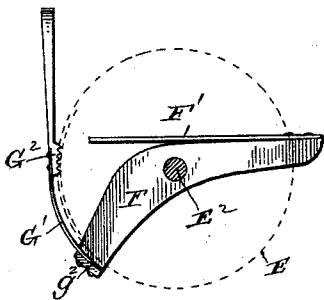
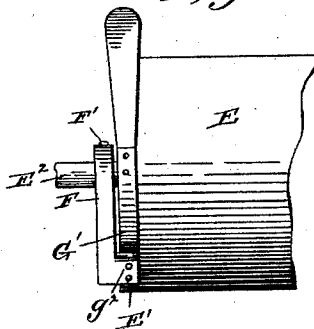


Fig. 6.



Witnesses

E. B. Smith.

Alex. Stewart.

Inventor

James F. Franky,

By his Attorneys

Church & Church

(No Model.)

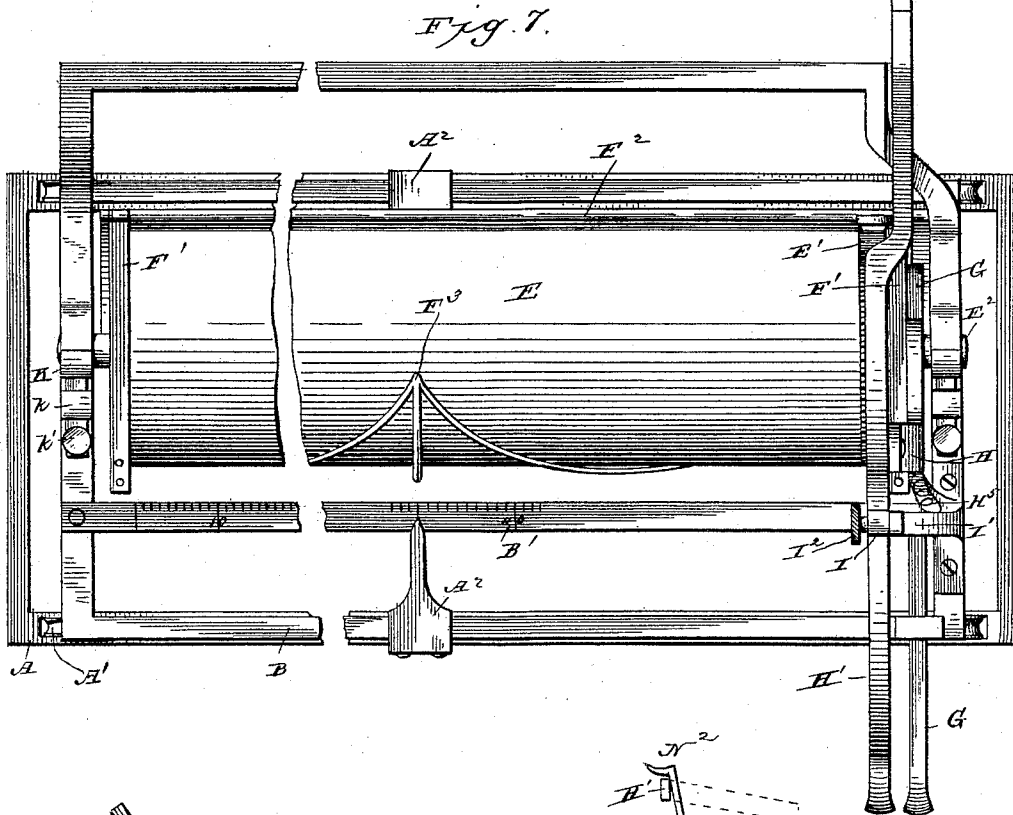
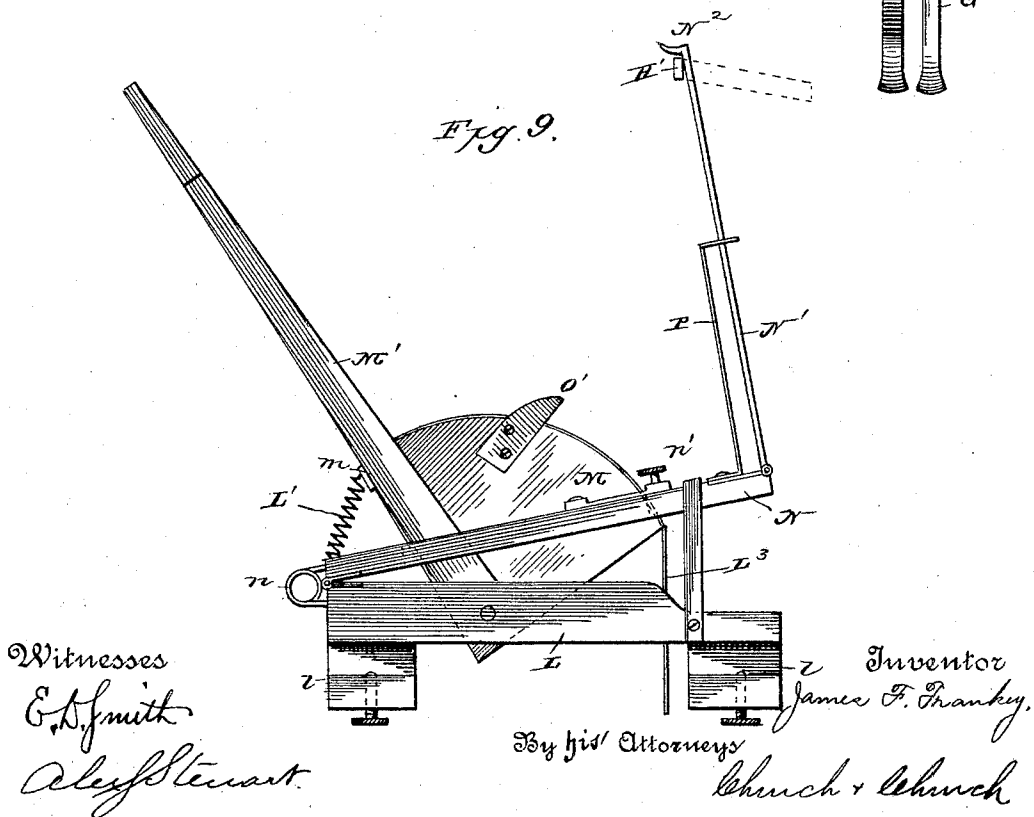
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Alex Stewart.

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Church + Church

Inventor

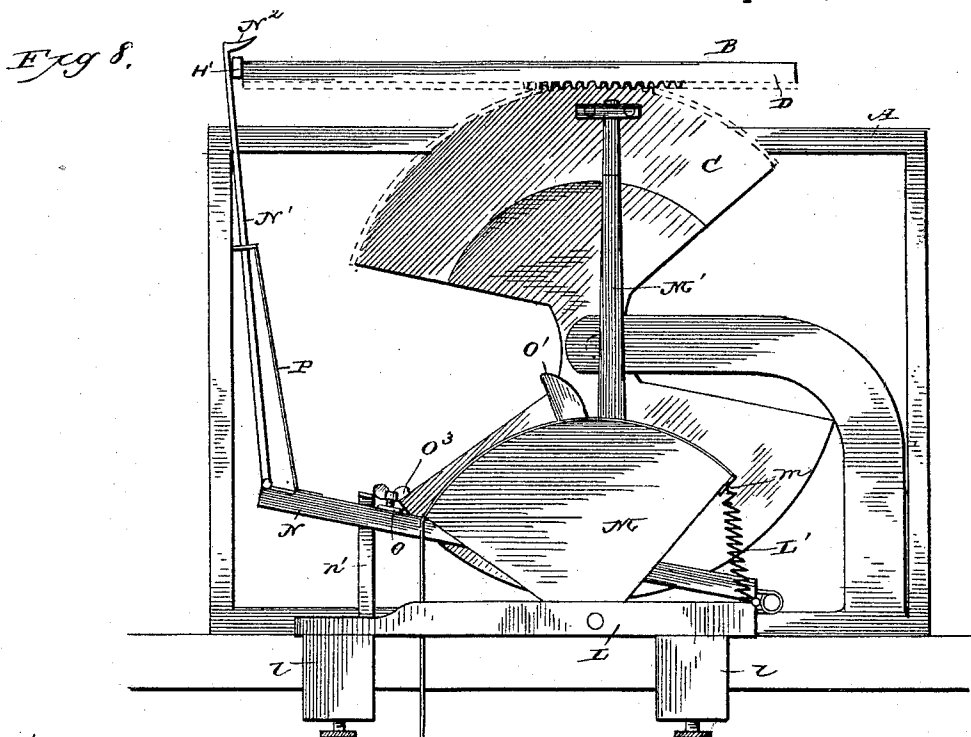
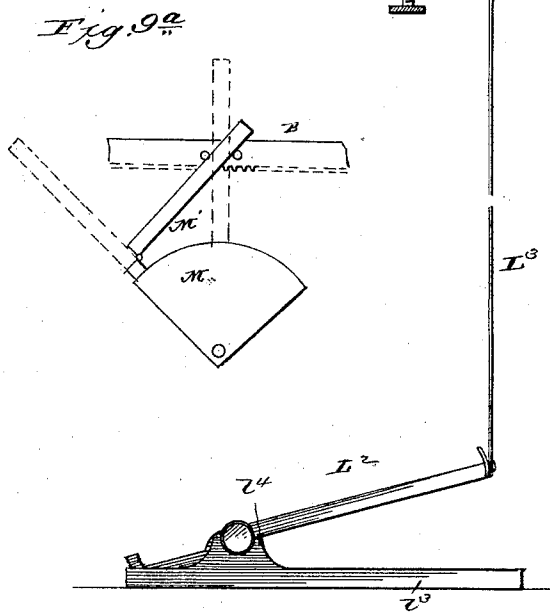
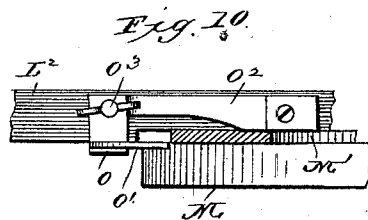
James F. Franky.

J. F. FRANKEY.

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Witnesses

C. D. Smith

Alex. Stewart

Inventor
James F. Frankey.

By his Attorneys

Church & Church

UNITED STATES PATENT OFFICE.

JAMES F. FRANKEY, OF DODGE CITY, KANSAS.

CARRIAGE MECHANISM FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 458,566, dated September 1, 1891.

Application filed January 30, 1890. Serial No. 338,550. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. FRANKEY, of Dodge City, in the county of Ford and State of Kansas, have invented certain new and useful Improvements in Type-Writers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention has for its object to provide an improved platen and paper-feeding mechanism for type-writers, whereby the paper may be turned to expose the line being printed to the view of the operator, the paper advanced to bring the next line to the printing-point and the platen returned to first position, or to the proper point for the commencement of a line with the greatest convenience and rapidity and with the least possible effort on the part of the operator.

The invention consists in certain novel details of construction and combinations and arrangements of parts, all of which will be hereinafter described and pointed out particularly in the claims at the end of this specification.

Referring to the accompanying drawings, Figure 1 is a side elevation of a type-writer carriage, its returning mechanism, and the platen-operating devices. Fig. 2 is a side elevation of the carriage, platen, and guides, with the end of the frame and paper-feeding devices removed. Fig. 3 is a view of the preferred form of bearing for the platen, omitted in the other figures for the sake of clearness. Fig. 4 is a front elevation of the carriage and platen. Figs. 5 and 6 are details of construction. Fig. 7 is a top plan view of the carriage. Fig. 8 is a rear elevation showing the carriage returning and automatic paper-feeding mechanism. Fig. 9 is a similar view of the opposite side of the said mechanism. Fig. 9^a is a view of a modified form of returning-lever on a reduced scale. Fig. 10 is a detail of Fig. 9.

Similar letters of reference indicate the same parts.

A indicates the type-writer frame, and B the carriage-frame, of any desired form, preferably, however, such as described in my prior application, Serial No. 333,993, filed December

16, 1889, the carriage being driven from right to left by means of a spring-operated gear-segment C gearing with a rack D on the rear of the carriage-frame. Anti-friction wheels A' on the frame support the carriage and permit it to move freely to the right or left, guides or retainers A² being provided to keep the carriage in position on the rollers, the front guide terminating in a pointer or index-finger, which when the platen is rotated forward to expose the line of printing, indicates the printing-point, and, if desired, co-operates with a scale on the rod B' of the carriage-frame to indicate the printing-point at all times. The platen E is of the ordinary circular rotary type with a finely-toothed or serrated wheel E' at the right-hand end.

Mounted on the shaft E² of the platen at each end are the paper-guard supports F, their forwardly-extending ends having springs F', secured thereon, the rear ends of which are connected rigidly to and serve as the supports for the paper guide or guard F², which, it will be seen, is of sheet metal and curves around the platen, terminating close to the printing-point, and being supported independent of the platen may be swung around the same or the platen rotated without affecting the guide in the least. At a point near the bottom the guide is curved outward or a recess is formed therein, in which a roller f is journaled, which roller bears against the platen and materially reduces the friction on the paper in its passage over the guard or between the guard and platen. The paper is held and guided in front of the platen by the wire guide F³, which is connected to the guide F² at each end by solder or otherwise and has a projection at the center which extends nearly down to the printing-point, as shown in Fig. 4.

The guide-supports F have rearwardly-extending arms, and to the lower end of the right-hand one is pivotally secured a rod G, working in bearings in the front of the carriage-frame B and adapted when drawn forward to rotate the guides forward, the extent of such movement being controlled by the projections g on the rod G, a notch g' serving to keep the rod locked in its normal or retracted position. In order now to rotate the platen with the guides and thus bring the line being printed

into view at the front, a spring G' is secured to the bent end g^2 of the guide-supports F , and on this spring is mounted a corrugated block G^2 , which is normally pressed into engagement with the toothed wheel on the platen, as shown clearly in Figs. 5 and 6, thus connecting the guides and platen and causing them to rotate together when the rod G is lifted and drawn forward.

Outside of the guide-support F on the right-hand end of the platen-shaft is pivoted another member, which, for convenience, I shall call the "feed-lever support" H , and to the upper end of this support is pivoted the paper-feeding lever H' , extending out into convenient position to be grasped by the operator in front of the carriage and out at the back into position to be engaged by the rod for automatically feeding the paper, as will be presently described. A spring H^5 tends to hold the support H forward, and on the under side of the lever is provided a serrated or toothed block H^2 , which engages the wheel E' to rotate the platen, this being accomplished by elevating the lever H' , causing the block H^2 to engage the wheel E , locking the parts together, and when the lever is farther elevated causing the platen to turn the support H , turning on the platen-shaft against the tension of spring H^5 . The lever H' is weighted at the forward end, and hence normally rests out of engagement with the wheel E' on a stop h' . (Shown in Fig. 1.) The upward movement of the lever, and consequently the extent of the feed of the paper, is limited and regulated by the stop I , mounted on the standard I' , secured to the side of the frame, adjustable vertically and held in adjusted position by means of the thumb-screw I^2 , passing through a slot therein. (Shown in dotted lines, Fig. 4.) The guides and connected parts are returned to normal position by a spring F^4 , secured at one end to the rear guide and at the other end to the carriage-frame.

As it is frequently desirable to remove the platen entirely either for the purpose of repairs or to renew the same, I have provided a bearing, illustrated for convenience in a separate view, Fig. 3, which may be readily separated to permit the removal of the roller.

K indicates a co-operating bearing-piece, mounted in a guide or clip k on the frame and held in adjusted position by a set-screw k' . The operation will be readily understood without further description.

At the back of the machine (see Fig. 9) a support L for the carriage-returning and automatic paper-feeding devices is provided, being preferably secured in position by clips or clamps l , embracing the edge of the table or type-writer base, although such support may be a permanent structure. A segment M is pivotally mounted in the support L and is moved in one direction by a spring L' and connected with a foot-treadle L^2 by means of a cord or strap L^3 , whereby it may be moved in the opposite direction by the operator's

foot. Immediately in front of the segment M and pivoted on the same center is an arm M' , extending up and loosely connected to the segment C , and at the right-hand edge of the segment M , Fig. 8, is a projection m , with which the arm M' engages. Thus when the segment is turned by means of the cord and treadle, before mentioned, the arm will be drawn over and the carriage returned to first position, the segment itself immediately returning to its original position and the arm returning with the carriage. This arm, it is obvious, may be connected directly to the carriage just as the spring-arm is connected thereto in the ordinary calligraph, or as in Fig. 9^a, instead of to the segment C ; but I prefer the arrangement shown, as the necessary range of movement is less. The lower end of the arm may be fastened rigidly to the segment M and the arm jointed intermediate between the pivot of the segment and the upper end of the arm.

While I do not confine myself to any particular method of construction in this regard I prefer the arrangement shown, as it gives an absolutely free movement to the carriage after the return to position and while moving to the left in operation.

N indicates a lever hinged at one side of the support L and provided with a spring n for elevating it and a stop n' for limiting its upward movement. At the far end the lever is provided with an upwardly-extending hinged rod N' , having at its upper end a hook N^2 , which is adapted to engage with the rear end of the paper-feeding lever as the carriage nears first position and to draw the same downward by means to be now described. On one side of the lever N is projection O , which extends into the path of a co-operating projection O' on the segment M , said projection O' being located so as to engage the projection O and move the lever as the segment M nears the completion of its stroke, and after the hook N^2 has been brought into engagement with the paper-feed lever. The extent of movement given the lever N is regulated by adjusting the projection O , which for this purpose is mounted on or forms an extension of a stout spring O^2 , secured rigidly to the lever and adjusted by means of the set-screw O^3 , which screws through the projection or end of spring and rests on the lever L^2 , as will be readily understood. The movement of the lever N , it will be at once seen, controls the extent of the paper-feed. Thus when a particular adjustment is made for the lever at the back, the stop I at the front should be given the same adjustment, so that the operator may feed the paper by hand or automatically, as desired. The rod N' it will be observed is hinged to the lever N and comes into contact with the paper-feeding lever a short time before the carriage reaches first position, and in order to hold it in position and permit it to yield and move with the carriage a spring P is secured rigidly to the le-

ver N and the rod passed through an aperture in the bent upper end. (See Figs. 1, 8, and 9.) Foot-treadle L², before referred to, is provided with a weighted base B², and is pivoted near one end in open bearings B¹, giving the forward end a long range of movement and enabling the operator to secure more power and a longer sweep, and when attached to the segment the spring serves to keep the rear end elevated.

In operating the devices the foot of the operator may rest on the treadle with the pressure on the heel. By pressing the toe or front of the foot downward on the treadle the segment M is turned, moving the arm M' and carriage, and as the carriage nears first position the hook N² passes over the rear end of the paper-feeding lever, the continued movement of the segment bringing the projections O O' into engagement, drawing the rod N' and paper-feeding lever down. When the segment is released, it returns to first position, permitting the rod N' to rise under the influence of its spring and the arm M' to remain with the carriage. Assuming that a line is being printed and it is desired to see the portion just printed and the line immediately before it, it is only necessary to grasp the handle G, elevate the same to clear the locking-notch, and draw the said handle or rod forward, thus turning the paper-guides, and, as they are connected to the platen through the toothed wheel and block, turning it also. The extent of the rotation is limited by a projection g on the rod G. It will be noted that the rear paper-guide F² rests against or very close to the platen, and the paper passing between the two is held firmly up in printing position and little or no difficulty will be experienced by the same bulging out or standing away from the platen, and thereby preventing perfect alignment.

Having thus described my invention, what I claim as new is—

1. In a type-writer, the combination, with the rotary platen having the serrated wheel at one end, the paper-guide pivoted on the platen-shaft, the spring-pressed block connecting the guide and platen for holding them in adjusted position with relation to each other, the rod for turning said guide and platen forward, and a lock for holding them in normal position, of the paper-feeding lever having the weighted forward end and block for engaging the serrated wheel on the rear end, the support to which said lever is pivoted, mounted on the platen-shaft, and the spring for holding said support forward, substantially as described.
2. In a type-writer, the combination, with the platen, of the paper-guide supports pivotally mounted at each end thereof, the springs connected to said supports, the paper-guide mounted on said springs, and a block for connecting said guide and platen, substantially as described.
3. In a type-writer, the combination, with

the platen, the paper-guide at the back of the platen independently movable with relation to each other, and the block connecting them, of the guide in front of the platen connected to the rear guide at the ends and having the central depending portion extending into proximity thereto at the center, substantially as described.

4. In a type-writer, the combination, with the longitudinally-moving carriage and pivoted arm and segment for returning it to first position, of the treadle and spring for moving the same, substantially as described.

5. In a type-writer, the combination, with the longitudinally-moving carriage and the pivoted arm at the rear for returning it to first position, of the independent pivoted segment engaging the arm to move it in one direction and the treadle and spring for moving the segment, substantially as described.

6. In a type-writer, the combination, with the longitudinally-moving carriage and the pivoted arm at the rear for returning it to first position, of the independent segment pivoted on the same center as the arm, the projection at one side of the segment for moving the arm in one direction, the treadle for moving the segment and arm, and the spring for returning the segment, substantially as described.

7. In a type-writer, the combination, with the longitudinally-movable carriage, the platen, and the paper-feeding lever having the rearward extension, of the segment pivoted in rear of the machine, the arm moved thereby for returning the carriage to first position, the pivoted lever having the upwardly-extending spring-pressed arm for engaging the paper-feeding lever, and the projection on the segment engaging said lever for moving the same to feed the paper, substantially as described.

8. In a type-writer, the combination, with the longitudinally-movable carriage, the platen, and the paper-feeding lever having the rearward extension, of the segment pivoted in rear of the machine, the arm moved thereby for returning the carriage to first position, the pivoted lever having the upwardly-extending movable arm for engaging the paper-feeding lever, the adjustable projection on said lever, and a co-operating projection on the segment for depressing the lever to feed the paper, and the spring for returning said lever to first position, substantially as described.

9. In a carriage-returning and paper-feeding mechanism for type-writers, such as described, the combination, with the base or support, of the upwardly-extending arm and segment independently pivoted on the same center, the projection on the segment for moving the arm, the treadle for moving the segment in one direction, and the spring for moving it in the opposite direction, substantially as described.

10. In a carriage-returning and paper-feeding mechanism for type-writers, such as de-

scribed, the combination, with the base or support, the upwardly-extending arm and segment independently pivoted on the same center, and the projection on the segment for
5 moving the arm, of the paper-feeding lever pivoted at one side of the base, the upwardly-extending rod hinged thereto, the spring for holding the rod in position, and the projection on the lever, and a co-operating pro-
10 jection on the segment for moving the lever and rod, as set forth.

11. In a carriage-returning and paper-feeding mechanism for type-writers, such as described, the combination, with the base or

support, the upwardly-extending pivoted arm 15 and segment, and the projection on the segment for moving the arm, of the paper-feeding lever pivoted at one side of the base, with the upwardly-projecting rod thereon, the projection on the segment, and the adjustable 20 projection on the arm with which it engages, whereby the extent of movement of the lever may be regulated.

JAMES F. FRANKEY.

Witnesses:

MICHAEL WILDRICK SUTTON,
HARVEY MCGARRY.