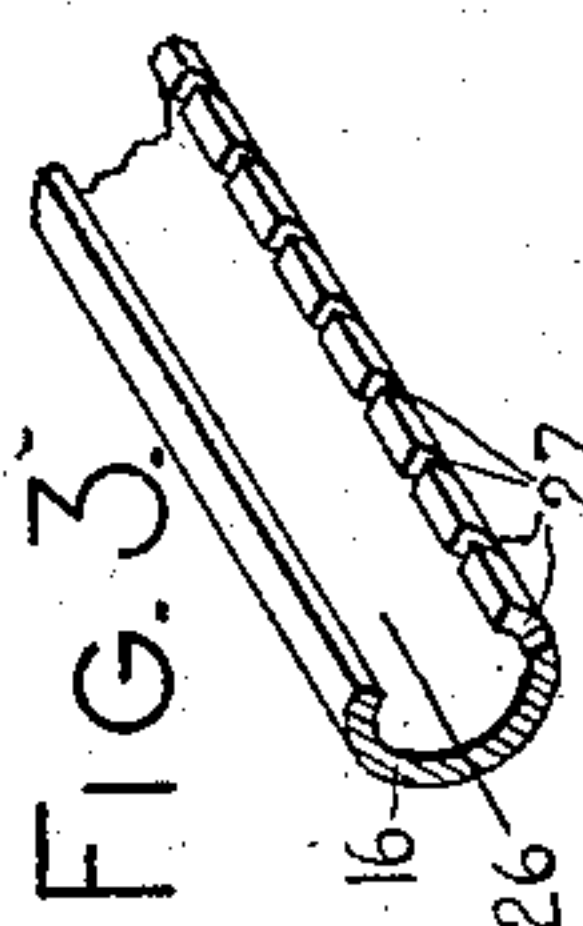
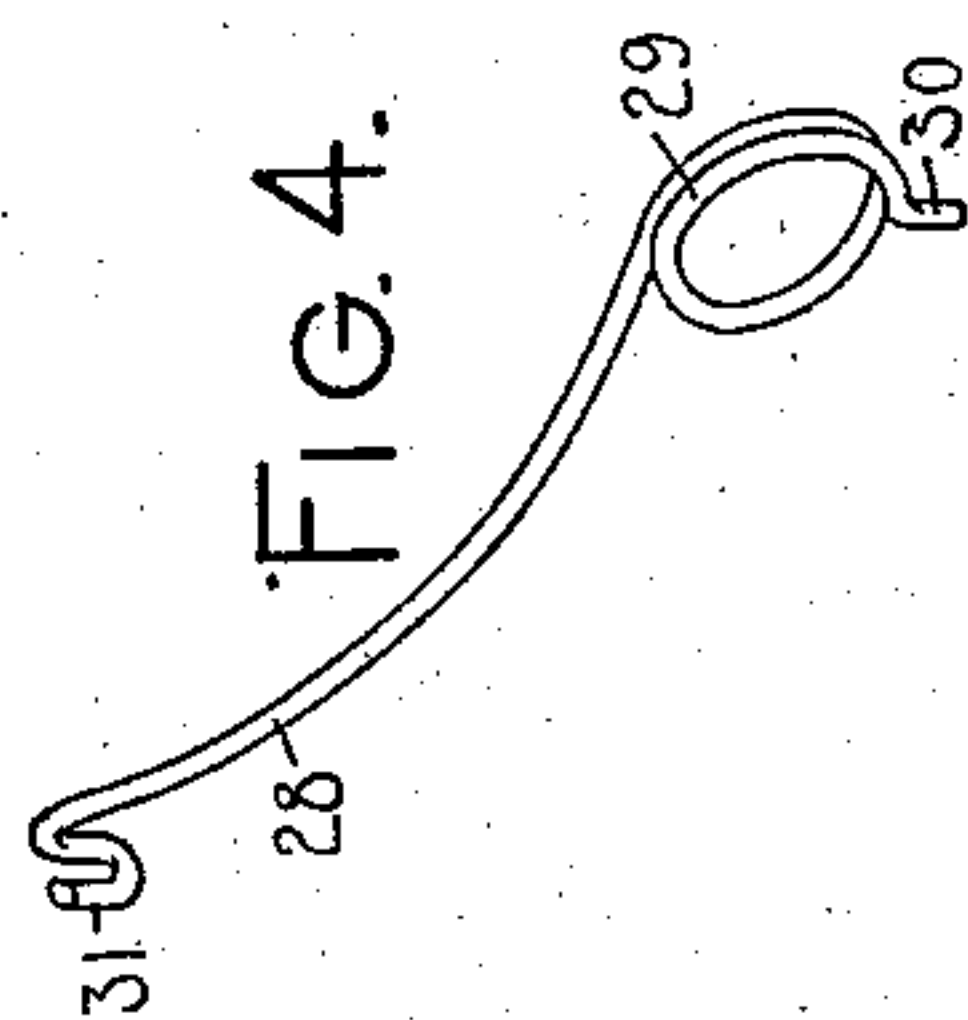
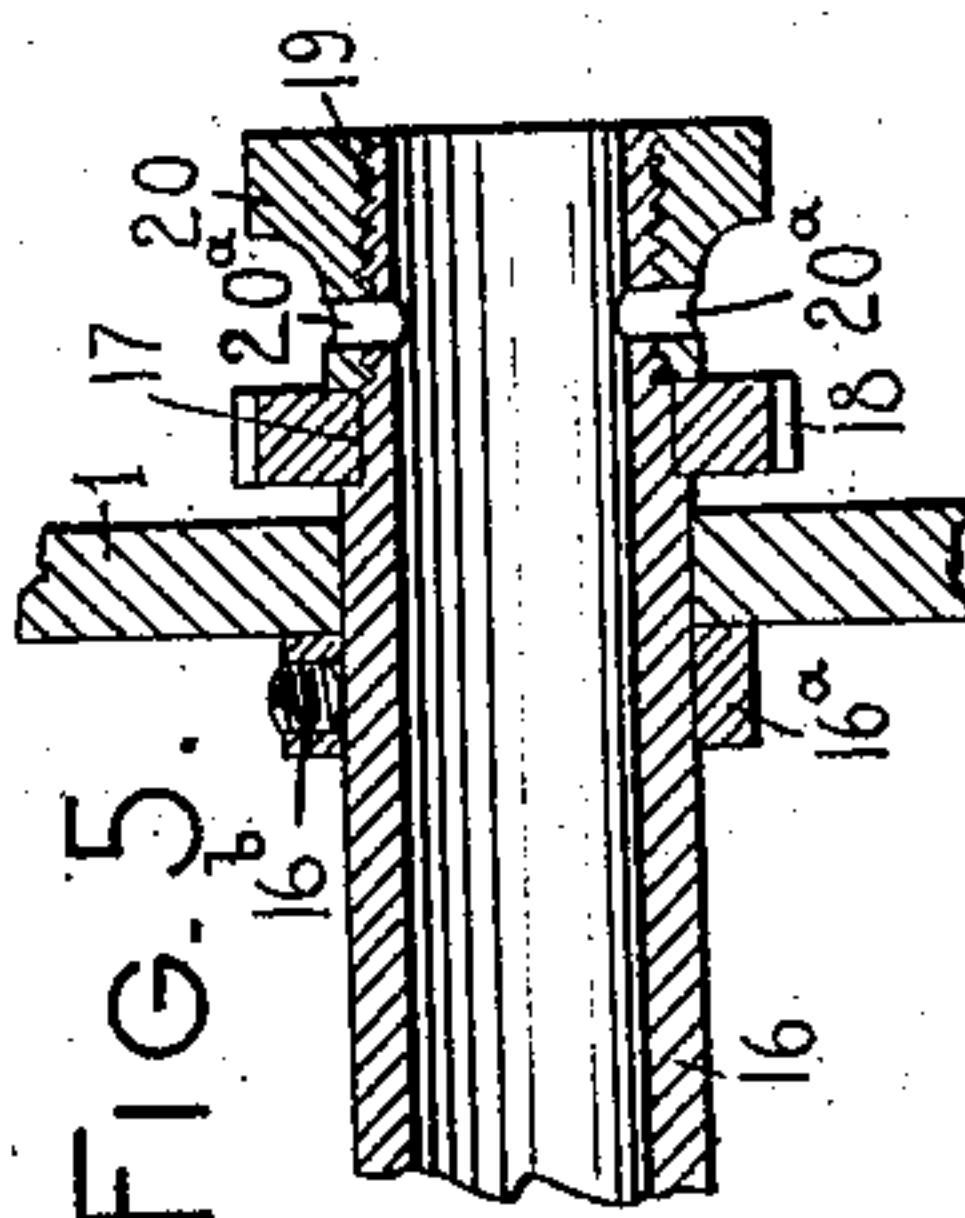
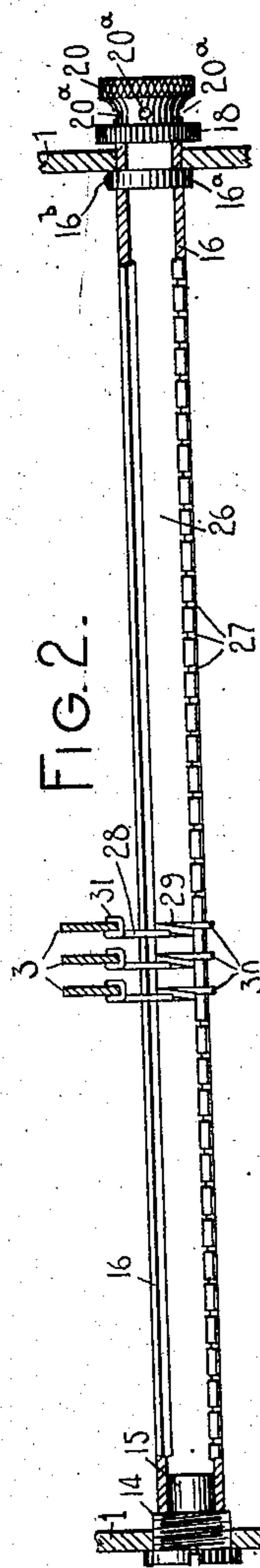
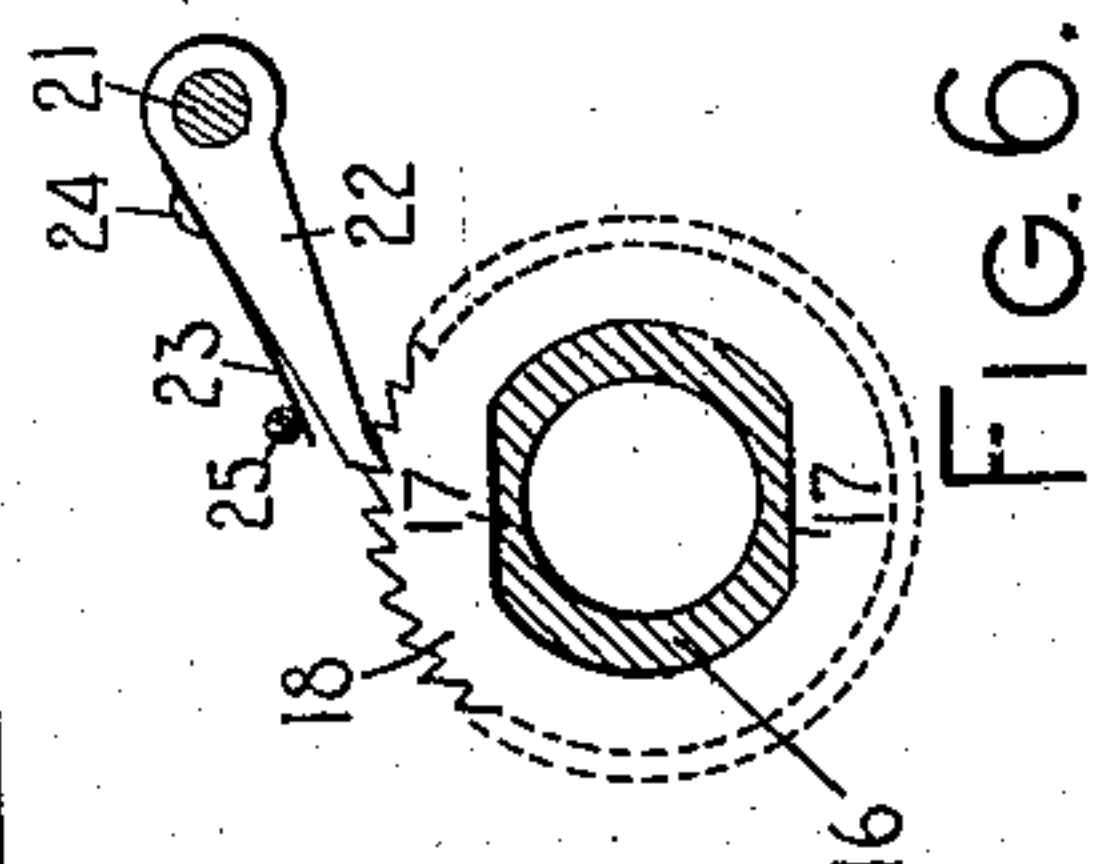
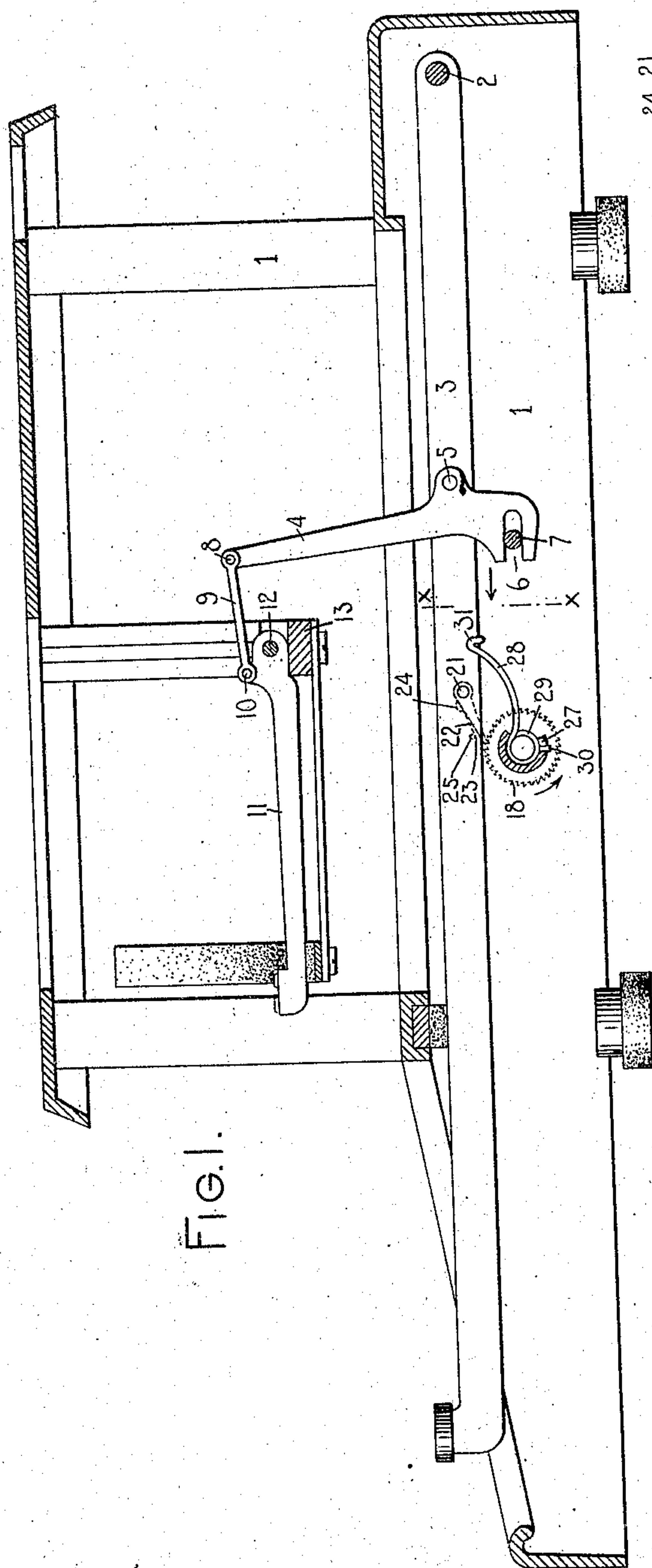


No. 815,565.

PATENTED MAR. 20, 1906.

B. C. STICKNEY.
TYPE WRITING MACHINE.
APPLICATION FILED AUG. 4, 1903.



WITNESSES:

R. V. Donovan.
Charles Smith

INVENTOR:

Burnham C. Stickney
by *Jacob F. Fabel*
HIS ATTORNEY

UNITED STATES PATENT OFFICE.

BURNHAM C. STICKNEY, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO
UNION TYPEWRITER COMPANY, OF JERSEY CITY, NEW JERSEY, A
CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

No. 815,565.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed August 4, 1903. Serial No. 168,246.

To all whom it may concern:

Be it known that I, BURNHAM C. STICKNEY, a citizen of the United States, and a resident of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to type-writing machines, and more particularly to tension-adjusting means therefor; and one of the main objects of said invention is to provide simple and efficient means for simultaneously varying or adjusting to a like degree the tension of a plurality of springs.

To the above and other ends, which will hereinafter appear, my invention consists of the features of construction, arrangement of parts, and combinations of devices to be hereinafter described, and particularly pointed out in the appended claims.

In the accompanying drawings, wherein like reference characters designate like parts in the various views, Figure 1 is a vertical front-to-rear sectional view of one form of type-writing machine embodying my invention. Fig. 2 is a detail transverse sectional view of a portion of the machine with parts broken away, the view being taken on the line *x x* of Fig. 1 and looking in the direction of the arrow adjacent to said line. Fig. 3 is a fragmentary detail perspective view of the carrier for the spring. Fig. 4 is a detail perspective view of one of the springs. Fig. 5 is an enlarged fragmentary detail longitudinal sectional view taken through the right-hand end of the carrier or shaft for the springs. Fig. 6 is a detail side view of the pawl-and-ratchet devices employed for maintaining the carrier or shaft in the position to which it is adjusted.

The frame 1 of the machine supports a pivot-rod 2 for the key-levers 3. Each key-lever has a sublever 4 pivoted thereto at 5, the lower end of said sublever being slotted at 6 for the reception of a fulcrum-bar 7, whereas the upper end of the sublever is pivoted at 8 to a draw-link 9, that in turn is pivoted at 10 to a type-bar 11, the various type-bars being pivoted upon a pivot-wire 12, supported in a segment 13.

While one character of type-actions has been specifically described, it should be un-

derstood that the invention is in no sense restricted to the character of type-action employed.

One side of the frame of the machine is tapped for the reception of a screw 14, which is provided with a bearing 15 at the inner end thereof, said bearing being adapted to support one end of a hollow or tubular shaft or carrier 16, the opposite end of which is seated in an aperture in the opposite side of the frame which constitutes a bearing for the other end of the carrier or shaft. A collar 16^a is seated on the shaft inside the frame of the machine and is secured in position on the shaft by a set-screw 16^b, thus preventing a displacement of the shaft from its bearings. The shaft extends transversely of the series of key-levers 3 and at one end thereof projects beyond the side of the frame of the machine, as illustrated in Fig. 2, and is flattened at two sides thereof, as indicated at 17 in Fig. 6. A ratchet-wheel 18 has a bore that corresponds to the contour of the shaft or carrier where it extends beyond the side or frame of the machine and is adapted to be seated thereon, so that the ratchet-wheel and shaft are connected to turn together. The shaft extends beyond that portion on which the ratchet-wheel is seated and is exteriorly threaded at 19 for the reception of a finger-piece or knurled head 20, by means of which the shaft can be turned to afford the desired adjustment; but, if desired, the shaft may be turned by means of a pin fitted into a capstan-hole 20^a either in the shaft or in the knob. Pivoted to the framing 1 of the machine at 21 is a pawl 22, which has a leaf-spring 23 secured thereto at 24, the free end of said spring bearing against a fixed pin 25 and tending to maintain the nose of the pawl in engagement with the teeth of the ratchet-wheel, so that the ratchet-wheel and shaft may be maintained in the position to which turned. The shaft 16 has a longitudinal slot 26 therein, and one wall of said slot is provided with a series of notches, apertures, or depressions 27, that are spaced at equal distances apart and correspond substantially to the spacing of the key-levers. The width of the slot is preferably less than the greatest diameter of the bore of the hollow shaft, so that the slot forms a contracted mouth through which one end 28 of each of the key-

lever-restoring springs may extend, as represented in Fig. 1, and so that the coil or loop 29 of each spring may be seated within the hollow shaft and confined against withdrawal through the longitudinal slot. Each restoring-spring has one end thereof formed as a finger 30, which is adapted to project into one of the recesses 27 in the shaft in order to connect one end of the spring thereto and to provide means for properly maintaining the springs spaced apart, as illustrated in Fig. 2. The end of the arm 28 of each wire spring is bent into U form, as indicated at 31, for the reception of a key-lever.

From the foregoing description it will be understood that by turning the knurled head or finger-piece 20 a simultaneous adjustment of the tension of all of the restoring-springs may be effected and that the tension of all the springs will be adjusted to a like degree. If, for instance, it is desired to place more tension on the springs, the shaft or carrier is turned in the direction of the arrow in Fig. 1 to the desired extent, and the pawl 22 will cooperate with the ratchet-wheel to maintain the carrier or hollow shaft in the position to which it has been adjusted. If, on the other hand, the tension on the springs is to be decreased, the pawl 22 may be disengaged from the teeth of the ratchet-wheel 18, while the knurled head 20 is grasped and a turning of the shaft to the desired extent in a direction opposite to that indicated by the arrow in Fig. 1 may be permitted. The pawl is then released, and the shaft or carrier will be maintained in the position to which it is adjusted.

From the foregoing description it will be seen that I have provided a simple, cheap, and efficient device for mounting the various restoring-springs for the key-levers and for simultaneously effecting an adjustment of all of them to a like degree and that the provision of means on the outside of the framing of the machine affords access to the hollow shaft or carrier for the springs in order that the adjustment of the tension thereof may be readily effected.

Various changes in details of construction may be made without departing from the spirit of my invention.

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

1. In a type-writing machine, the combination of type-actions, a hollow or tubular rock-shaft, means for turning said rock-shaft, and a plurality of springs seated in said hollow shaft and each connected to said shaft and to an element of a type-action.

2. In a type-writing machine, the combination of type-actions, a hollow or tubular adjustable carrier, and a series of springs, each having a coil or loop contained in said hollow carrier and each connected to said carrier and to an element of a type-action.

3. In a type-writing machine, the combination of type-actions, a hollow shaft, means for turning said shaft and a series of springs, each having a coil or loop contained in said hollow shaft and each having one end connected thereto and the other end connected to an element of a type-action.

4. In a type-writing machine, the combination of type-actions, a hollow shaft that has a longitudinal slot therein, means for adjusting said shaft, and a series of springs each of which has a coil or loop that is seated in said hollow shaft and with one end of each spring connected to the shaft and the other end projecting through the longitudinal slot therein and connecting with an element of a type-action.

5. In a type-writing machine, the combination of type-actions, an adjustable carrier that has an open longitudinal slot therein with regularly-spaced notches or recesses in one wall of said slot, and a series of springs each of which has one end seated in a notch or recess in the carrier and the other end projecting through the longitudinal slot and connecting with an element of a type-action.

6. In a type-writing machine, the combination of type-actions, a hollow shaft that has an open longitudinal slot therein with regularly-spaced notches or recesses in one wall thereof, means for turning said shaft and for retaining it in the position to which it is turned, and a series of springs, each of which has a coil or loop that is contained within the shaft, one end of each spring being seated in a notch in the shaft and the other end projecting through the longitudinal slot therein and connecting with an element of a type-action.

7. In a type-writing machine, the combination of a hollow carrier which extends from side to side of the machine and is adapted to turn in bearings therein, a finger-piece which is connected to the carrier and extends outside of the frame of the machine, means for retaining the carrier in its adjusted position, and a series of springs each of which is provided with a coil or loop that is contained in the hollow carrier and has one end connected to said carrier, whereby an adjustment of the carrier will effect a simultaneous adjustment of the tension of all of said springs.

8. In a type-writing machine, the combination of a hollow rock-shaft which extends from side to side of the machine and is adapted to turn in bearings therein, said shaft having a longitudinal slot therein with a series of notches in one wall of said slot, a finger-piece which is connected to the shaft and extends outside of the frame of the machine, means for retaining the shaft in its adjusted position, and a series of springs each of which is provided with a coil or loop that is contained in the hollow shaft and has one end seated in a notch therein whereas the other end ex-

tends through the slot in the shaft, whereby an adjustment of the shaft will effect a simultaneous adjustment of the tension of all of said springs.

5 9. In a type-writing machine, the combination of a series of key-levers, a hollow adjustable carrier that extends transversely thereof, and a series of key-lever-restoring springs, each spring having a coil that is seated within said carrier, and one end of each spring being connected to the carrier whereas the opposite end is connected to a key-lever.

10. In a type-writing machine, the combination of a series of key-levers, a shaft that extends transversely of said key-levers and projects beyond the frame of the machine where it is provided with a finger-piece for turning it, a ratchet-wheel secured to the shaft, a cooperating pawl carried by a fixed portion of the machine, and a series of springs, each connected to a key-lever and to said shaft.

11. In a type-writing machine, the combination of a series of key-levers, a hollow shaft extending transversely of the key-levers and seated to turn in bearings in the frame of the machine, means connected to said shaft for turning it, a ratchet-wheel for said shaft, a pawl that coöperates with said ratchet-wheel,

and a series of springs, each provided with a coil or loop that is contained within said hollow shaft and each spring being connected at one end to a key-lever and at the opposite end to said shaft.

12. In a type-writing machine, the combination of a series of key-levers, a hollow shaft extending transversely of the key-levers and seated to turn in bearings in the frame of the machine and having a longitudinal slot therein with a series of recesses in one wall of said slot, means connected to said shaft and extending beyond the frame of the machine for turning the shaft in its bearings, a ratchet-wheel for said shaft, a pawl that coöperates with said ratchet-wheel, and a series of springs, each provided with a coil or loop that is contained within said hollow shaft and each spring having one end seated in one of said recesses and the opposite end connected to a key-lever.

Signed in the borough of Manhattan, city of New York, in the county of New York and State of New York, this 30th day of July, A. D. 1903.

BURNHAM C. STICKNEY.

Witnesses:

MARIE F. HANNWEHER,
E. M. WELLS.