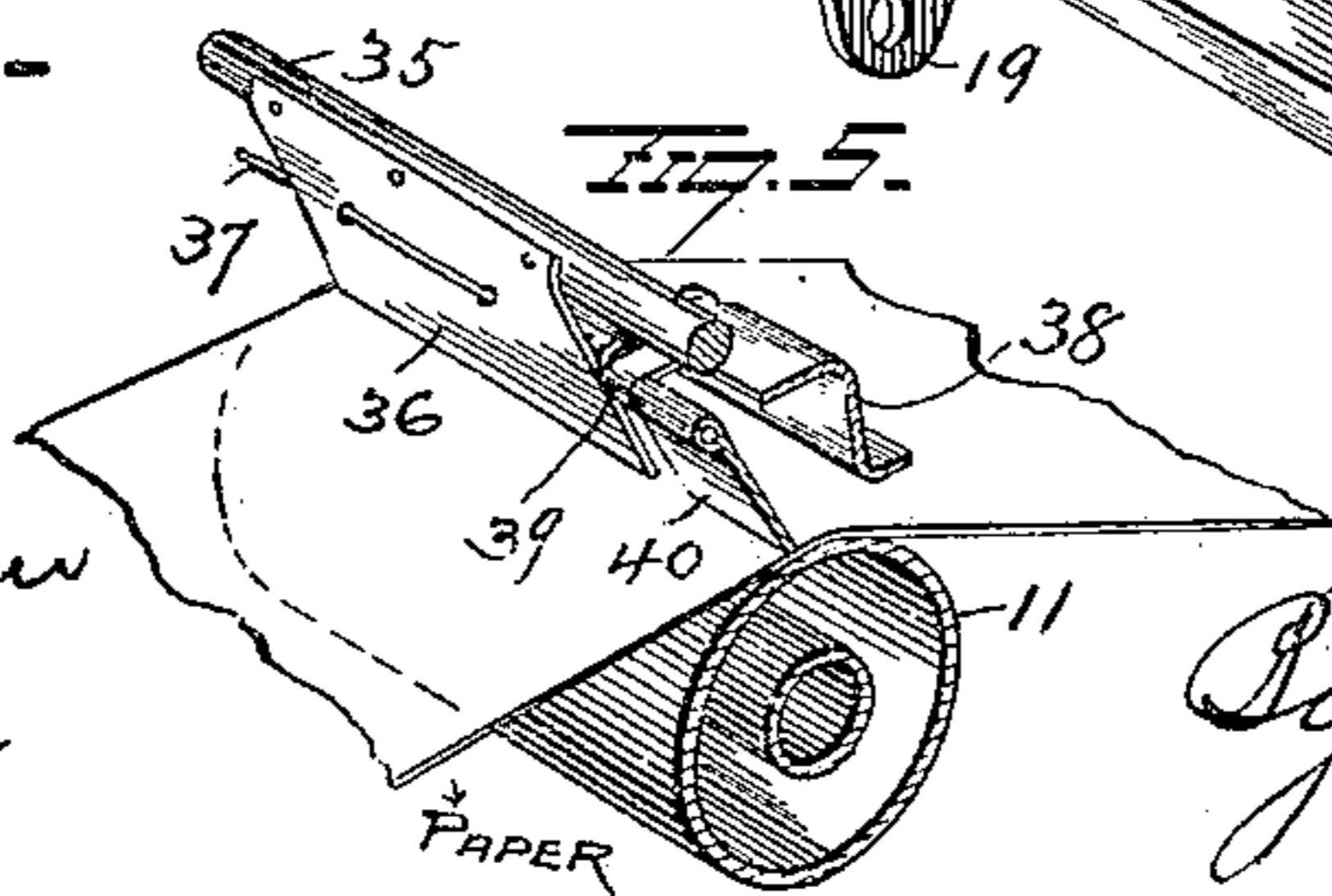
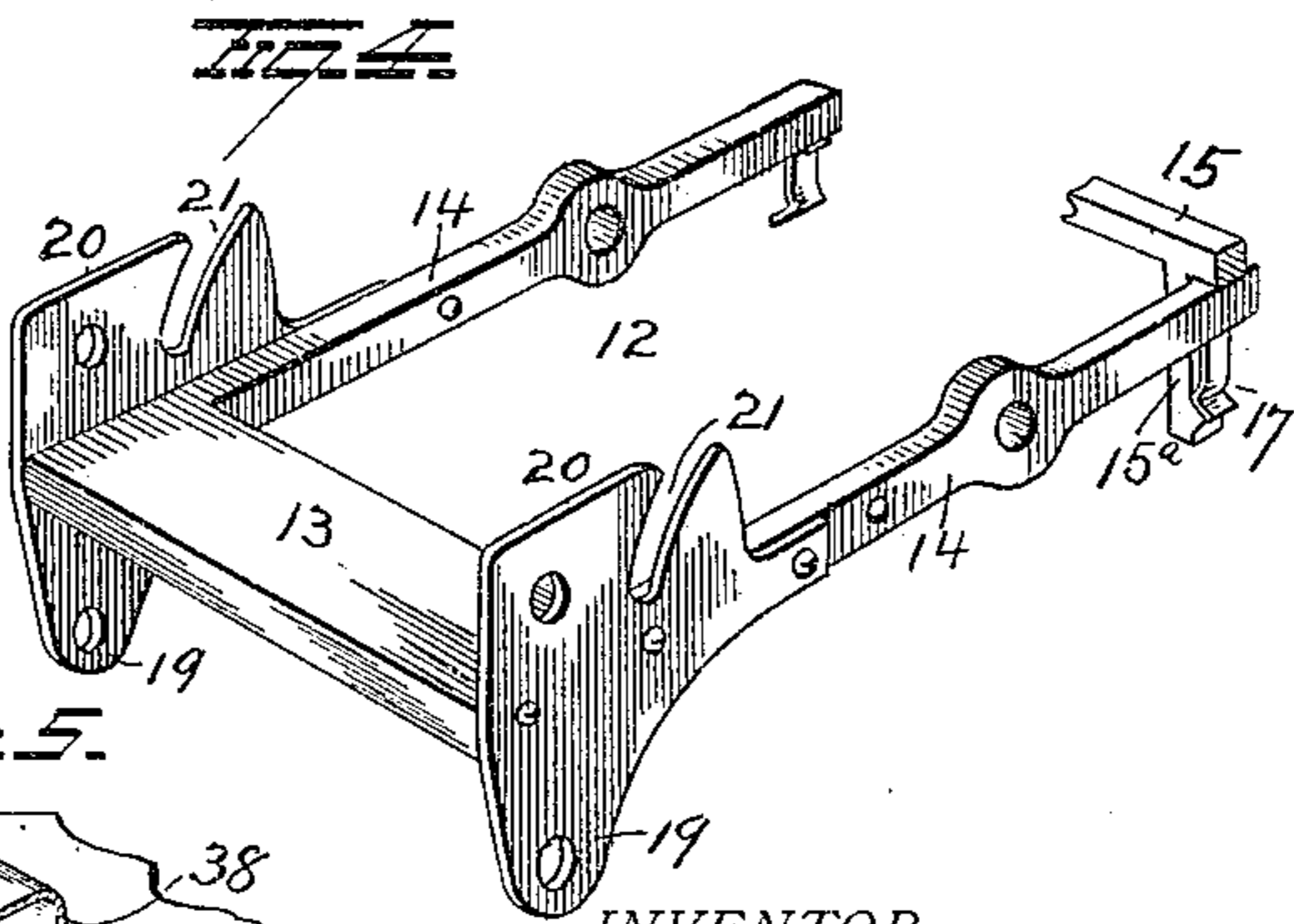
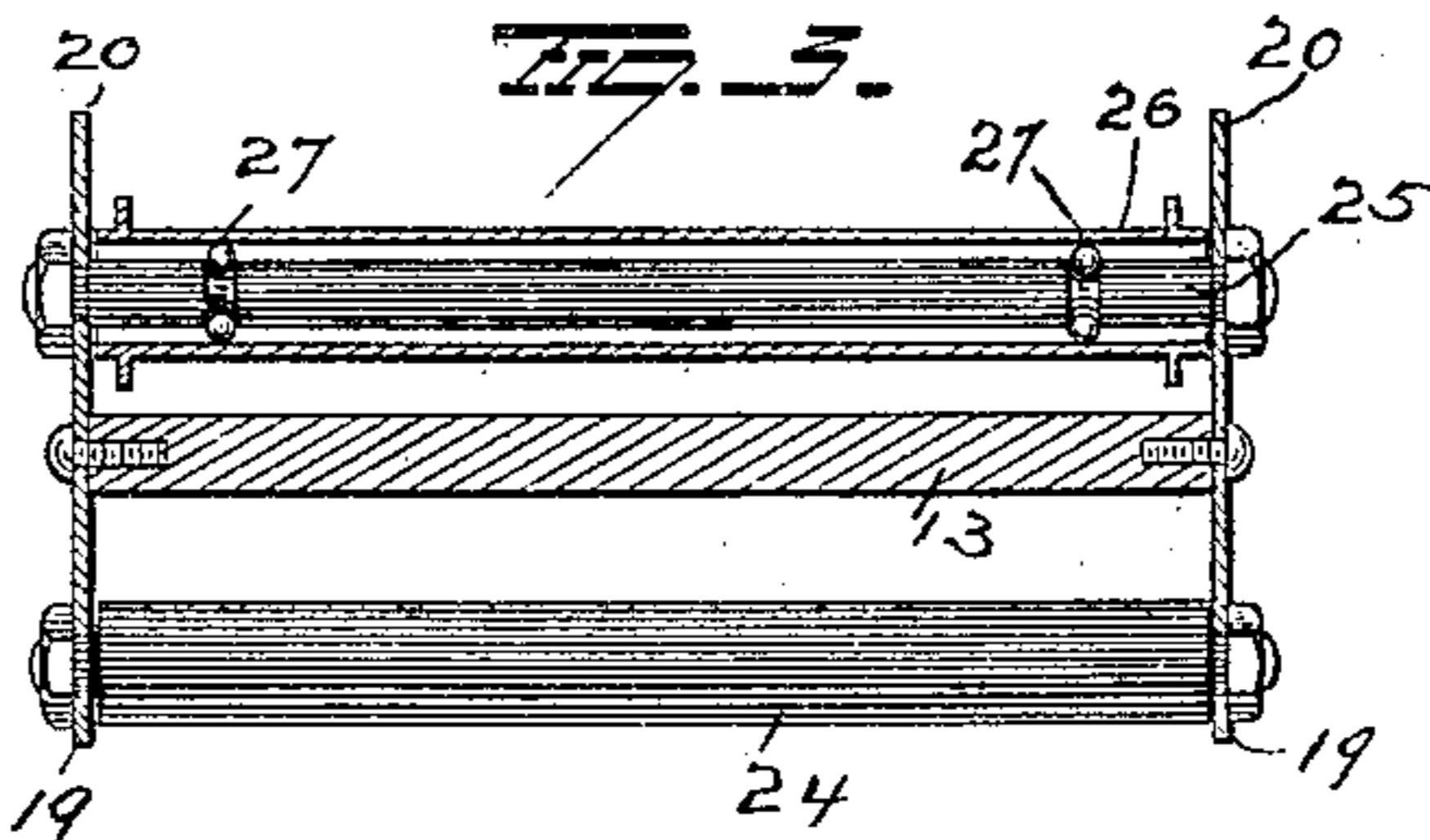
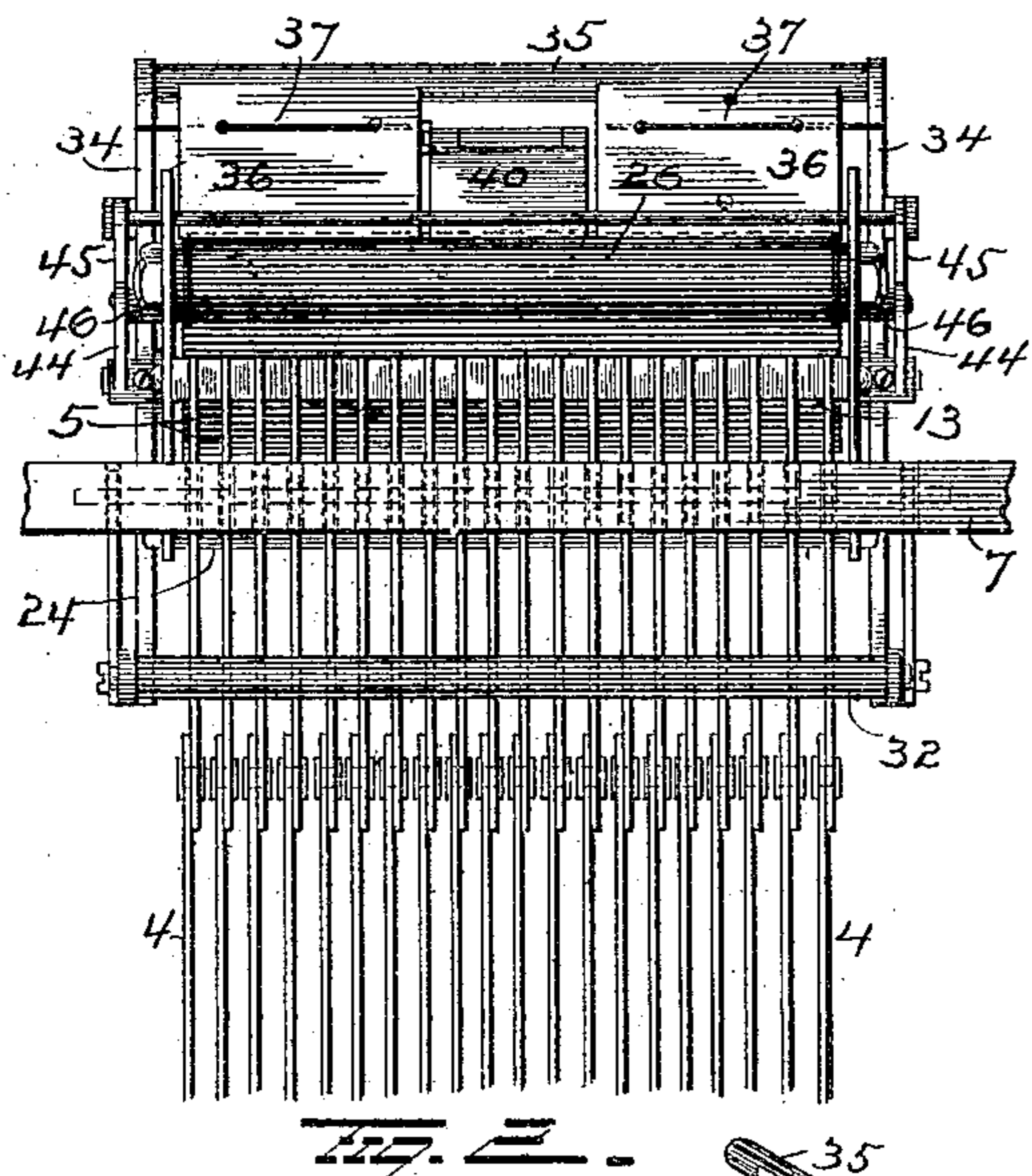
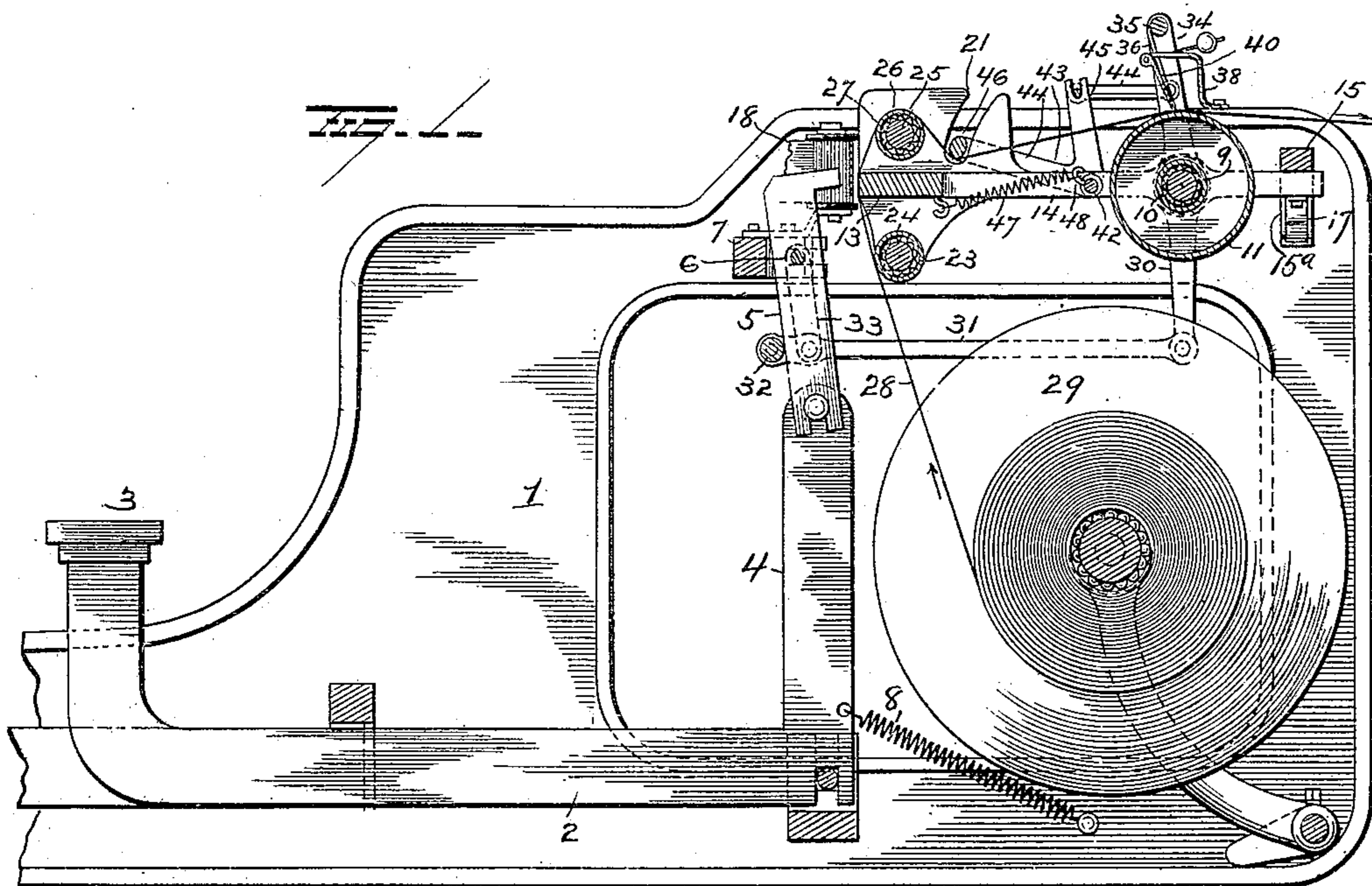


W. S. IRELAND.
TYPE WRITING MACHINE.
APPLICATION FILED APR. 5, 1910.

980,277.

Patented Jan. 3, 1911.



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UNITED STATES PATENT OFFICE.

WARD S. IRELAND, OF DALLAS, TEXAS.

TYPE-WRITING MACHINE.

980,277.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed April 5, 1910. Serial No. 553,499.

To all whom it may concern:

Be it known that I, WARD S. IRELAND, of Dallas, in the county of Dallas and State of Texas, 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 improvements in typewriting machines and more particularly to paper feed mechanism adaptable for use with a stenographic writing machine in which the paper sheet or strip is fed past the platen at each manipulation of a key or keys.

One object of the present invention is to provide simple and efficient means to insure the proper feeding of the paper strip or sheet at each manipulation of the key mechanism.

A further object is to so construct paper feed mechanism of the character specified as to avoid the possibility of the paper being moved past the platen during pressure of the inking ribbon against the paper.

A further object is to construct paper feeding means for a stenographic typewriting machine in such manner that the paper will be fed past the platen after the pressure of the type shall have been completely removed and during the return stroke of the type-bar or lever.

With these objects in view the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawing, Figure 1 is a longitudinal section of a typewriting machine showing an embodiment of my improvement. Fig. 2 is a front view. Fig. 3 is a detail view partly in section showing the guide rollers for the paper strip or sheet. Fig. 4 is a perspective view of the platen frame, and Fig. 5 is a perspective view showing the paper moving and retaining means in section.

1 represents the main frame of the machine in which a series of key-levers 2 are pivotally mounted at one end and provided at their other ends with suitable keys or buttons 3. Arms 4 project upwardly from the pivoted ends of the key-levers and at their upper ends are pivotally connected with

the lower ends of type-levers 5,—the latter being pivotally supported between their ends on a rod 6 mounted in a notched bar 7 secured to the frame of the machine and extending transversely across the same. The type-levers 2 are maintained in and returned to their normal positions, as shown in Fig. 1, by means of springs 8, each having one end connected with a rigid part of the framework and the other end attached to one of the arms 4 of a key-lever a short distance above the pivotal support of the latter,—said springs also serving to maintain the key-levers in and return them to their normal positions.

A rod 9 is located in the upper rear portion of the frame work and extends transversely across the same,—said rod having mounted thereon through the medium of ball bearings 10, a freely rotatable feed roller 11. This rod also supports a platen frame 12,—said platen frame comprising a platen bar 13 disposed in position for co-operation with the type on the type-levers and arms 14 loosely mounted between their ends upon the rod 9, the rear ends of said arms projecting beyond said rods and disposed under a fixed bar 15 secured to the framework and provided with depending arms 15^a. The arms 14 of the platen frame are provided with clips 17 which coöperate with the depending arms 15^a and serve to prevent movement of the platen frame during the normal operation of the machine and thus retain the platen bar always in proper position for coöperation with the type and the paper and inking ribbon. The inking ribbon 18 passes between the type and the platen bar as indicated in Fig. 1, but as the means for operating this inking ribbon forms no part of my present invention, the same will not be shown and described.

The platen frame 12 is provided at each side adjacent to the ends of the platen bar, with depending ears 19 and with upwardly projecting flanges 20, the latter being provided with inclined slots 21. Between the depending ears 19 a rod 22 is secured and has mounted thereon, through the medium of ball bearings 23, a guide roller or cylinder 24. A similar rod 25 is secured between the flanges 20 of the platen frame and on this rod, a guide roller or cylinder 26 is mounted through the medium of ball bearings 27. The guide rollers 23 and 26 are

thus disposed respectively under and above the platen bar and rearwardly of the plane of the active face or edge of said bar, for guiding a paper strip or sheet 28 from a supply reel 29, past said active face of the platen bar. From the upper guide roller 26, the paper sheet or strip extends toward the rear of the machine and passes over the loosely mounted feed roller 11.

Levers 30 are loosely mounted between their ends upon the rod 9 and the depending arms of these levers are connected, by means of rods or pitmen 31 with a transverse rod 32 disposed in front of the depending members of the key-levers,—said rods or pitmen 31 and the rod 32 being sustained by means of links 33 hung on the fulcrum rod 6 of the type-levers. The arms 34 of the levers 30 project some distance above the plane of the feed roller 11 and their upper ends are connected by rods 35. To this rod, the upper edges of two feed plates 36, preferably of spring metal, are secured. These feed plates are disposed in inclined positions and their lower edges terminate in proximity to the feed roller so that when the levers 30 and the rod 35 carried thereby are moved in a direction toward the rear of the machine, said feed plates will cooperate with the feed roller to grip the paper strip or sheet and move the same, but when the feed plate is moved in the reverse direction it will pass over the paper without gripping the same. In order to insure the proper gripping contact of the feed plate 36 with the paper sheet or strip, a spring 37 is attached to said plate and bears against arm 34 of lever 30,—each of the feed plates being, of course, provided with such a spring. An arm or bracket 38 is secured to the main frame 1 and provided with lugs or ears 39 projecting under the rod 35 and between the feed plates 36. An inclined retaining plate or dog 40 is pivotally supported by the lugs or ears 39 and the engagement of its lower edge with the paper strip or sheet is insured by a weighted arm 41 connected with said retaining plate or dog 40. With this construction it will be seen that when the feed plates 36 are moved toward the front of the machine and pass over the paper strip or sheet, the latter will be gripped over the feed roller by the retaining plate or dog 40 and thus movement of the paper sheet or strip while the feeding plates 36 are moving toward the front of the machine will be effectually prevented.

Between the platen bar 13 and the feed roller 11, a rod 42 is mounted loosely in the arms of the platen frame and at or near the respective ends of this loosely mounted rod, bell-crank-levers 43 are secured. The forwardly projecting arms 44 of these bell-crank-levers are preferably longer than the upwardly projecting arms 45 thereof and

said forwardly projecting arms 44 are connected by a transverse rod or bar 46 adapted to enter the slots 21 in the flanges 20 of the platen frame and bear upon the paper so as to depress the latter as shown in Fig. 1. To insure such depression of the paper, a spring 47 is employed and attached at one end to the platen frame and at the other end to a short arm 48 on the loosely mounted rod 42. The upper ends of the arms 45 of the bell-cranks 43 are connected, by means of links 49 with the upwardly projecting arms 34 of the levers 30.

When a key-lever is depressed to actuate a type-lever, the rods or pitmen 31 will be moved toward the front of the machine and the upwardly projecting arms 34 of the levers 30 will be moved toward the rear of the machine. During this movement of the arms 34, motion will be transmitted through the medium of the links 49 to the bell-cranks 43 and the rod or bar 46 carried by the arms 44 of said bell-cranks will be raised and the paper thus slackened. During this same rearward movement of the arms 34 of levers 30, the feed plates 36 carried by the bar 35 will, in its cooperation with the feed roller 11, grip the paper and move the same only a sufficient amount to take up the slack caused by the raising of the bar 46 from the paper. As soon as a key-lever is released and the parts tend to assume their normal positions, (by the action of the spring 47) the retaining plate or dog 40 will at once, in cooperation of the feed roller 11, grip the paper while the feed plates 36 are making their return movement. During the return movement of the parts, the bar 46 carried by the long arms 44 of the bell-cranks 43 and impelled by the action of the spring 47, will bear down upon the paper strip and, as said strip is held firmly at the feed roller by the action of the retaining plate or dog 40, the paper will be drawn from the supply reel 29 and caused to pass over the active face or edge of the platen bar 13 a distance corresponding to the space between two lines of writing. With such construction and arrangement of parts, movement of the paper over the active face or edge of the platen bar while the inking ribbon is being pressed against the paper by a type, will be effectually prevented.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is,—

1. In paper feeding mechanism for type-writing machines, the combination with a platen and a feed roller, of a presser bar to rest upon the paper between the platen and feed roller, means for moving the paper past said feed roller and simultaneously raising said presser bar to slacken the paper between the feed roller and platen, and means cooperating with the feed roller to

grip the paper and hold it stationary when said presser bar descends upon the paper to pull the same past the platen.

2. In a paper feeding mechanism for typewriting machines, the combination with a platen and a feed roller, of a lever, a feed plate connected with said lever and cooperating with the feed roller, a bell-crank, a presser bar carried by said bell-crank and resting upon the paper between the platen and feed roller, means connecting said bell-crank with the first mentioned lever whereby, when the latter is moved in one direction the presser bar will be raised from the paper to slacken the same, and a retaining plate or dog cooperating with the feed roller to grip the paper when said presser bar descends for feeding the paper past the platen.

3. In a paper feeding mechanism for typewriting machines, the combination with a feed roller, a pivoted lever and means for operating the latter, of a rod carried by said pivoted lever over the feed roller, a feed plate secured to said rod and cooperating at its free edge with the feed roller to grip a sheet or strip of paper passing over the latter, and a retaining plate or dog cooperating with the feed roller to grip the paper during the return movement of said feeding plate.

4. In a paper feeding mechanism for typewriting machines, the combination with a feed roller, a pivoted lever and means for operating the latter, of a rod carried by said pivoted lever over the feed roller, a feed plate secured to said rod and cooperating at its free edge with the feed roller to grip a sheet or strip of paper passing over the latter, a presser-bar operable by said lever for feeding the paper past the platen, and a retaining plate or dog cooperating with the feed roller to grip the paper during the return movement of the feed plate and the feeding operation of the presser-bar.

5. In a typewriting machine, the combination with the framework and writing mechanism therein, of a rod mounted transversely in said framework, a feed roller mounted on said rod, levers mounted loosely on said rod, means cooperating with the writing mechanism for actuating said levers, a rod or bar connecting the upper arms of said levers over the feed roller, inclined feed plates secured at their upper edges to said rod or bar and cooperating with the feed roller when moved in one direction to grip the paper and move the same, a retaining plate or dog disposed over the feed roller and cooperating therewith to grip the paper during the return movement of the feeding plates, and a support for said retaining plate or dog secured to the framework of the machine.

6. In a typewriting machine, the combination with writing mechanism and a transverse rod in rear of the writing mechanism, of a feed roller mounted on said rod, a platen frame also mounted on said rod, means for supporting said platen frame in its normal position, guide rollers carried by the platen frame above and below the active face thereof, levers mounted on said transverse rod, and means actuated by said levers for feeding a strip or sheet of paper past said guide rollers and the active face of the platen frame during the return movement of the writing mechanism.

7. In a typewriting machine, the combination with a frame, writing mechanism therein and a platen frame, of a transverse rod mounted in the main frame, a feed roller on said rod, levers mounted on said rod and cooperating with the writing mechanism, a rod or bar connecting the upper arms of said levers over the feed roller, a feed plate carried by said rod or bar and cooperating with the feed roller to grip the paper when moved in one direction, a retaining plate or dog cooperating with the feed roller to grip the paper during the return movement of the feed plate, bell-cranks mounted in the platen frame, a presser bar carried by said bell-cranks to rest upon the paper in rear of the active end of the platen frame, and links connecting said bell-cranks with the first mentioned levers.

8. In a typewriting machine, the combination with type-levers, means for operating them, a platen and a feed roller, of pivoted levers, a bar connecting said pivoted levers over the feed roller, a feed plate secured to said bar and cooperating with the feed roller to grip a strip or sheet of paper when said feed plate is moved in one direction, a rod disposed in the path of movement of the type-levers, pitmen connecting said rod with the first mentioned levers, and means for supporting said last mentioned rod and pitmen.

9. In a typewriting machine, the combination with a feed roller, of oscillatory levers, a rod or bar connecting said levers over the feed roller, feed plates secured at their upper edges to said rod or bar and cooperating with the feed roller to grip a sheet or strip of paper when moved in one direction and pass freely over said sheet or strip when moved in the other direction, a retaining plate or dog disposed between the two plates and cooperating with the feed roller to grip the paper when the feed plates move freely over the latter, and a fixed support for said retaining plate or dog.

10. In a typewriting machine, the combination with a frame, type-bars and means for operating the same, of a transverse rod, a platen frame mounted loosely on said rod, means for normally retaining said platen

frame in operative position, and feeding devices for a paper strip or sheet for moving the latter past the active face of the platen frame.

- 5 11. In a typewriting machine, the combination with a framework and printing mechanism, of a rod in said frame, a feed roller mounted on said rod, a platen frame also mounted on said rod and provided at its
10 forward end with depending ears, a guide roller mounted between said ears, flanges projecting upwardly from the forward portion of the platen frame and provided with slots, a guide roller mounted in said flanges,
15 a rod mounted in the platen frame, bell-cranks secured to said rod, a presser bar carried by the forwardly projecting arms of said bell-cranks to enter the slotted flanges of the platen frame and rest upon a strip
20 or sheet of paper, a spring for moving said bell-cranks in one direction, levers mounted on the first mentioned rod, paper feeding mechanism carried by said levers and cooperating with the feed roller, links con-

necting said levers with the bell-crank levers, and a retaining dog cooperating with the feed roller to prevent retrograde movement of the paper. 25

12. In a typewriting machine, the combination with a feed roller, of pivoted levers, means for oscillating the same, a rod or bar
30 connecting said levers over the feed roller, feed plates carried by said rod or bar and cooperating with the feed roller when moved in one direction to grip a strip or sheet of
35 paper, a fixed bracket, and a retaining dog or plate mounted in said bracket and provided with a weighted arm, said retaining plate or dog cooperating with the feed roller
40 to grip the strip or sheet of paper and prevent retrograde movement of the latter.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

WARD S. IRELAND.

Witnesses:

S. G. NOTTINGHAM,
GEO. F. DOWNING.