

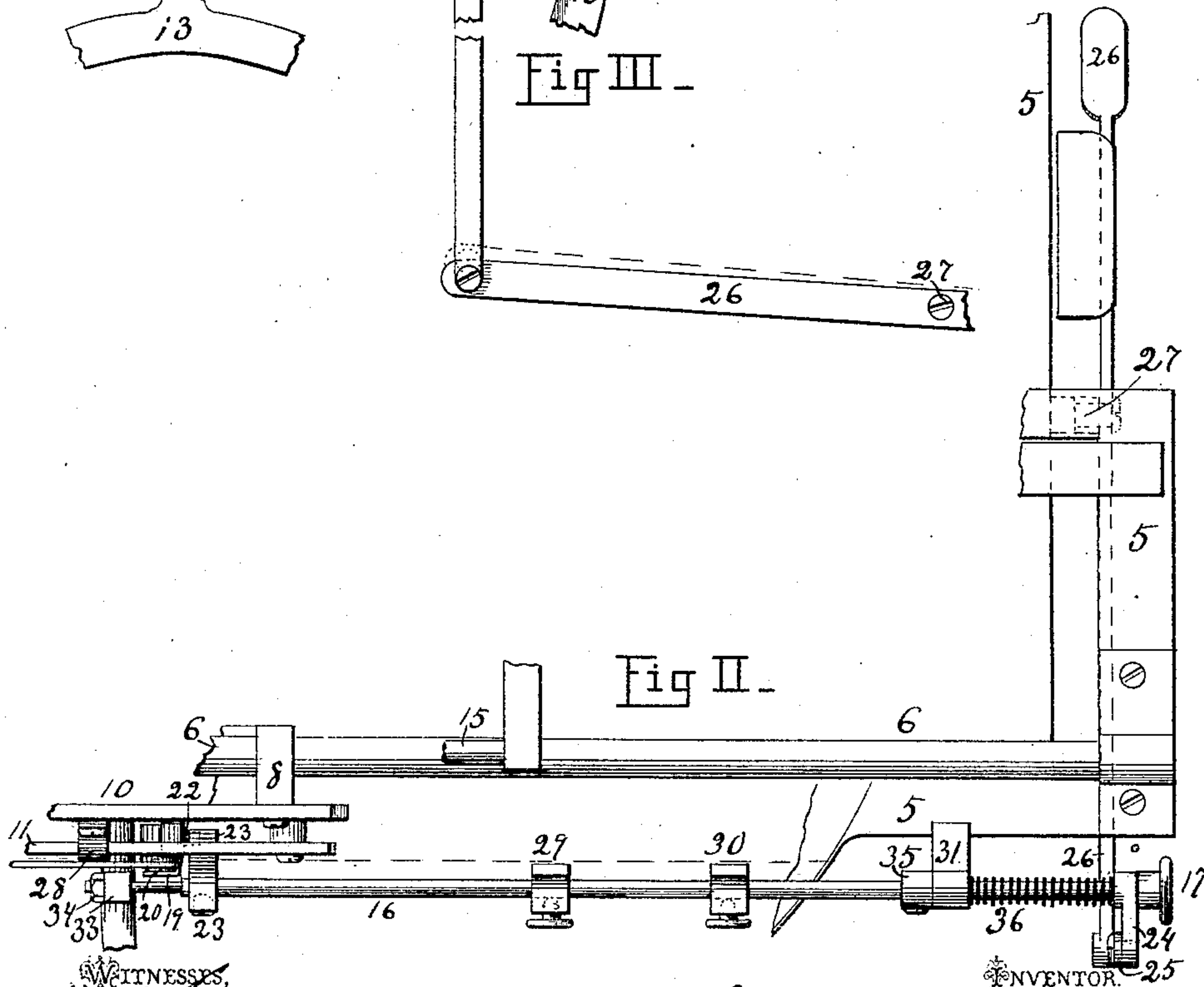
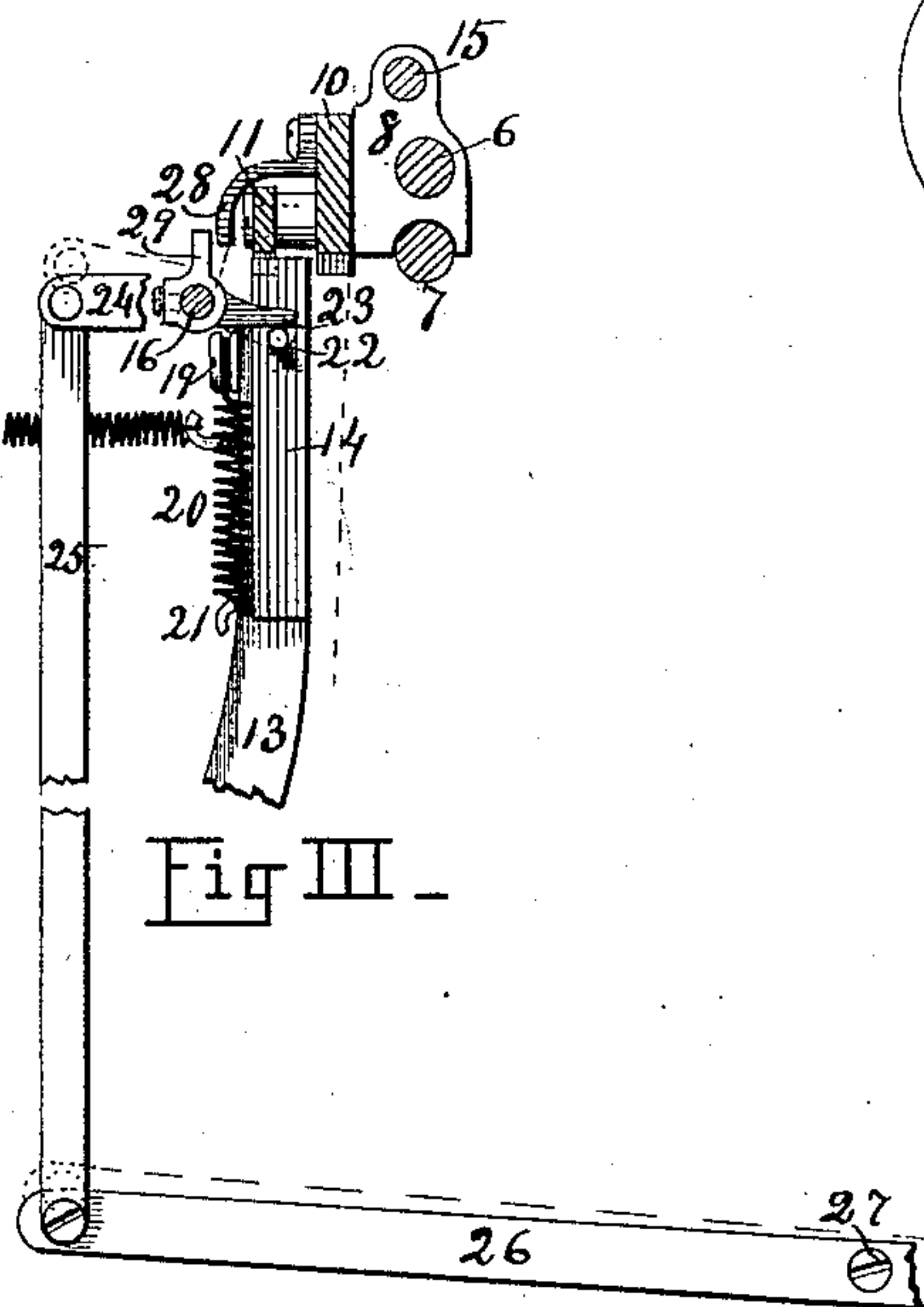
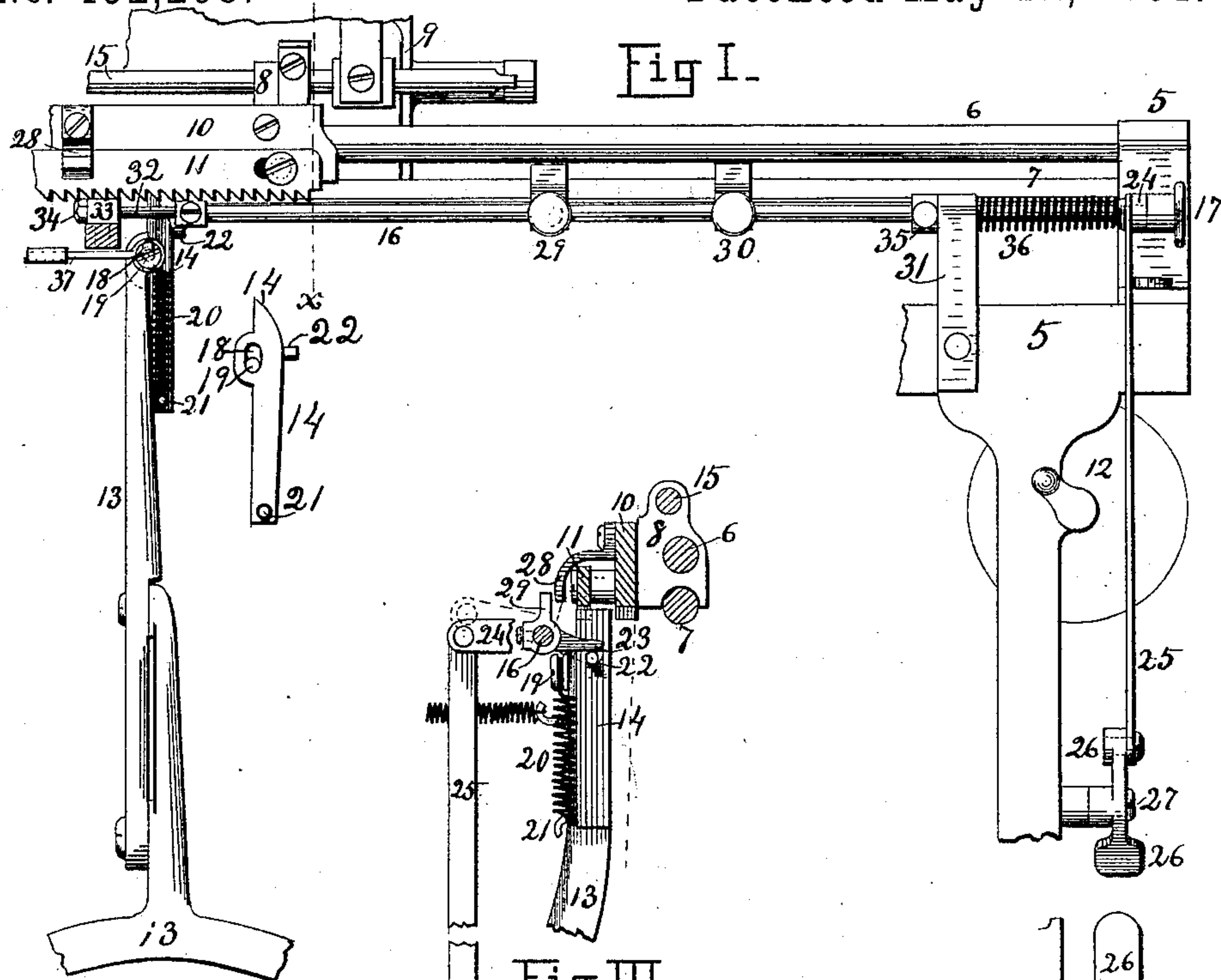
(No Model.)

2 Sheets—Sheet 1.

J. B. GATHRIGHT.
TYPE WRITING MACHINE.

No. 452,268.

Patented May 12, 1891.



WITNESSES,
Wm. B. Hillyard
Mr. B. Hillyard.

INVENTOR,
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W. E. Stevens ATT.

(No Model.)

2 Sheets—Sheet 2.

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Fig. IV.

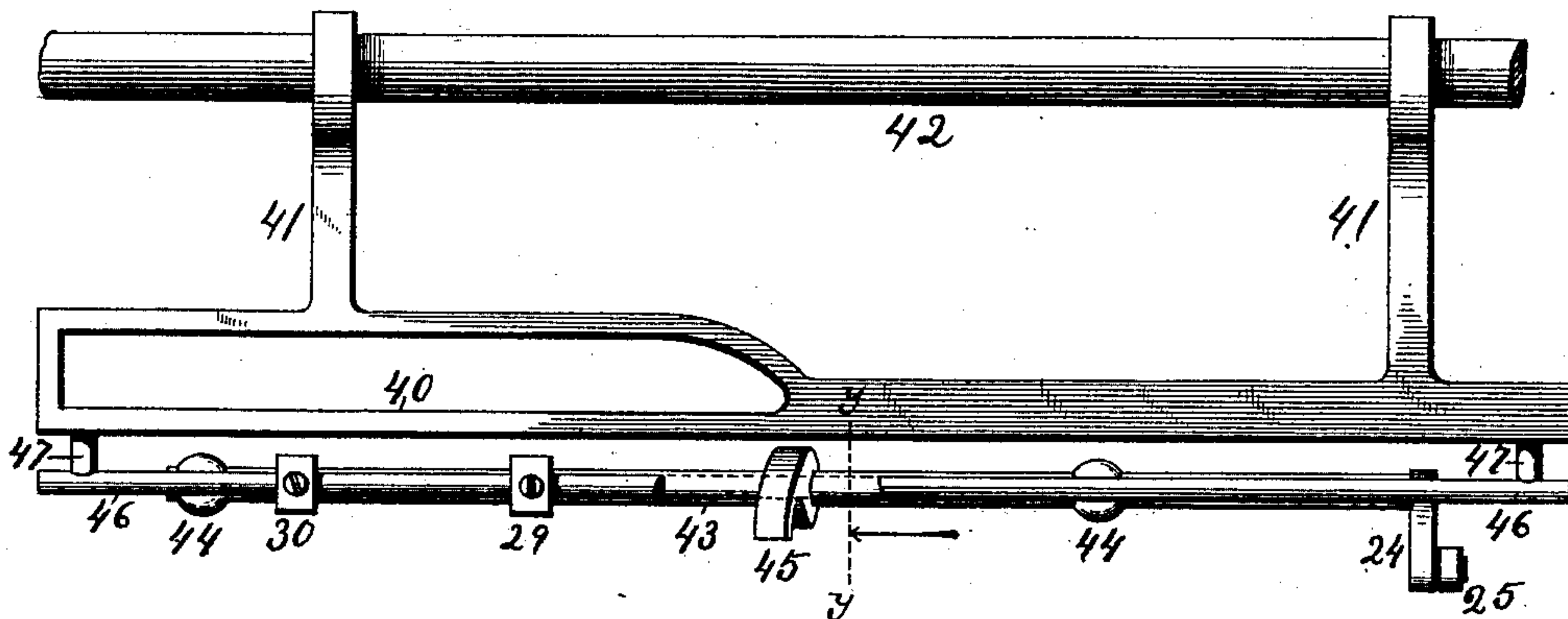


Fig. VI.

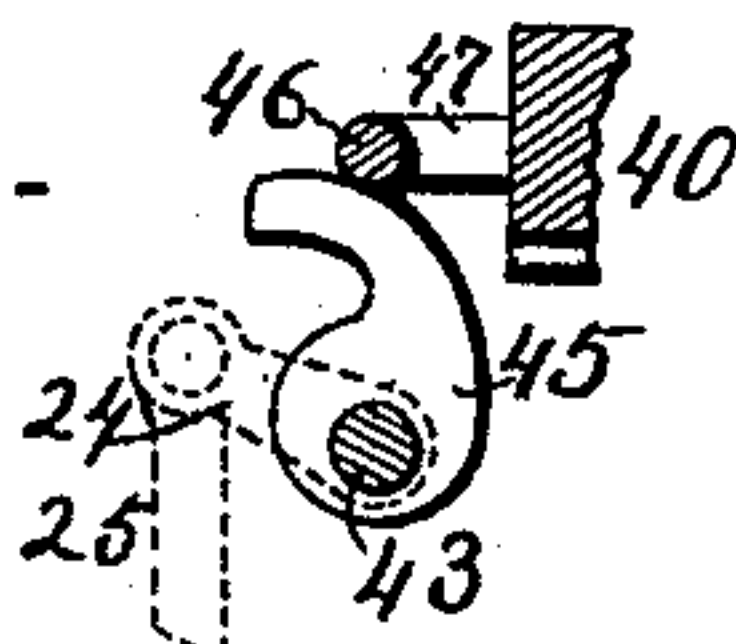


Fig. V.

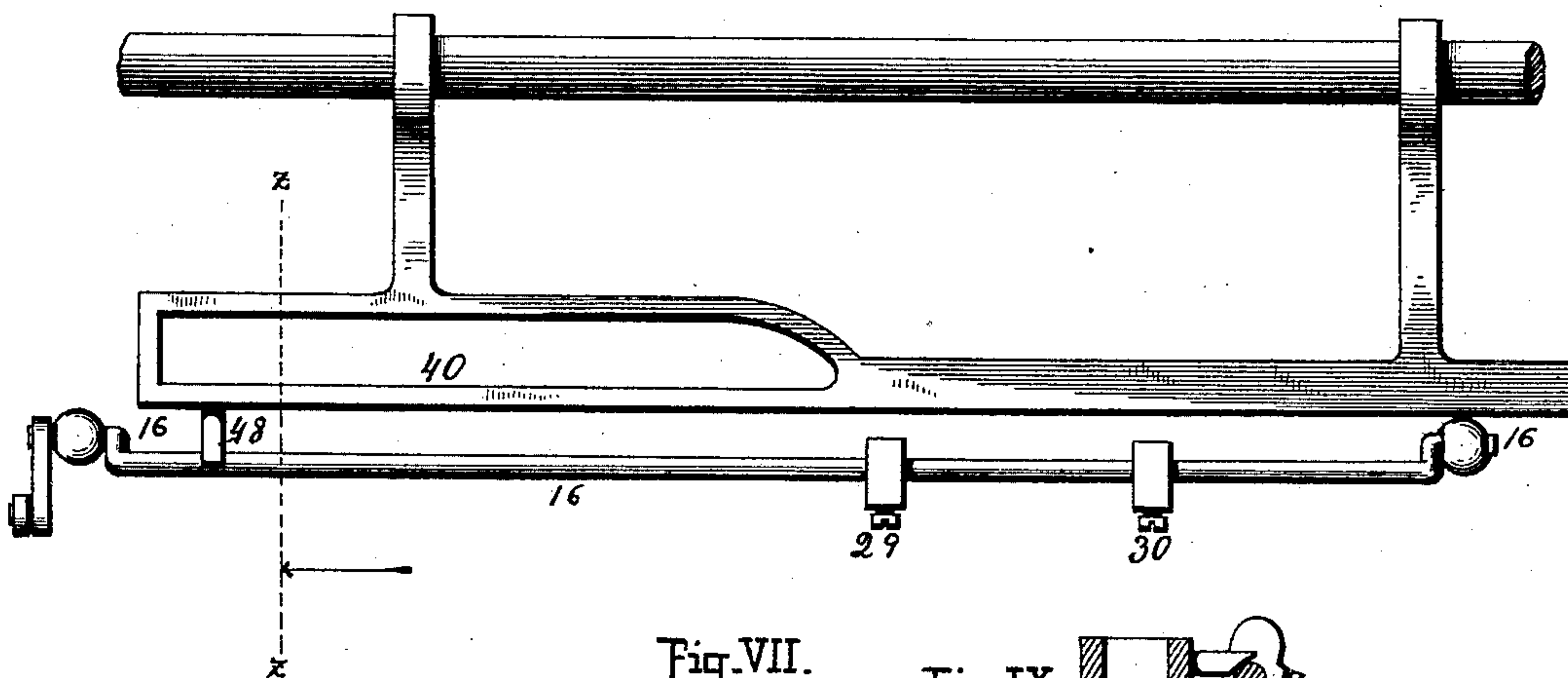


Fig. VII.

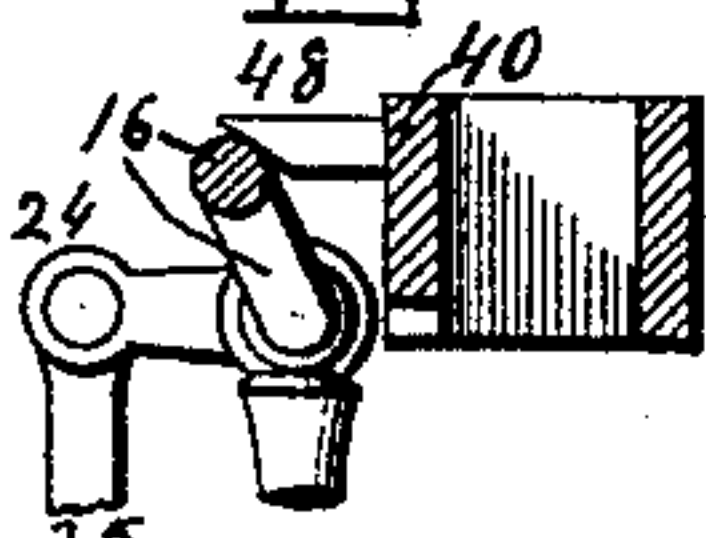


Fig. IX.

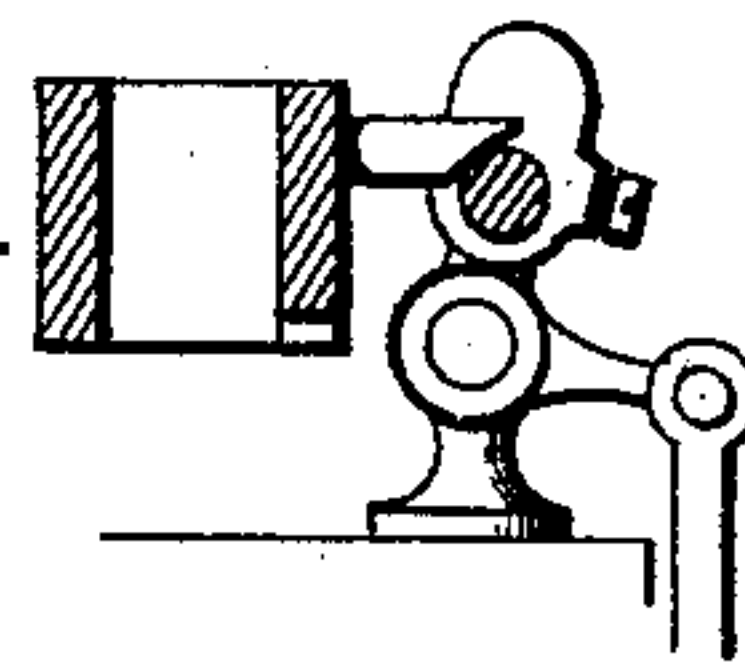
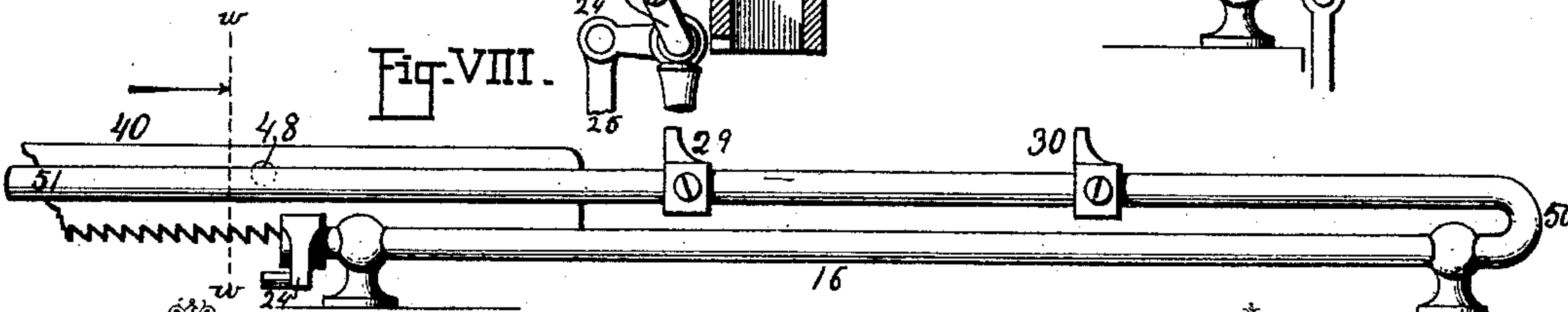


Fig. VIII.



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UNITED STATES PATENT OFFICE.

JOSIAH B. GATHRIGHT, OF LOUISVILLE, KENTUCKY.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 452,268, dated May 12, 1891.

Application filed October 17, 1890. Serial No. 368,435. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH B. GATHRIGHT, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Type-Writing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to type-writing machines, and its object is to provide means whereby the skipping device, which is the subject of former Letters Patent No. 436,916, dated September 23, 1890, may be adapted to and become a part of type-writing machines of different kinds, in some of which the feed-rack is fixed rigidly to the carriage and the detent is movable to disengage the rack, and in others the rack is hung to be raised out of engagement with the detent.

To this end my invention consists in the construction and combination of parts forming a portion of a type-writing machine, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a rear view of certain portions of a type-writing machine commercially called the "Caligraph," showing one form of my invention. Fig. 2 is a plan view of the same, all parts of the machine which are unnecessary to this invention being broken away or left out entirely. Fig. 3 represents a vertical section at the line *x* of Fig. 1, with some parts which are located far to the right hand projected upon the same plane to illustrate the operation. Figs. 4 and 5 are plans or top views of modifications of my invention adapted to such type-writing machines as the Remington. Fig. 6 is a transverse vertical section at *y* of Fig. 4. Fig. 7 is a transverse vertical section at *z*, Fig. 5. Fig. 8 is a rear side view of another modification, and Fig. 9 is a cross-section of the same at *w*.

5 represents a portion of the type-writing-machine frame; 6 7, the rods on which the carriage 8 slides, carrying the cylinder 9 and feed-racks 10 and 11.

12 represents one ribbon-spool; 13, the lever which oscillates the detent 14 from one feed-rack 11 to the other 10 and back again at each letter-space.

15 is the hinge-rod, upon which the cylinder 9 is pivoted to the carriage 8, to be tilted for examining the writing.

16 is the trip-rod, provided with a knob 17, upon which the operator may push to disengage the detent from the racks when it is desirable to move the carriage freely by hand.

All the parts thus far described are common to the Caligraph machines now in use; but for the purposes of my invention I have made some little alteration in the detent 14, rod 16, and rack 10. I slot the detent, as shown at 18 in the detail, to permit it to slide down upon its pivot 19 out of engagement with the racks 10 and 11, and I provide a spring 20, which is hung upon the head of the pivot-screw 19 and engages the detent by a stud 21, to hold the detent normally up into engagement with the racks.

22 is a stud fixed to or a shoulder made on the detent 14, beneath the arm 23 of the rod 16. This arm has heretofore been a fixture to the rod, serving to push against the detent to tip the top or edge thereof (to the left in Fig. 1) out of engagement with the racks 10 and 11, and it may continue to perform the same office; but I use it to press upon the stud or shoulder 22 to force the detent directly downward out of engagement with the racks, thus avoiding the necessity of moving the carriage backward to disengage the detent. To this end I fix upon the rod 16 an arm 24, which is connected by a rod 25 with a skipping-key arm 26, that is pivoted at 27 to the frame of the machine.

28 is a lug fixed to the carriage or some attachment thereof—in the present case to the rack 10—and 29 is a block fitted to slide along the rod 16, and provided with a set-screw, whereby it may be fixed to the rod at any desired point. The rod 16 is journaled as a rock-shaft in a bracket 31, fixed to the frame 5, and the forward end has heretofore been fitted to slide endwise only; but I provide it with a journal 32, fitted both to slide and to rotate in a bearing 33 on a fixture of the frame.

36 is a spring acting to retract the rod 16 to the right-hand in Fig. 1, and 34 is a screw-nut on the rod to stop it at the right point.

37 is an adjustable stay-rod, common before this invention.

The operation is as follows: First move the carriage to the point where a column of figures is to be located, press down the skipping-key, and then set the block 29 against the lug 28. Now proceed to use the machine, and after an item has been entered press upon skipping-key 26, which will rock the rod 16 so as to disengage the detent 14 from the racks, thus permitting the carriage to slide forward freely until the lug 28 meets and is stopped by the block 29, which was tipped into its path by the rocking of rod 16. Now if the key 26 be released the detent 14 will be raised by its spring 20 into engagement with the racks, the block 29 will be returned to its normal position and the operator may proceed to enter the price of the item. For the purpose of tabulating figures, &c., there may be any number of the blocks 29 and 30 to be adjusted upon rod 16. The block 29 is normally out of the path of the lug 28, (see Fig. 3,) and the arm 23 is above the path of the stud or shoulder 22, so that my attachment does not in any way interfere with the original functions of the machine, while by its aid a skip may be instantly made to a given column, whether the intervening space be a few letters or nearly a whole line, thus saving the operator's time and avoiding the use of the spacing-key to reach the column. It furthermore locates the column with positive certainty and without any mental effort of the operator, thus adapting the general principle of operation set forth in my patent, No. 436,916, to the specific cases herein described and accomplishing the same objects thereby.

While this device has been studied with a view to adapt it as much as possible to one existing form of machine, so that it may be added thereto with little expense, yet its construction may be varied within the limit of the principle of operation herein described to adapt it to other machines than the one named, and three modifications are shown in the last six figures of the drawings to direct the attention of the mechanic to some points where variations may readily be made according to circumstances and to adapt it to the different structures of different machines.

In Fig. 4, 40 represents the feed-rack hung by means of arms 41 on a rod 42 of the carriage, so that the rack may rise to disengage, or fall to engage, a detent below it. (Not shown.) 43 corresponds to the rock-shaft 16, and it is journaled in posts 44, fixed to the frame. 45 is a cam mounted on rock-shaft 43, and it might act directly against the rack to lift the latter; but it is preferable to interpose a rod 46, fixed to the rack by means of posts 47. Then the stop-blocks 29 and 30 may be placed on this rod to be stopped by the cam 45, in which case the said cam does the

duty of both the arm 23 and the stop-lug 28. In the first case the lug travels to meet the blocks, and in the second the blocks travel to meet the cam or lug, and whether the arm 24 be forward or backward depends on the direction in which the shaft should necessarily be rocked.

In Fig. 5 the rock-shaft 16 is offset from center throughout nearly its whole length in place of cam 45 and arm 23, to act against a wedge 48, which projects from the rack 40. Blocks 29 and 30 are again adjustably fixed on rod 16, and the wedge 48 may serve as the lug 28 to be stopped against said blocks. The description of the operation of the main form will serve for both these modifications.

In Fig. 8 the rock-shaft 16 is offset by forming a full bend in it at 50, and the action is the same as that described for the modification shown in Fig. 6. This modification is very simple, of easy construction, and easily applied to almost any style of machine already in use, and its free end 51 renders it very easy to apply the blocks 29 and 30.

Having thus fully described my invention, what I believe to be new, and desire to secure by Letters Patent, is the following:

1. The combination, in a type-writing machine, of a carriage having one or more feed-racks, a detent hung upon a pivoted arm for ordinary spacing and adapted to move upon that arm at right angles to the rack to disengage the feed-rack independent of the movement of the arm, a second pivoted arm adapted to move the detent upon the first-named arm, a skipping-key, and connections between it and the said second arm, substantially as described, whereby the detent is disengaged from a tooth of the rack by movement in the plane of the tooth, yet in a different direction from its usual spacing-escapement.

2. The combination of a type-writing-machine carriage having a feed-rack, a detent hung upon the frame of the machine to engage the rack-teeth and provided with a stud or shoulder, a rod journaled in attachments of the frame to rock therein, an arm upon the rod adapted to engage the said stud or shoulder of the detent, a skipping-key and connections between it and the said rod, whereby the latter may be rocked, a lug upon the carriage, and a block upon the rod located normally to one side of the path of the said lug and adapted to be moved into the said path by the rocking of the rod, whereby the carriage may be set free to slide forward and then be stopped at a prearranged point by a single stroke upon the said skipping-key.

3. The combination of a type-writing-machine frame, a carriage fitted to slide thereon and provided with a feed-rack and with a lug or shoulder 28, a detent adapted to engage the said rack and provided with a shoulder, a rock-shaft journaled in attachments of the frame to rock and to slide endwise therein, and provided with a shoulder to act endwise upon the said detent and with an arm to act

vertically upon the shoulder of the detent, substantially as described.

4. The combination of a type-writing-machine feed-rack, a detent hung upon a pivot
5 to swing sidewise and to slide vertically into and out of engagement with the rack, a rod having an arm adapted to engage the said detent to give the latter both sidewise and vertical motion, and a skipping-key connected
10 with the said rod, substantially as described.

5. The combination of a type-writing-machine feed-rack, detent, and push-rod, the said rod being journaled for both rocking and sliding motion and connected with the de-
15 tent to both swing it and to slide it vertically out of engagement with the rack, substantially as described.

6. The combination, in a type-writing machine having a carriage feed-rack, of a detent
20 hung to engage the said rack, a rock-shaft journaled in bearings parallel with the feed-rack to be rocked in a direction transverse thereto and having one arm communicating with the said detent to disengage it from the
25 rack and another arm or block to be rocked into the path of a fixture of the carriage, and a skipping-key connected with the rock-shaft, substantially as described.

7. The combination of a type-writing-machine feed-rack, a detent therefor, a rock-
30 shaft journaled in attachments of the frame nearly parallel with the said feed-rack and

provided with one arm to disengage the rack and detent, the said rock-shaft and arm being separate from and wholly independent of
35 the rock-shaft and pawl-carrying arm which are used for ordinary spacing, and further provided with another arm connected with a skipping-key, a lug upon the rack, and stop-blocks upon the rock-shaft, substantially as
40 described.

8. The combination of a type-writing machine feed-rack, a rock-shaft nearly parallel with the rack wholly independent of the ordinary feed rock-shaft, a lug upon one and
45 stop-blocks adjustably secured upon the other, a detent for the rack, the rock-shaft having one arm to disengage the rack and detent, and another arm connected with a skipping-key, substantially as described.
50

9. The combination of a type-writing-machine feed-rack, a detent hung by a slot-and-pivot connection with a fixture of the frame and a spring impelling it lengthwise of the slot normally into engagement with the rack,
55 a rod having an arm adapted to engage the said detent, and a skipping-key connected with said rod, substantially as described.

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

JOSIAH B. GATHRIGHT.

Witnesses:

E. G. WALKER,
W. M. SCHRODT.