W. A. McCOOL.

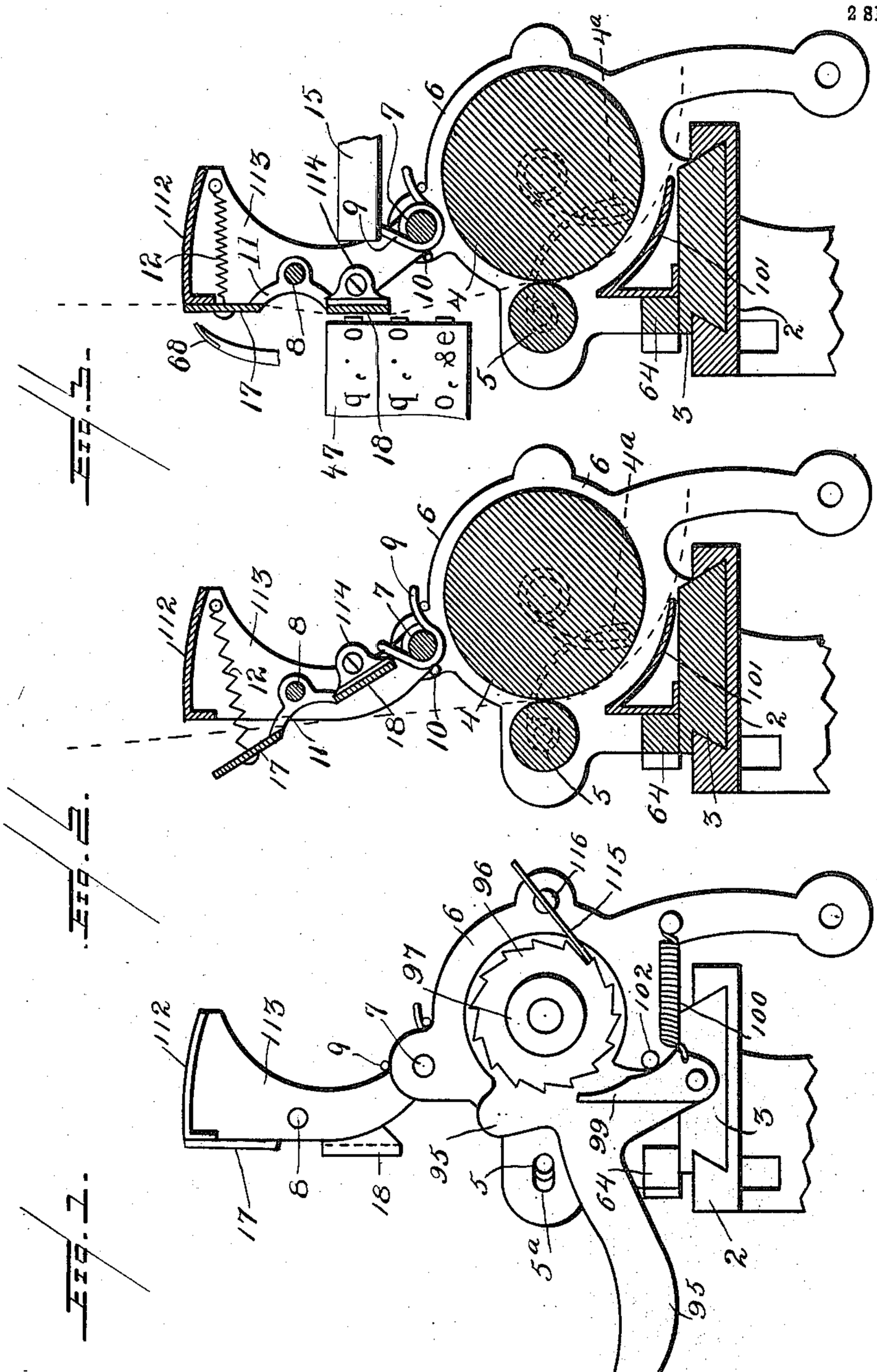
PAPER FEED MECHANISM FOR TYPE WRITERS.

APPLICATION FILED OCT. 9, 1905.

964,046.

Patented July 12, 1910.

2 SHEETS—SHEET 1.



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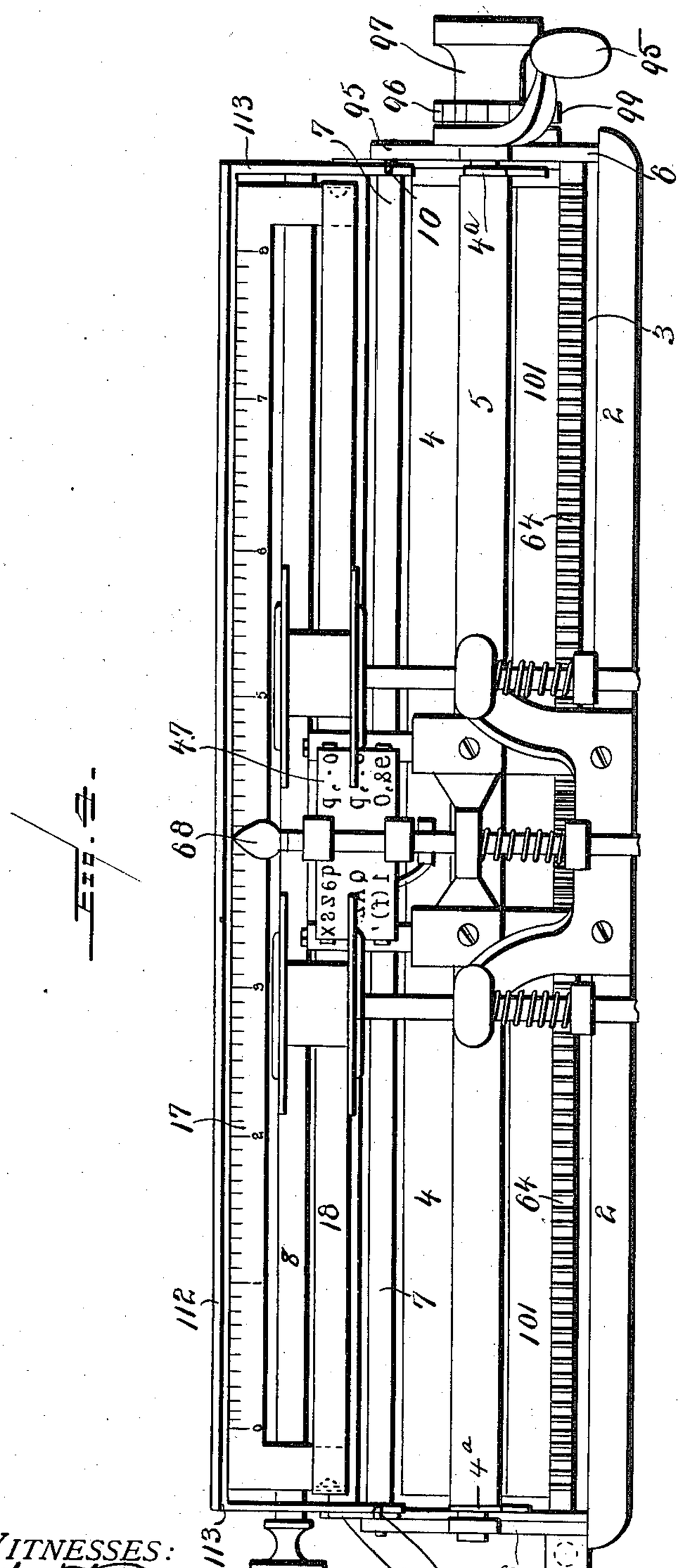

FIG. 2.

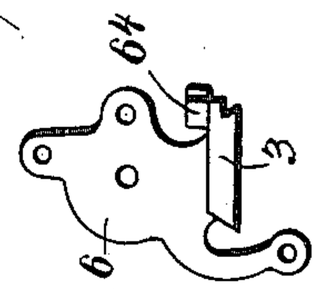

FIG. 4.

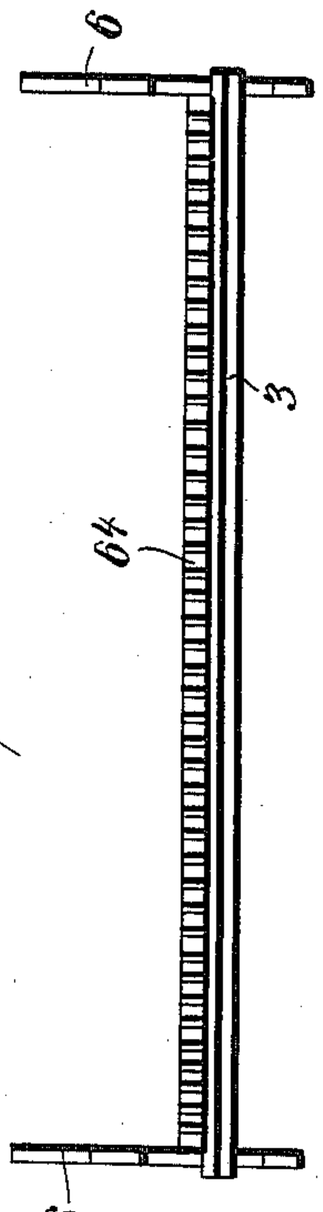

FIG. 5.

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UNITED STATES PATENT OFFICE.

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PAPER-FEED MECHANISM FOR TYPE-WRITERS.

964,046. Specification of Letters Patent. Patented July 12, 1910.

Original application filed June 19, 1903, Serial No. 162,225. Divided and this application filed October 9, 1905. Serial No. 282,046.

To all whom it may concern:

Be it known that I, WILLIAM A. McCOOL, a citizen of the United States, residing at Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Paper-Feed Mechanism for Type-Writers, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a support and feed mechanism for the sheets of paper used in a typewriter and mounted in the traveling carriage thereof.

The invention is shown as applied to a typewriter of the type-wheel class.

This case is a division of my application number 162,225, filed June 19, 1903.

In the accompanying drawings, Figure 1 is an end elevation of the paper carriage of a typewriter embodying my invention. Fig. 2 is a vertical transverse section of the same, showing the paper holder in open position. Fig. 3 is a view similar to Fig. 2, except that it shows the paper holder in closed position. Fig. 4 is a front view of the parts illustrated in Fig. 1. Fig. 5 is a front view of the frame of the paper carriage, drawn on a smaller scale than the views already described. And Fig. 6 is an end view of the frame shown in Fig. 5.

In these drawings 2 represents the bridge piece of the typewriter frame, which is milled out or otherwise shaped to form guide-ways for the paper carriage. The frame of this carriage comprises the base piece 3, fitted to the guide-ways in the bridge 2, and to which is secured the rack bar 64 that constitutes a part of the carriage feed mechanism, that need not be herein described in detail, and the counterpart ends 6 in which are journaled the platen 4 and the compression roller 5. The ends of the shaft of the compression roller are mounted in slots, 5^a, formed in the end pieces of the carriage frame, in order to permit such roller to be moved bodily toward and from the platen, as may be necessary to permit a greater or less number of sheets of paper to pass between them. Springs 4^a serve to maintain the roller and platen in proper relations to each other. Back of the rack 64 and below the rollers 4 and 5 is located a curved deflector 101, which receives the paper as it passes downward between the rollers, and deflects it toward the rear of the machine.

In the upper part of the carriage frame, above the platen, is supported a paper frame, formed with the counter-part ends 113 and the curved top plate 112 extending between and connecting the end pieces. The paper frame is pivotally supported in the carriage frame, the shaft 7 serving as the means for uniting them. A spring 9 coiled about the shaft 7 and having its ends engaging respectively with the carriage frame and the paper frame serves to hold the latter normally in its upright position adjacent to the type-wheel 47, in which position the paper frame rests against stops 10 on the carriage frame. It will be apparent from an examination of the drawings that the paper frame may be rocked on its pivots and moved back away from the type wheel to expose the printing or permit the more easy manipulation of the paper as may be desirable.

Journaled in the paper supporting frame upon a shaft 8 is a paper guide or paper-guiding frame, comprising the counter-part arms 11 and a graduated scale or space indicating bar 17. The normal position of the paper-guiding frame just described is that represented in Figs. 1 and 3 with the indicating bar 17 held close against the front edge of the top plate 112 by the spring 12. The frame may, however, be moved into the position indicated in Fig. 2 to permit the insertion of a sheet of paper or for other reasons. An index finger or pointer 68 stands opposite the graduated bar 17, being supported in any suitable manner.

The arms 11 not only extend upward to support the scale plate 17, but are also preferably extended downward and constitute supports for the brackets 114, by which is supported a cushion band 18 of thin rubber or other elastic material arranged to extend across the frame and to form a shield between the hammer 15 and the paper that is forced by the blows of the hammer against the type upon the type-wheel 47. A knob 94 on the rod 8 outside of one of the end pieces 113 of the frame provides a means for moving the frame in which are mounted the space bar 17 and the elastic band 18, placing these parts in such position that the paper can be easily passed down between the space

bar and the top piece 112, and in front of the band 18, and then directed into the space between the roller 5 and the impression cylinder 4. At the right hand end of the paper carriage and loosely mounted upon the extended shaft or journal of the impression cylinder 4 is the lever 95 used for line spacing. This lever carries a pawl 99 that is arranged to engage with the ratchet wheel 96, fast on the shaft of the platen or impression cylinder, whenever the lever is raised. The pawl is normally held out of engagement with the ratchet by means of a pin 102 carried by the end frame piece 6 of the carriage, but is brought into engagement with the ratchet when the lever is raised, by the spring 100. A knob 97 employed for turning the impression cylinder or platen by hand is mounted upon the shaft thereof outside the ratchet 96. A detent 115 held in a split pin 116, mounted in the frame piece 6, may be employed to engage with the ratchet wheel 96 to prevent slip or loss motion.

In using this invention the operator first turns the space bar 17 forward by means of the knob 54 and inserts the paper downward behind the space bar 17 and in front of the band 18, thence down between the rollers 4 and 5; and when once inserted between said rollers, by turning the knob 97 on the roller 4 the paper may be continued to be fed downward until the upper end thereof has been brought to the proper position for the printing of the first line. The deflector 101 acts to deflect the paper in its descent toward the rear of the machine where it does not interfere in any way with any of the parts of the mechanism.

What I claim is:

1. In a typewriter, the combination of a paper carriage, a paper holder, pivotally mounted in a frame above the carriage and consisting of a graduated spacing bar above the pivot and a flexible band below the pivot, normally supported in a vertical position and adapted to be rotated for the admission of paper between said spacing bar and band, and a spring for returning the paper holder to normal position, substantially as set forth.

2. In a typewriter, the combination of a paper carriage, a type-carrying mechanism, a hammer cushion and a paper supporting frame carrying said cushion and yieldingly mounted for movement toward and away from the type.

3. In a typewriter, the combination with a suitable frame, a type carrying mechanism, a paper carriage, paper holding and feeding rollers on said carriage, and a rocking paper guide frame having a graduated scale thereon, and a hammer cushion on said paper guiding frame.

4. In a typewriter, the combination with a suitable frame, a type carrying mechanism, a paper carriage, paper holding and feeding rollers on said carriages, a spring-actuated rocking paper guiding frame having a graduated scale thereon, and a hammer cushion on said paper guiding frame.

5. In a typewriter, the combination with a suitable frame, of type carrying mechanism, a paper carriage, paper holding and feeding rollers on said carriage, a rocking paper guiding frame, a graduated spacing bar at the upper part of said frame, and a yielding hammer cushion at the lower part of said frame.

6. In a typewriter, the combination of type carrying mechanism, a paper carriage, a paper support on said carriage yieldingly mounted with respect to the type, and a rocking paper guide-frame on said paper support.

7. In a typewriter, the combination of type carrying mechanism, a paper carriage, paper holding and feeding rollers on said carriage, a rocking paper support on said carriage, and a rocking paper guide frame on said paper support.

8. In a typewriter, the combination of the printing mechanism, the paper carriage, means for moving the carriage transversely of the type, two paper rollers mounted in the carriage horizontally opposite each other with a vertical passage way between them, means for yieldingly pressing the rollers together, a curved paper deflector below the rollers, a rotatable paper guiding frame having at its upper part a graduated bar and at its lower part a yielding hammer band, a spring tending to retain the said frame in normal vertical position, and means for moving the said frame.

In testimony whereof I affix my signature, in presence of two witnesses.

WILLIAM A. McCOOL.

Witnesses:
Jos. S. Rouzer,
E. T. Fessenden.