

No. 697,676.

Patented Apr. 15, 1902.

C. H. SHEPARD.
TYPE WRITING MACHINE.

(Application filed Jan. 9, 1901.)

(No Model.)

2 Sheets—Sheet 1.

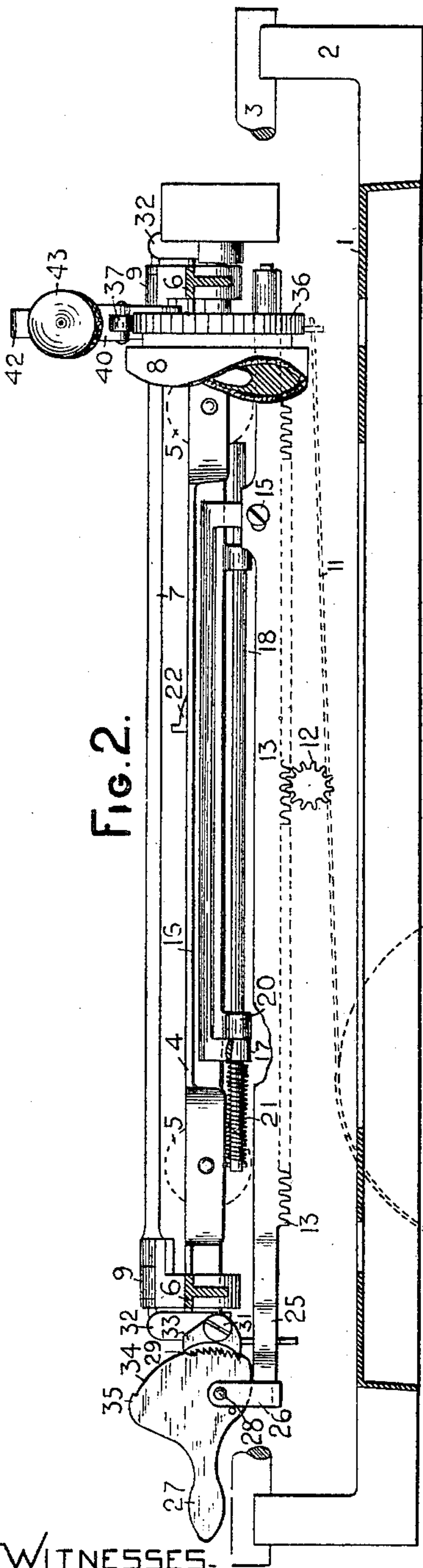
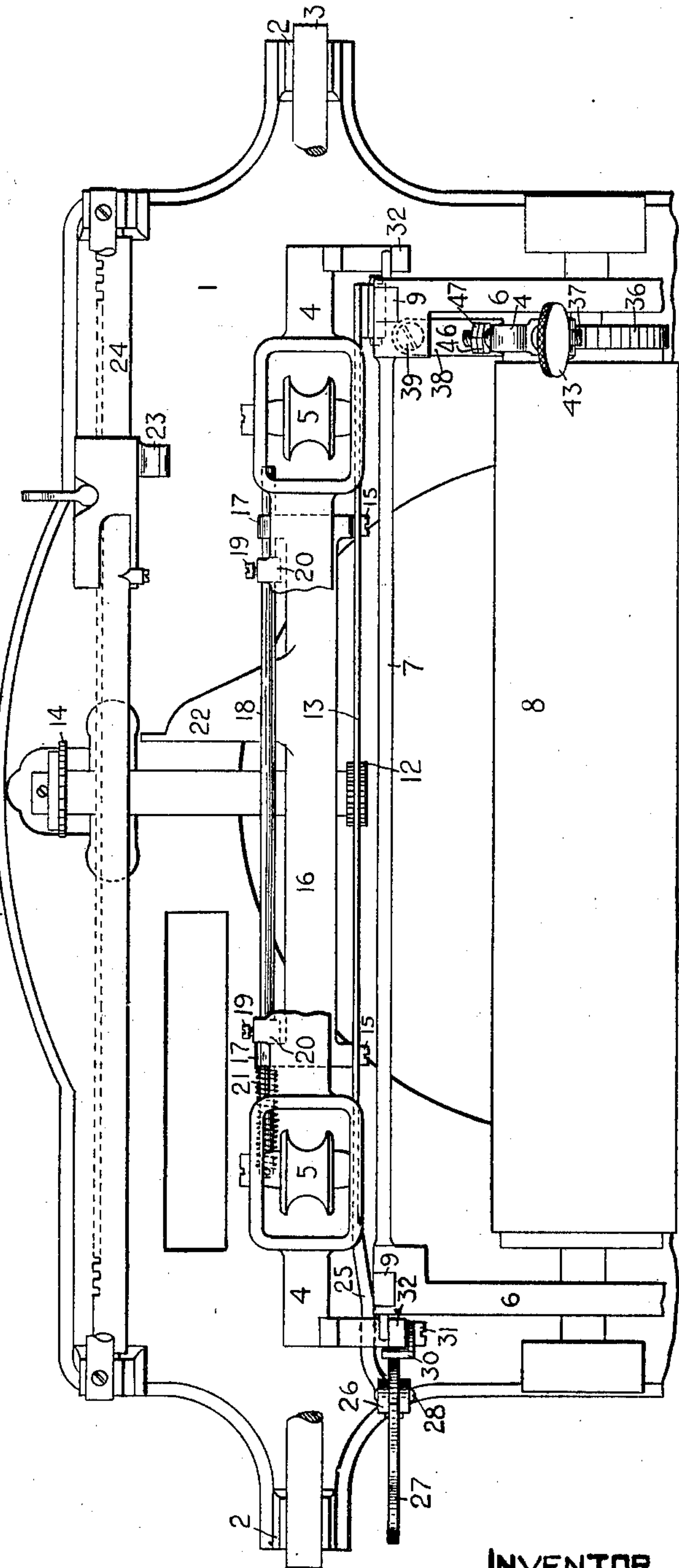


Fig. 2.

Fig. 1.



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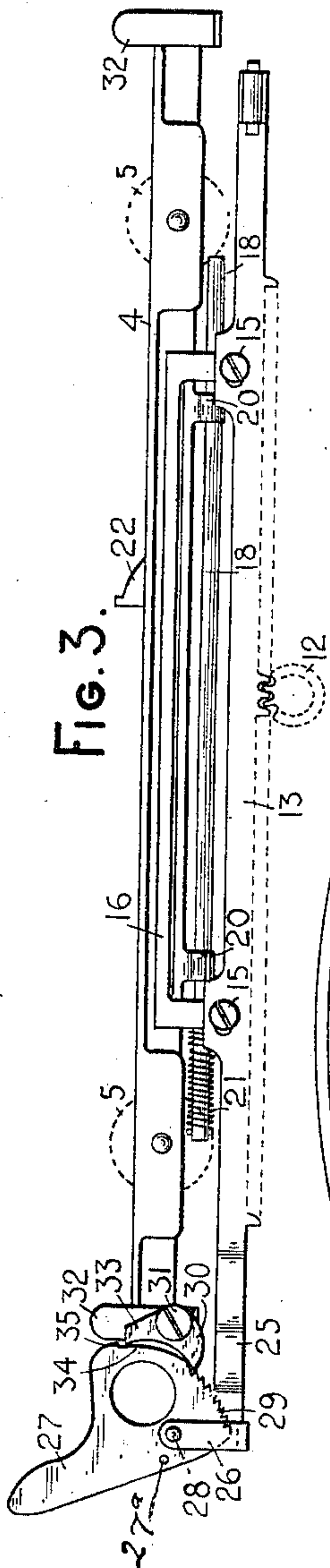


Fig. 3.

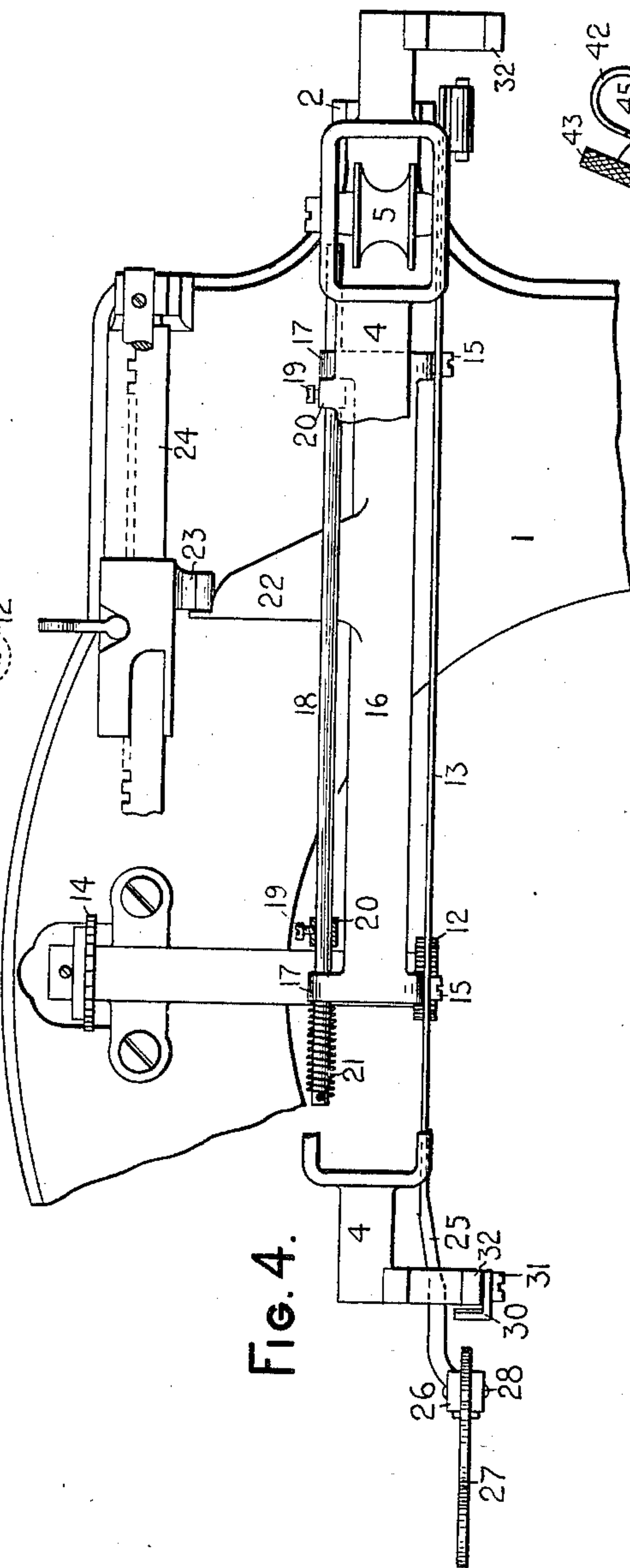


Fig. 4.

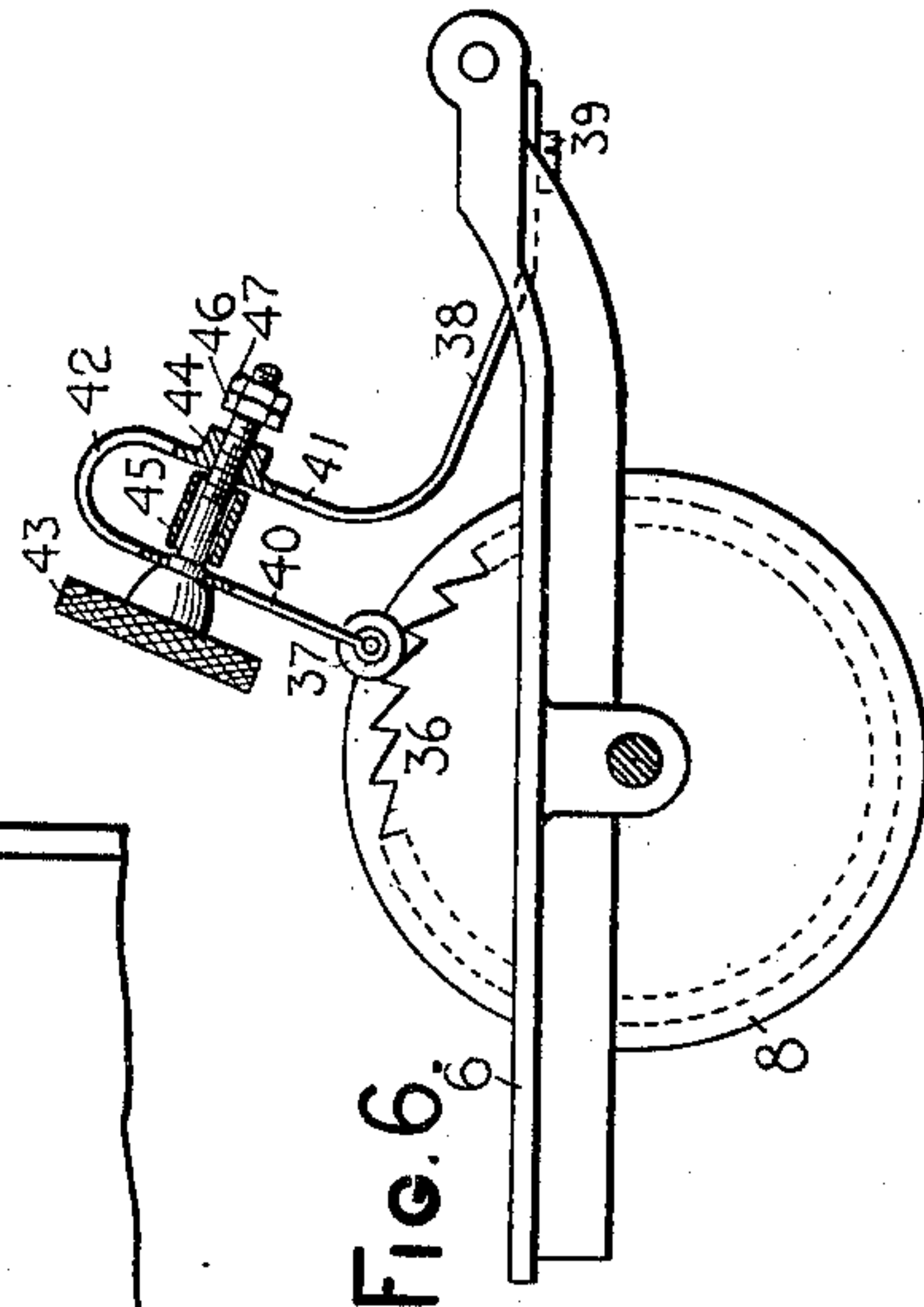


Fig. 6.

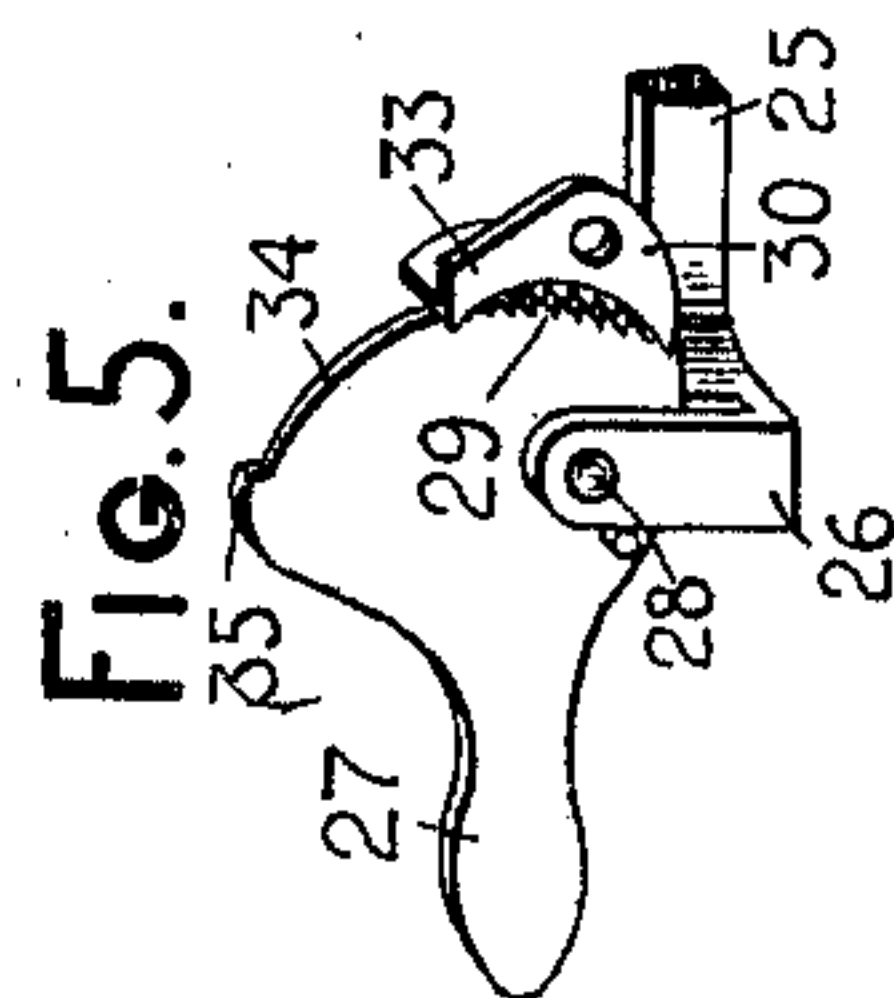


Fig. 5.

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UNITED STATES PATENT OFFICE.

CHARLES H. SHEPARD, OF BROOKLYN, NEW YORK, ASSIGNOR TO WYCKOFF, SEAMANS & BENEDICT, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 697,676, dated April 15, 1902.

Application filed January 9, 1901. Serial No. 42,613. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. SHEPARD, a citizen of the United States, and a resident of the borough of Brooklyn, city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to the carriages and platens of type-writing machines.

The object of my invention is to provide means for adjusting the paper and platen both longitudinally and circumferentially through minute distances, so as to bring any desired spot or line into register with the printing-point, and thus facilitate the making of neat insertions and corrections.

To this end the invention consists in certain features of construction, combinations of devices, and arrangements of parts, all as will be hereinafter fully set forth, and particularly pointed out in the concluding claims.

In the accompanying drawings, Figure 1 is a partial plan of the upper portions of a Remington No. 6 type-writing machine, showing my improvements applied thereto. Fig. 2 is a front sectional elevation of the mechanism shown at Fig. 1. Fig. 3 is a skeleton view similar to Fig. 2, but showing the platen-carriage as having been adjusted longitudinally by my improvement. Fig. 4 is a fragmentary view similar to Fig. 1 and showing how the platen-carriage is automatically released from the control of its endwise-adjusting devices.

Fig. 5 is a perspective view of a lever and pawl for adjusting the platen-carriage endwise. Fig. 6 is a side elevation of a platen and its frame and shows details of mechanism whereby the platen may be adjusted rotatively through minute arcs.

In the several views some parts are omitted or broken away, so as to more clearly disclose the invention, and similar parts are designated by similar numerals of reference.

1 designates a top plate of a writing-machine; 2, ears rising therefrom; 3, a cylindrical rail supported upon said ears; 4, a truck having wheels 5, by which it is guided upon said rail. A frame comprising side bars 6 and a rear connecting-bar 7 carries a cylin-

dricai platen 8 and is connected by a hinge 9 to the truck 4, so that the platen-frame may move longitudinally in unison with the truck, but may shift transversely thereof. The carriage as a whole is propelled by a spring-barrel 10, Fig. 2, which is connected thereto by a strap 11, and the letter-feeding movements of the carriage are controlled by a pinion 12, which meshes with a feed-rack 13, carried by the carriage and is suitably connected to a dog-controlled escapement-wheel 14 in the usual manner. Said rack 13 is fixed by a pair of screws 15 upon a horizontal frame 16, which is hinged by ears 17 upon a horizontal rod 18, the latter being fixed by set-screws 19 in ears 20, formed upon the truck 4. The purpose of hinging said rack-frame 16 is to enable the rack to be lifted out of mesh with the pinion, whereby the carriage is released for rapid movement in either direction. The said rack-frame may also slide endwise upon said rod 18, being held in normal position thereon by a compression-spring 21, which is coiled about the left-hand end of said rod and confined between a pin projecting from the rod and the left-hand ear 17 upon said frame. Projecting rearwardly from said frame is a stop-arm 22, which may engage with a stop 23, the latter being adjustable along a rack 24. Since all of the parts of above mentioned are in use upon said Remington No. 6 machine, it is not necessary to describe them more in detail.

Upon the left-hand end of the carriage-feeding rack 13 I provide a horizontal extension 25, having at its ends upwardly-projecting ears 26, between which is confined an adjusting-lever 27, the latter being pivoted upon a pin 28 passing through said ears. The right-hand or inner working edge of this lever is formed eccentrically of the pivot 28, and preferably I provide upon said eccentric or cam edge a series of ratchet-teeth 29, which are adapted to be engaged by a pawl 30, pivoted by a shouldered screw 31 upon a part 32 of said truck 4. Formed integrally with said pawl and extending upwardly from the pivot 31 is a short arm 33, which is adapted to contact with an untoothed portion 34 of the eccentric lever and is also adapted to engage a

projection 35 at the upper portion of said lever for the purpose of limiting the stroke thereof in one direction, and a pin 27^a, which is carried by the lever and extends to opposite sides thereof, coöperates with the ears 26 to limit the movement of the lever in an opposite direction.

As shown at Figs. 1 and 2, the truck and platen-frame stand in their normal endwise relation to the feeding-rack 13, and hence the platen is at its extreme left-hand position relatively to said rack, which position it occupies during the usual operation of the type-keys. Should it be desired to adjust the paper in a direction longitudinally of the carriage, so as to bring any particular point upon the page to the printing-center, the carriage is first positioned by means of the usual space-key or release-key to a place where the desired point upon the paper is nearly coincident with the printing-center of the machine, said point upon the paper being brought, however, a little past or to the left of said center. Then the lever 27 is raised, causing the working edge thereof to turn downwardly upon the pivot 28, whereby owing to the eccentric contour of said working edge the carriage is cammed slightly to the right, the rack remaining stationary. It will be understood that as far as this camming action is concerned the teeth 29 are not important, as the carriage could be as readily cammed in the described manner if no teeth were cut upon the cam; but the teeth are preferred, as will presently appear. Owing to the engagement of the point 30 of the pawl with said cam edge at a point below the pivot 31 and the simultaneous engagement of the arm 33 at a point above said pivot, it will be seen that said pawl operates as a pivoted shoe as far as the operation of moving the carriage relatively to the feed-rack endwise is concerned. It will also be perceived that the platen may be adjusted through very minute distances, as the entire swing of the cam-lever is preferably just sufficient to move the carriage through an entire letter-space, though obviously it is immaterial how many letter-space distances the lever may be capable of adjusting the carriage so long as it affords an adjustment thereof throughout fractions of a letter-space distance. The pawl 30 engages the teeth 29 and prevents the carriage from moving to the left from its adjusted position by reason of the tension of the spring-drum 10. If ten teeth are cut in said cam edge, it is evident that the carriage may be adjusted through intervals of one one-hundredth of an inch, which is one-tenth part of the usual letter-space of one-tenth of an inch. This adjustment is sufficiently minute for practical purposes, although, if desired, still finer teeth may be cut, or any other suitable detent may be provided for maintaining the platen in its adjusted position while the type impression is being made.

The fine endwise or longitudinal adjust-

ment of the platen may be preserved during as many type impressions as desired; but when it is desired to restore the platen to its original position relatively to the rack the carriage may be pressed slightly to the right, so as to withdraw the pawl 30 from the teeth 29 and permit the cam-lever to drop to its normal position.

At the final portion of each return stroke of the carriage for beginning a new line the rack-frame 16 is arrested by contact of its stop-arm 22 with the adjustable stop 23, while the stroke of the carriage is slightly prolonged, so that the pawl 30 is automatically withdrawn from the cam-lever, as illustrated at Fig. 4, and the lever is hence enabled to drop to normal position. As usual on said machine, the platen-carriage resumes its normal position relatively to the rack at the beginning of each line of writing, owing to the tension of the spring-drum 10, so that it will be seen that the carriage is freed from the control of the described adjusting device, and the latter is automatically returned to normal position at the back stroke of the carriage, so that the adjusting device is always ready for use.

Referring now to Figs. 1, 2, and 6, I arrange in engagement with the teeth 36 of the usual line-space wheel a detent-roller 37, which is mounted upon the free end of a spring-arm 38, the latter being secured by a screw 39 to the rear portion of the platen-frame. At a point between its ends said spring 38 is bent into a U shape, the parallel arms of the U being indicated, respectively, as 40 and 41 and the curved portion thereof as 42. The purpose of this U formation is to enable said arms 40 and 41 to be either brought toward each other or separated a trifle, and thus, in effect, shorten or extend the spring-arm 38, whereby the detent-roller 37 may be adjusted away from or toward the point 39, where it is supported upon the platen-frame, and thus effect minute rotative adjustments of the line-space wheel and the platen to which it is connected. For this purpose I preferably employ a transversely-arranged thumb-screw 43, the shank whereof transfixes both of said arms 40 and 41, the arm 41 having an internally-threaded boss or nut 44, which is engaged by the threaded end of the screw, so that by merely turning the latter either in or out the arms 40 41 may be caused to approach or recede slightly, the separation occurring by reason of the resiliency of the curved portion 42 of the spring. It will be understood that it is not necessary that the detent 37 should be adjustable through a space greater than a single line-space, and hence I provide upon the shank of the screw a stop-sleeve 45, which limits the movement of the arms 40 and 41 toward each other, and upon the projecting end of the screw a stop-nut 46, which limits the separation or expansion of the arms 40 and 41, said nut 46 being provided with a lock-nut 47. The amount of play afforded between the sleeve or collar 45 and the stop-nut 46 is pref-

erably a trifle less than the space occupied by one of the teeth 36 of the line-space ratchet-wheel.

In operation the line or point upon the paper is brought into proximity with the usual platen-scale by rotating the platen in the usual manner, and then said point or line is adjusted accurately to the scale by means of the thumb-screw 43, which is turned in one direction or the other, according as it is found necessary to move the paper forward or backward in order to bring the desired point or line thereon into alinement with the platen-scale or into register with the usual pointer, if one be employed.

Prior to my invention it has been customary to adjust the paper by pulling it backwardly around the platen or edgewise longitudinally of the platen; but this method is objectionable, because the paper is awkward to handle and liable to tear and because much skill and experience are necessary before the adjustment can be performed quickly, neatly, and accurately. By means of my invention the paper may be inserted in the machine, and the required point or line thereon after being brought into proximity to its desired position may by means of the lever 27 and the thumb-screw 43 be adjusted in any direction without the necessity of touching the paper itself.

Many changes in details of construction and arrangement of parts may be made within the scope of the invention, and one of the improvements may be used without the others.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine, the combination of a carriage, a feeding-rack and platen therefor, a pivoted lever, and means cooperating with said lever for effecting minute longitudinal adjustment of the platen relatively to the feed-rack.

2. In a type-writing machine, as a means for adjusting the paper, the combination of a carriage, a feeding-rack therefor, a lever and cam interposed between said rack and carriage for adjusting one relatively to the other.

3. In a type-writing machine, the combination of a carriage, a feeding-rack therefor, a cam supported upon one of said carriage-and-rack elements, and a cooperating shoe pivoted upon the other of said carriage-and-rack elements.

4. In a type-writing machine, as a means for adjusting the paper, the combination of a carriage, a feeding-rack therefor, an intermediate cam, a set of ratchet-teeth, and a pawl.

5. In a type-writing machine, the combination of a carriage, a feeding-rack therefor, an intermediate pivoted cam whose working edge is provided with ratchet-teeth, and a pawl adapted to said teeth.

6. In a type-writing machine, the combination of a carriage, a feeding-rack therefor, an intermediate pivoted cam-lever whose work-

ing edge is provided with ratchet-teeth, and a pivoted shoe opposed to said cam, one point of said shoe being adapted to enter said teeth to detain said cam-lever in its adjusted position.

7. In a type-writing machine, the combination of a carriage, means for adjusting said carriage through minute distances in letter-space direction and holding it in its adjusted position, and means for automatically releasing the carriage from the control of said adjusting means.

8. In a type-writing machine, the combination of a carriage, means for adjusting said carriage through minute distances in letter-space direction, and means operating automatically at the return of the carriage to the beginning of the line, for releasing said carriage from the control of said adjusting means.

9. In a type-writing machine, the combination of a carriage, a feeding-rack therefor, said carriage being movable relatively to said rack in a longitudinal direction, a cam-lever having ratchet-teeth and mounted upon said rack, a pawl mounted upon said carriage, and a stop for arresting said rack during the final portion of the return movement of the carriage for beginning a new line, whereby said cam-lever and said pawl are separated.

10. In a type-writing machine, the combination of a carriage, shoe 30 pivoted thereon, a rack relatively to which said carriage is edgewise movable, lever 27 pivoted upon said rack and having teeth 29 formed upon its working cam edge 34, stops 27^a and 35 upon said lever, and stop 23 for arresting said rack.

11. In a type-writing machine, the combination of a cylindrical platen, a line-space wheel, a spring-pressed detent for said wheel and which is normally in contact therewith, and means for adjusting the spring of said detent through minute distances.

12. In a type-writing machine, the combination of a carriage, a feed-rack which is carried by said carriage, the carriage and feed-rack being movable independently one of the other in the direction of the travel of the carriage and hand-operated means for adjusting the carriage relatively to the feed-rack and in the direction of the travel of the carriage for fractions of a letter-space distance.

13. In a type-writing machine, the combination of a carriage, a feed-rack which is carried by said carriage, the carriage and feed-rack being movable independently one of the other in the direction of the travel of the carriage, hand-operated means for adjusting the carriage relatively to the feed-rack and in the direction of the travel of the carriage for fractions of a letter-space distance, and means for automatically restoring the carriage and rack to their normal relative positions when the carriage is restored to the right to begin a new line of writing.

14. In a type-writing machine, the combination of a cylindrical platen, a line-space

wheel, a detent which is normally in contact with said wheel, a spring which carries said detent, and a screw for adjusting said spring.

15 In a type-writing machine, the combination of a cylindrical platen, a line-space wheel, a platen-frame, an extensible spring-arm mounted upon said platen-frame, and a detent carried upon the free end of said arm and engaging said line-space wheel.

10 16. In a type-writing machine, the combination of a cylindrical platen, a line-space wheel, a spring-arm, a detent thereon, and a screw upon said arm for moving said detent minute distances.

15 17. In a type-writing machine, the combination of a platen, a line-space wheel, spring-arm 38, a portion of which is bent into U form, detent-roller 37, and transverse screw 43.

20 18. In a type-writing machine, the combination of a platen, a line-space wheel, spring-arm 38, a portion of which is bent into U form, detent-roller 37, transverse screw 43, and stops 45 and 46.

25 19. In a type-writing machine, the combination of a platen, a line-space wheel, spring device 38, 40, 41, 42, detent-roller 37, screw 43, sleeve 45, nut 46, and nut 47.

30 20. In a type-writing machine, the combination of a platen, a carriage, means for adjusting said carriage through fractions of a letter-space distance in the direction of the travel of the carriage and means for adjusting said platen through fractions of a line-

space distance circumferentially, whereby the paper upon the platen may be adjusted in two 35 directions relatively to the printing-center.

21. In a type-writing machine, the combination of a platen, a carriage therefor, hand-operated means for adjusting the carriage in the direction of its travel throughout frac- 40 tions of a letter-space distance, and independent hand-operated means for turning the platen fractions of a line-space distance, whereby the platen may be adjusted in two 45 directions at right angles to each other and relatively to the printing-point.

22. In a type-writing machine, the combination of a carriage, a platen carried thereby, a feed-rack which is carried by said carriage, the carriage and rack being movable inde- 50 pendently one of the other in the direction of the travel of the carriage, hand-operated means for adjusting the carriage relatively to the feed-rack and in the direction of the travel of the carriage for fractions of a letter- 55 space distance, and independent hand-operated means for turning the platen fractions of a line-space distance.

Signed at the borough of Manhattan, city of New York, in the county of New York and 60 State of New York, this 8th day of January, A. D. 1901.

CHARLES H. SHEPARD.

Witnesses:

K. V. DONOVAN,
E. M. WELLS.