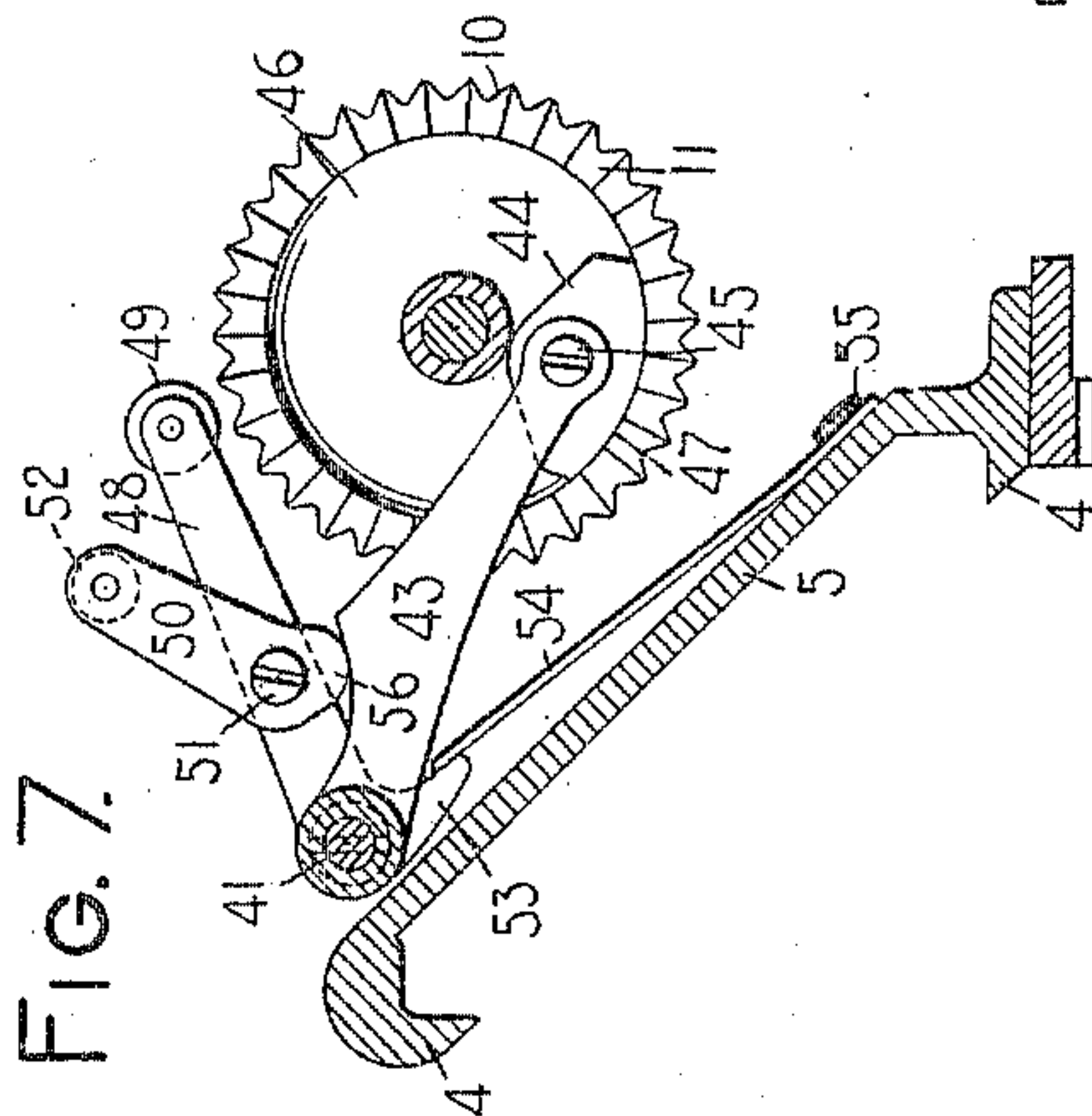
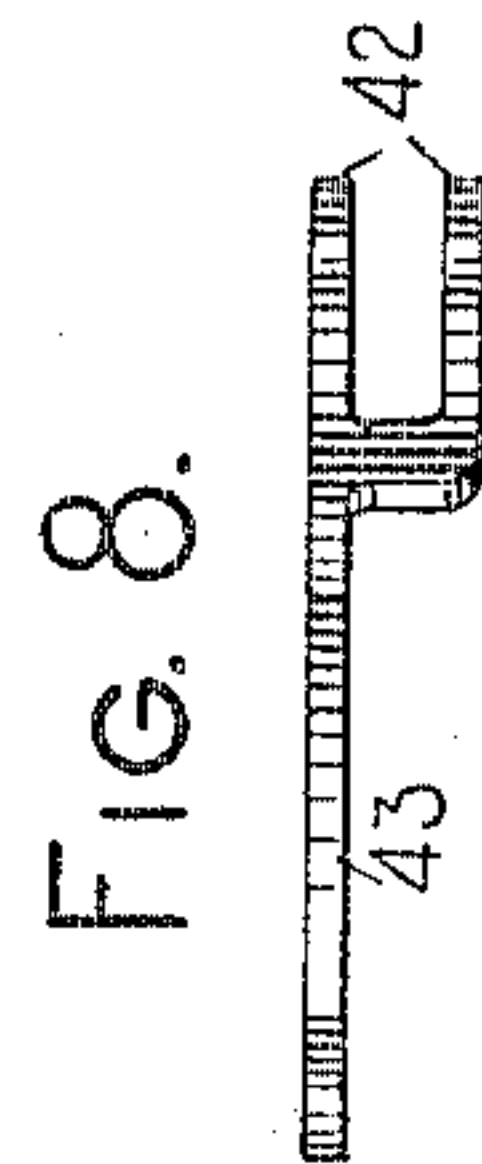
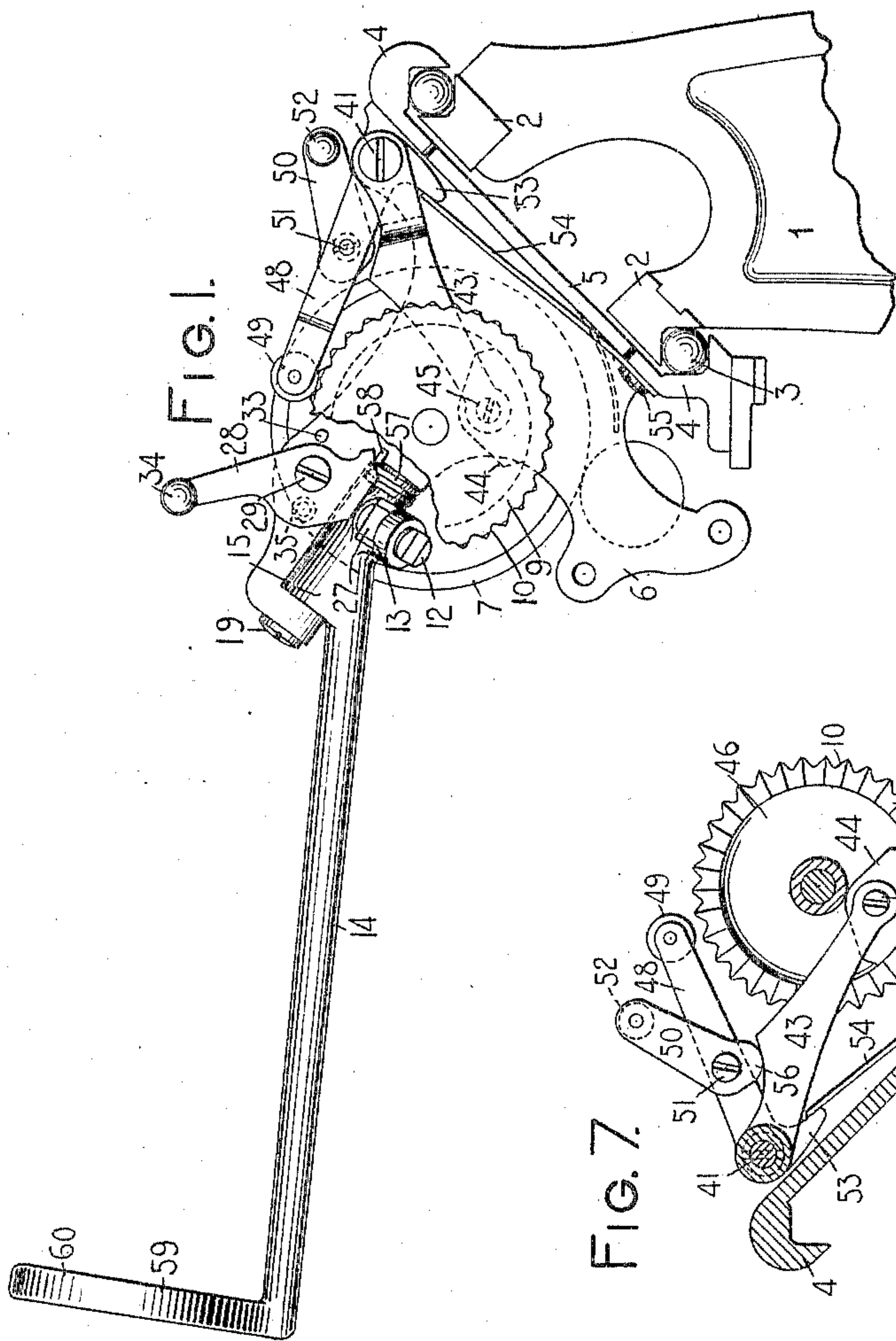
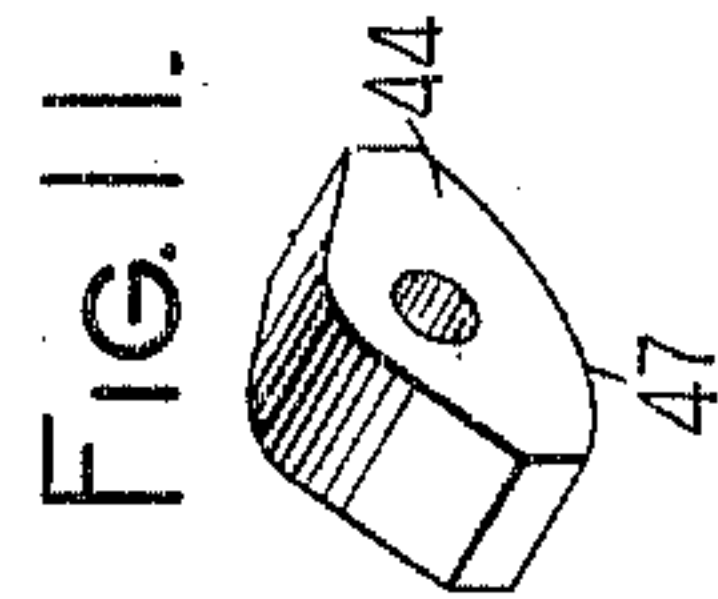
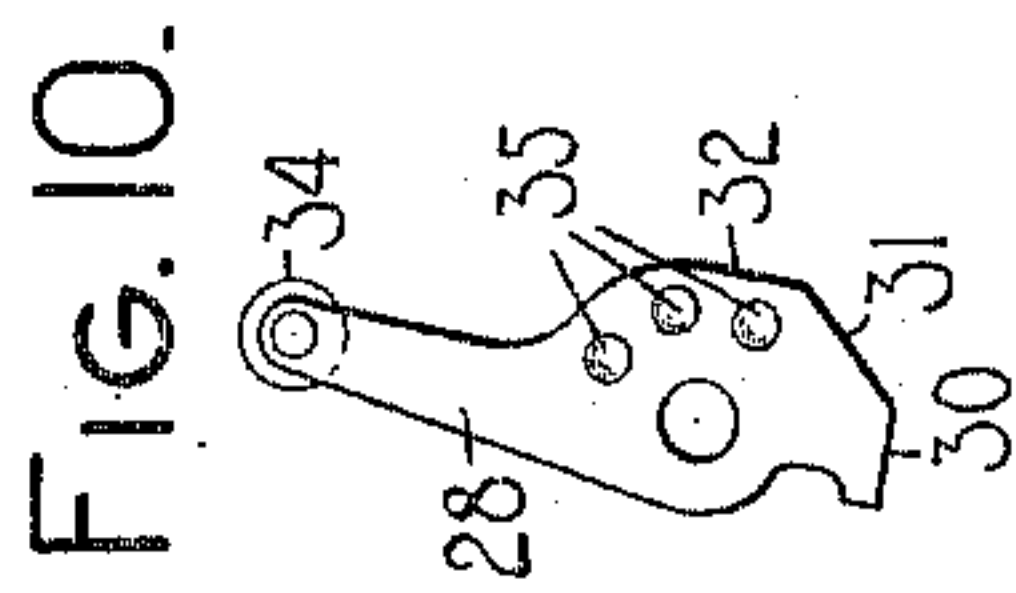
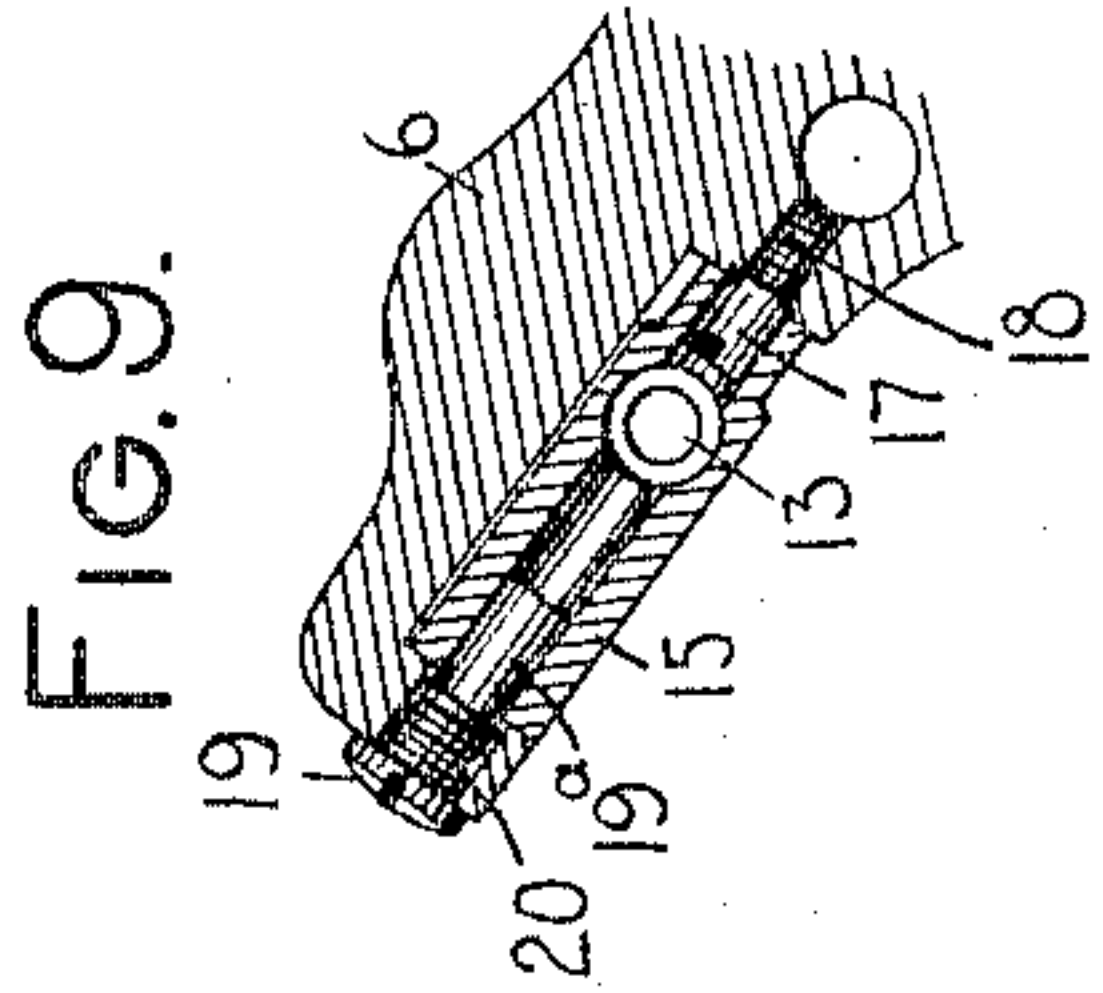


No. 789,407.

PATENTED MAY 9, 1905.

A. T. BROWN.
TYPE WRITING MACHINE.
APPLICATION FILED OCT. 16, 1902.

2 SHEETS—SHEET 1.



WITNESSES.

K. V. Donovan.
Wm. E. Smith

INVENTOR.
Alexander T. Brown
by *Jacob F. Felt*
HIS ATTORNEY

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2 SHEETS—SHEET 2.

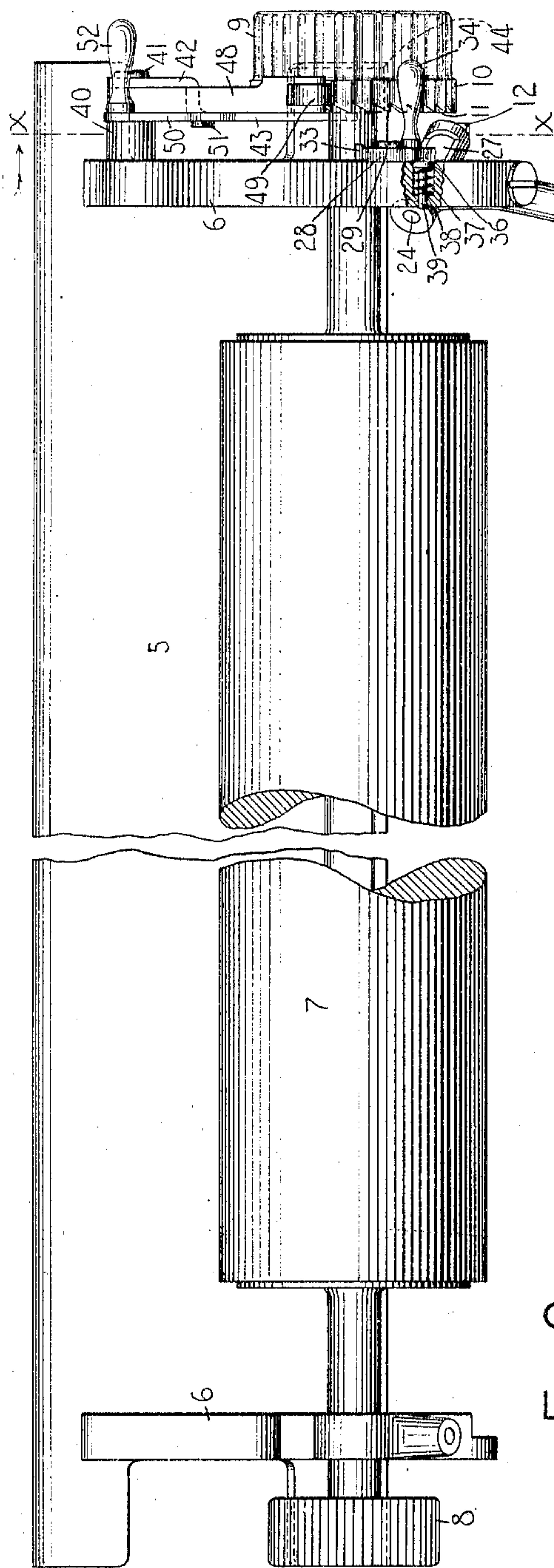


FIG. 2.

WITNESSES:

K. V. Donovan.
Miles Smith

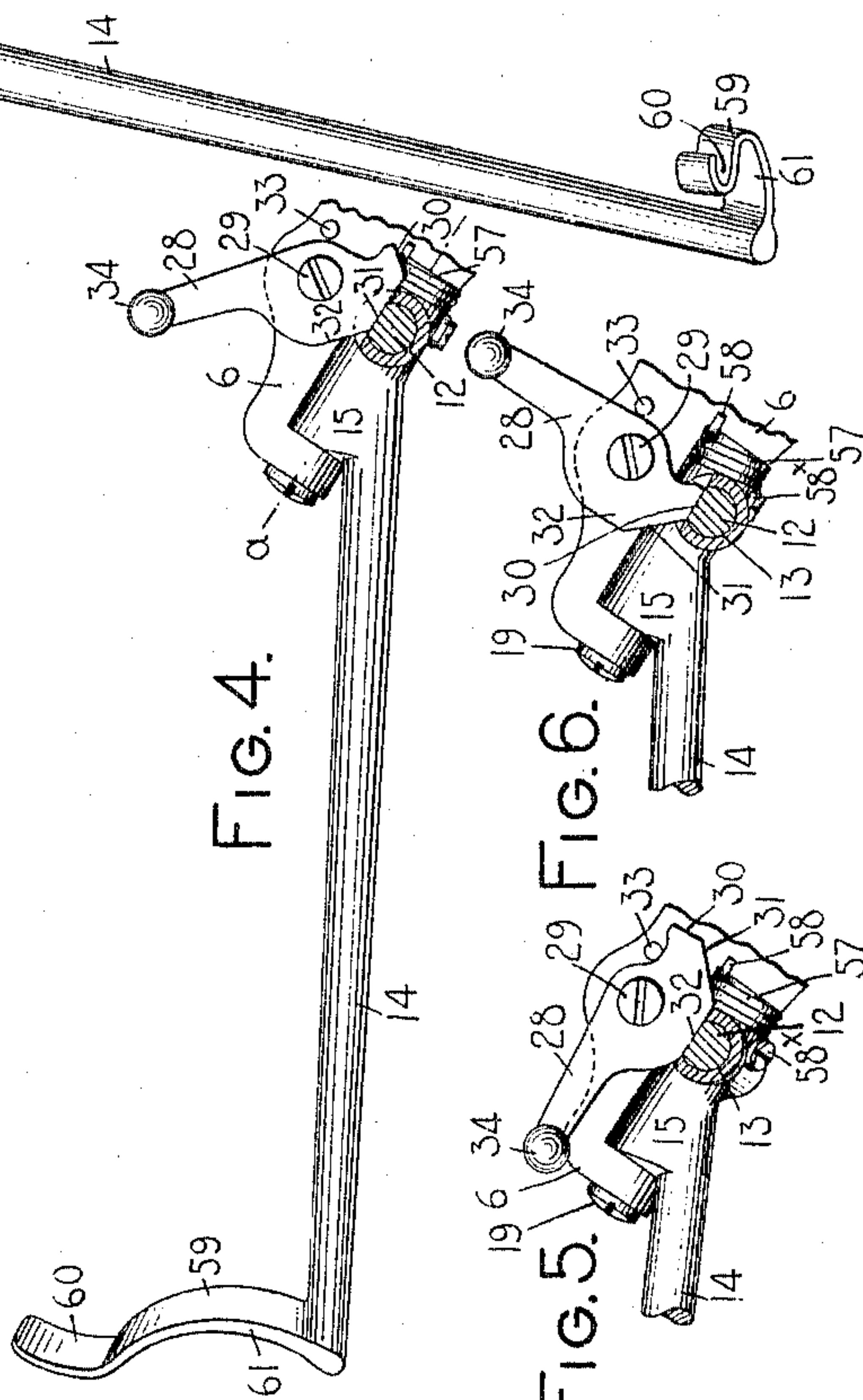


FIG. 4.

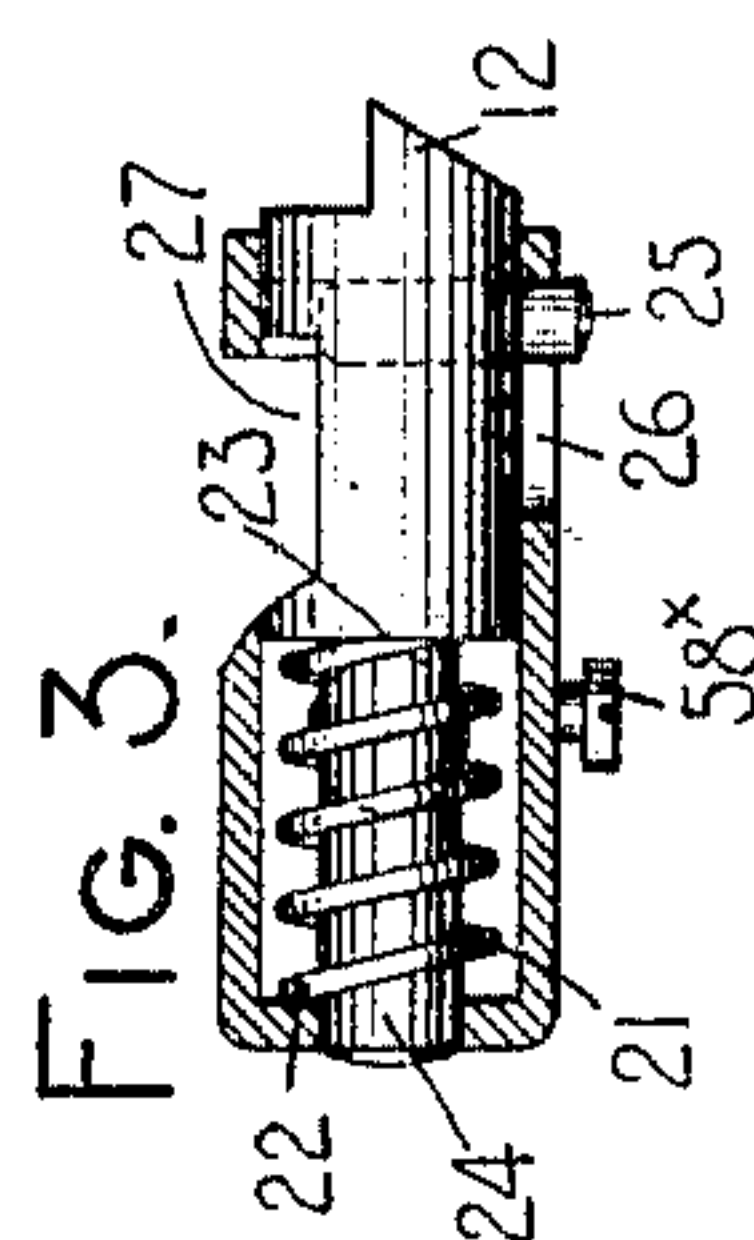


FIG. 3.

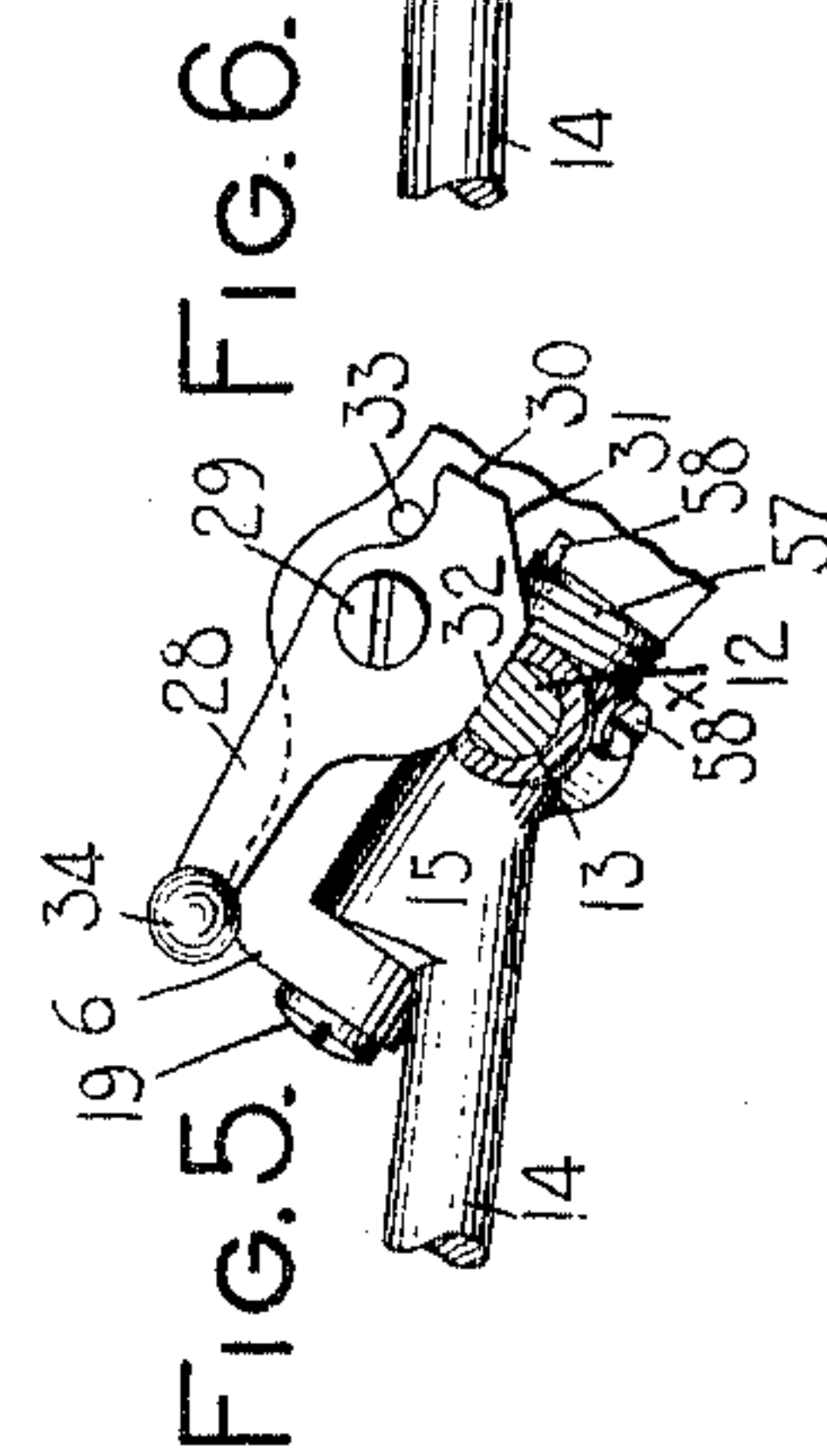


FIG. 5.

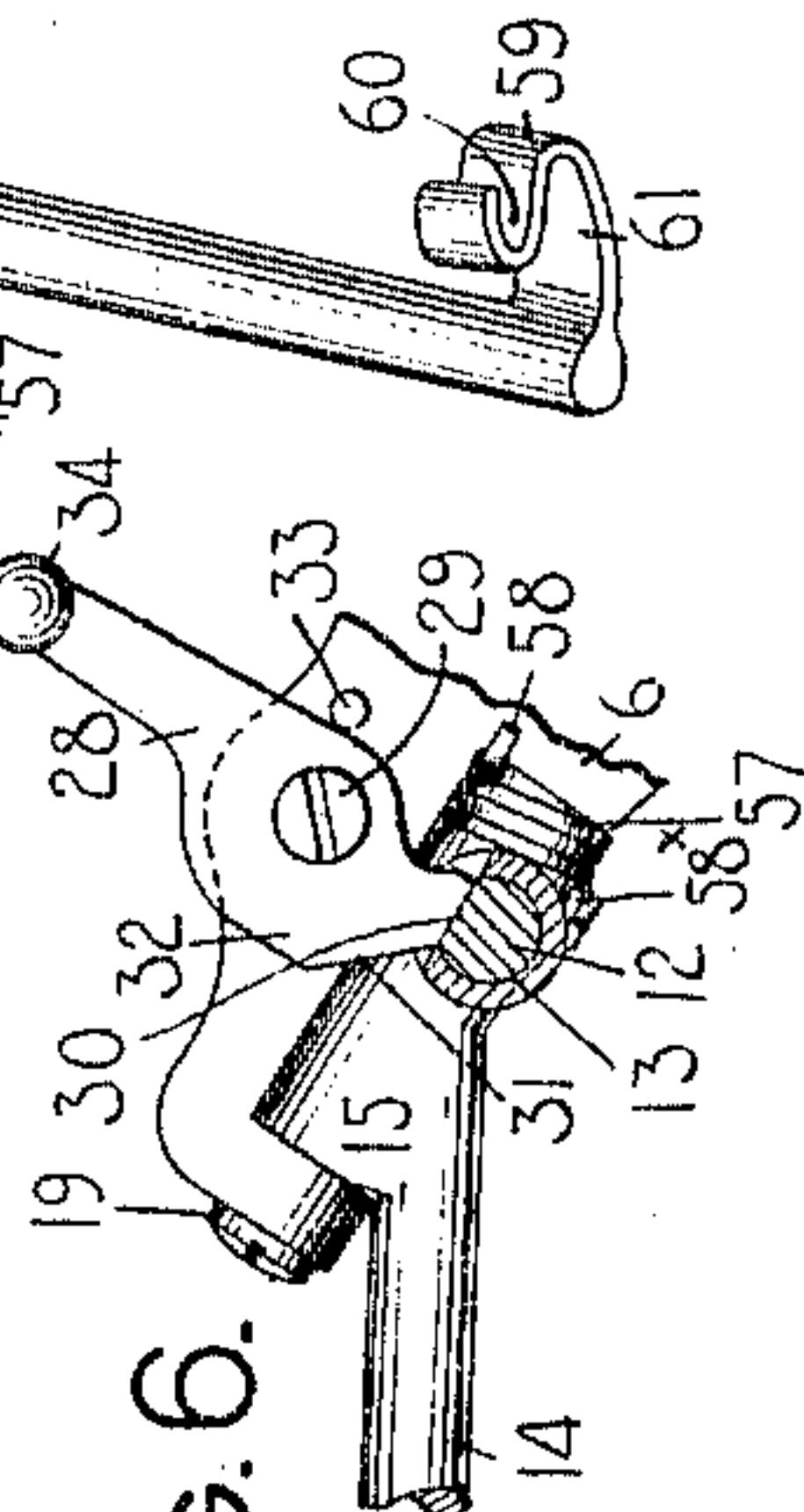


FIG. 6.

INVENTOR.

Alexander T. Brown
by Jacob Felber
HIS ATTORNEY

UNITED STATES PATENT OFFICE.

ALEXANDER T. BROWN, OF SYRACUSE, NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 789,407, dated May 9, 1905.

Application filed October 16, 1902. Serial No. 127,539.

To all whom it may concern:

Be it known that I, ALEXANDER T. BROWN, a citizen of the United States, and a resident of Syracuse, in the county of Onondaga 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 line-spacing mechanism for type-writing machines, the object of the invention being to provide simple and efficient mechanism of the character specified.

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

In the accompanying drawings, wherein sufficient number of parts of a front-strike type-writing machine are shown to illustrate my invention in its application thereto, Figure 1 is an end view of a carriage with the features of my invention shown applied thereto. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged detail sectional view of a portion of the line-spacing lever and pawl or puppet-dog. Fig. 4 is a side view, partly in section, of a line-spacing lever and dog, together with the cooperating stop. Figs. 5 and 6 are like views of the same with parts broken away, the views illustrating different dispositions of the parts from that shown in Fig. 4. Fig. 7 is a vertical sectional view on the line *xx* of Fig. 2 and looking in the direction of the arrow at said line. Fig. 8 is a detail top view of the brake-shoe-carrying lever. Fig. 9 is a transverse sectional view taken through the pivots of the line-spacing lever. Fig. 10 is a detail side view of the adjustable stop. Fig. 11 is a detail perspective view of the brake-shoe.

Like reference characters designate corresponding parts in the various views.

The main frame 1 of the machine is provided with grooved traverse-rails 2, that extend from side to side of the machine and receive antifriction-balls 3, that likewise cooperate with the grooved rails 4 of the carriage 5, which is provided with end plates 6, in

which the platen 7 is mounted to revolve. 50 The shaft of the platen is provided at the left-hand end thereof with the usual hand-wheel 8, whereas the opposite end of said shaft has a hand-wheel 9 secured thereto. This hand-wheel 9 is preferably made of metal and has 55 a detent-ratchet 10 formed on the periphery thereof, whereas the inner face or rim of the hand-wheel has line-spacing ratchet-teeth 11 formed thereon that are adapted for cooperation with a line-spacing puppet-dog or pawl 60 12, that is contained and reciprocates within a bearing 13, which extends at right angles to the pivotal axis of the line-spacing lever 14 in which the bearing is formed. The line-spacing lever has a general horizontal disposition, 65 whereas the pivotal center thereof (represented by the dotted line *a* in Fig. 4) is inclined. The inner end of the line-spacing lever is provided with a barrel-like portion 15, having an opening extending therethrough, which intersects 70 the opening or bearing 13, in which the puppet-dog or line-spacing pawl reciprocates. The cylindrical head 17 of a screw is adapted to be received within the lower end of the barrel-like portion 15 of the line-spacing lever, whereas 75 the stem 18 of said screw is threaded into an opening in the right-hand end plate 6 of the carriage. Seated in the upper end of the barrel-like portion 15 is the cylindrical end 19^a of a headed screw 19, which is threaded at 80 for cooperation with a threaded opening in the end plate. These screws 17, 18, and 19 constitute pivots upon which the line-spacing lever 14 is adapted to turn. In order to connect the line-spacing lever to the end plate, 85 it is merely necessary to aline the opening in the barrel 15 with the threaded openings in the end plate. The screw 17 18 may then be inserted through the upper threaded opening in the end plate and through the opening in 90 the barrel 15 of the lever and screwed into position, as represented in Fig. 9. The screw 19 may then be screwed into place, as shown in said figure, and the lever is mounted in place. The puppet-dog or line-spacing pawl 95 12 is normally maintained in the projected position (shown in Fig. 3) by a coiled spring 21, which bears at one end 22 against an in-

ternal wall of the bearing and at its opposite
 end 23 against the body of the dog. The dog
 has a contracted stem 24, which is surrounded
 by the coiled spring and is guided in an open-
 5 ing in the bearing. The dog is likewise pro-
 vided with a removable pin 25, that extends
 laterally therefrom and projects through an
 elongated slot 26 in the bearing, so as to per-
 mit a longitudinal movement of the dog, but
 10 to prevent it from turning within the bearing.
 The bearing 13 is cut away at 27, so as to ex-
 pose the dog to contact with an adjustable
 stop or abutment 28, as represented in Figs.
 4, 5, and 6. This stop 28 is mounted on the
 15 outer side of the right-hand end plate of the
 carriage by a screw-pivot 29 and is provided
 with three contact-faces 30, 31, and 32, respec-
 tively, and coöperates with a stop-pin 33 to
 limit the movement thereof in two directions,
 20 as indicated in Figs. 5 and 6. This stop has a
 laterally-projecting finger-piece or handle 34,
 by means of which it may be turned on its
 pivot 29 to bring any of the three contact-
 faces 30, 31, or 32 into a position to limit the
 25 movement of the line-spacing lever around its
 pivotal center in one direction. These three
 contact-faces are at varying distances from
 the pivotal center, so as to permit variation
 in the throw of the lever, and the extent of
 30 feed movement of the pawl 12 will therefore
 be varied in accordance with the particular
 contact-face of the stop which is in position
 to coöperate with the lever. It will be ob-
 served that when the full limit of movement
 35 of the line-spacing lever in one direction is
 reached, as represented in Figs. 4, 5, and 6, a
 side of the dog 12 will be brought into con-
 tact with the stop 28 through the apertured
 portion 27 in the bearing 13, and this con-
 40 tact between the dog and stop will exert a
 lateral pressure on the dog and tend to pre-
 vent an overthrow of the line-spacing wheel
 and platen. In order that the stop 28 may be
 properly maintained in any of the three po-
 45 sitions to which it may be moved, I have
 provided three recesses or depressions 35 on
 the inner face of the stop, and these depres-
 sions are adapted to receive the rounded head
 36 of a plunger which is contained within an
 50 aperture 37 in the right-hand end plate of
 the carriage. A coiled spring 38 surrounds
 the stem 39 of the plunger and bears at one
 end against the inner end wall of the recess
 or aperture and at its opposite end against the
 55 head of the plunger, thus tending to force the
 head of the plunger into an aperture or de-
 pression 35 when the same is brought op-
 posite the plunger, thus maintaining the stop
 28 against accidental displacement, the plun-
 60 ger being guided in its movement by the head
 36 and the stem 39.

A boss 40 projects outwardly from the right-
 hand end plate and constitutes a bearing for
 a screw-pivot 41, which passes through open-
 65 ings in the yoke-like end 42 of a brake-shoe-

carrying lever 43, which has a brake-shoe 44
 pivoted thereto at 45, said shoe being received
 within a recess 46 on the inner face of the
 hand-wheel 9. The lower edge 47 of the shoe
 conforms substantially to the curve of the rim 70
 of the hand-wheel 9, which forms a wall of
 the recess 46. Between the yoke-like arms
 of the shoe-carrying lever 43 is contained a
 detent-lever 48, which is apertured and re-
 ceived at its apertured portion on the screw- 75
 pivot 41. This lever 48 has a detent-roller 49
 pivoted to the free end thereof and likewise
 carries a hand-operated lever 50, which is piv-
 oted at 51 thereto and has a handle or finger-
 piece 52, by which it may be moved from the 80
 position shown in Fig. 1 to that represented
 in Fig. 7. The lever 48 is in the form of a
 bell-crank lever, the lower arm 53 of which
 constitutes a bearing for the free end of a
 spring 54, that is secured by a screw 55 to the 85
 carriage 5. The pressure of this spring is ex-
 erted to normally maintain the detent-roller
 49 in contact with its detent-ratchet 10, as
 represented in Fig. 1. When, however, the
 hand-operated lever 50 is moved from the po- 90
 sition shown in Fig. 1 to that indicated in
 Fig. 7, it causes the cam-like end 56 of said
 lever to bear upon the brake-shoe lever 43.
 The same movement of the lever 50 is effect-
 ive to raise the detent-roller out of engage- 95
 ment with its coöperating detent-ratchet, as
 shown in Fig. 7, and the pressure of the spring
 54 will at this time be exerted on the lever
 43 and on the brake-shoe 44 in order that the
 hand-wheel 9 and platen, which are at this 100
 time freed from the detent, may be rotated to
 any desired extent in either direction through
 either of the hand-wheels 8 or 9, and the parts
 will be maintained by the brake-shoe in the
 position to which they are moved. When the 105
 lever 50 is moved back to the position shown
 in Fig. 1, the cam-like end 56 of said lever will
 be moved out of contact with the brake-shoe
 lever 43, thereby releasing the brake-shoe from
 pressure of the spring 54. The same move- 110
 ment of the lever 50 permits the detent-roller
 49 to be forced in contact with its coöperat-
 ing detent-ratchet and to be maintained in
 such engagement under the tension of the
 spring 54. A coiled spring 57 is secured at 115
 one end 58 to the end plate 6 at the right-hand
 side of the carriage, whereas the opposite end
 of this spring is secured to a screw 58^x, that
 takes in a threaded opening in the bearing 15
 of the line-spacing lever 14, the tension of 120
 this spring being exerted to restore the hand-
 lever to the left or to its normal position.

Extending at substantially right angles to
 the length of the lever 14 is a finger-piece 59,
 which is in the form of an ogee curve. The 125
 purpose of this curvature of the finger-piece
 59 will be hereinafter explained.

From the foregoing description it will be
 understood that the function of the lever 14
 is twofold, in that it is used not only as a line- 130

spacing lever, but as a hand-lever, for restoring the carriage to the right to begin a line of writing. The inclined arrangement of the pivotal center of the lever 14 and the disposition of the lever relatively thereto afford a swinging movement of the lever in an arc the chord of which extends in the general direction of the travel of the carriage. The tension of the spring 57 is such that a movement of the lever 14 toward the right will first produce a line-spacing movement of the platen for a distance of one, two, or three line-spacing ratchet-teeth 11 in accordance with the adjustment of the stop 28. The continued pressure upon the hand-lever 14 after the line-spacing movement has been effected will cause the carriage to be moved toward the right. Obviously, however, the tension of the spring 57 may be varied to afford a change in the result—that is to say, the tension of the spring 57 may be greater than that of the carriage-spring, (not shown,) in which event the carriage would be restored to the right through the hand-lever 14 before the line-spacing movement took place. In order that the operator may effect a line-spacing movement of the platen through a hand-lever 14 without disturbing the position of the carriage wherever it might be, it is merely necessary for the operator to seat the index-finger of the right hand in the curved portion 60 of the finger-piece and to move the hand-lever around its pivotal center by a pressure exerted by the thumb of the operator on the portion 61 of the finger-piece. This results in swinging the hand-lever around its pivotal center to afford a line-spacing movement of the platen without the pressure applied tending to force the carriage toward the right and without disturbing the position thereof. In order that the line-spacing movement and reciprocation of the carriage to the right may be effected by a single continuous movement of the hand-lever, it is merely necessary to place the thumb or index-finger in the curved portion 61 of the finger-piece 59 and move it toward the right.

When I refer herein to a "puppet-dog," I mean a sliding dog of the general character shown as distinguished from a mere pivoted dog.

It will be seen that I have provided a simple and efficient line-spacing mechanism which can be operated merely to line-space or to line-space and restore the carriage at a single operation at will.

Certain of the features shown and described herein constitute no part of the present invention, but are claimed in a separate application filed by me October 16, 1902, Serial No. 127,540.

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

1. In a type-writing machine, the combination of a platen, a hand-wheel therefor, a brak-

ing device that is adapted to contact with said hand-wheel, line-spacing mechanism, and means for throwing said braking mechanism into and out of operation.

2. In a type-writing machine, the combination of a platen, a hand-wheel therefor, a detent-ratchet, a detent cooperating therewith, a brake-shoe that is adapted to contact with said hand-wheel, and means for throwing said brake-shoe into operation when the detent is thrown out of operation.

3. In a type-writing machine, the combination of a platen, a hand-wheel therefor, a line-spacing ratchet-wheel formed on said hand-wheel, a line-spacing pawl cooperating with said ratchet-wheel, a detent-ratchet which is likewise formed on said hand-wheel, a detent that cooperates therewith, a brake that is adapted to bear on said hand-wheel, and means for throwing the brake into operation when the detent is thrown out of operation.

4. In a type-writing machine, the combination of a platen, a hand-wheel connected thereto, a peripheral detent-wheel formed on said hand-wheel, a detent cooperating therewith, a brake-shoe contained within said hand-wheel and adapted to work against the inner face thereof, a spring for maintaining said detent against the detent-wheel, and a lever for applying the force of said spring to the brake-shoe when the pressure of the detent is removed from the detent-wheel.

5. In a type-writing machine, the combination of a platen, a recessed hand-wheel connected thereto, a friction-surface formed within the recessed portion of said hand-wheel, a brake-shoe working within said recessed portion, a lever to which said brake-shoe is connected, and means for applying force to said lever to apply the brake-shoe.

6. In a type-writing machine, the combination of a platen, a recessed hand-wheel connected thereto, a friction-surface formed within the recessed portion of said hand-wheel, a brake-shoe working within said recessed portion, a lever to which said brake-shoe is connected, a detent-surface on said hand-wheel, a spring-pressed detent device cooperating therewith, and a hand-operated lever connected to said detent device to release the detent device and to apply the pressure to the brake-shoe.

7. In a type-writing machine, the combination of a platen, a recessed hand-wheel connected thereto, a friction-surface formed within the recessed portion of said hand-wheel, a brake-shoe working within said recessed portion, a lever to which said brake-shoe is pivoted, a detent-ratchet on the periphery of said hand-wheel, a detent-roller cooperating therewith, a detent-lever which carries said roller, a spring that tends to normally maintain the detent-roller in contact with the detent-ratchet, and a hand-operated lever pivoted to the detent-lever and which is adapted to ap-

ply the force of said spring to the brake-shoe when the detent is moved out of contact with its ratchet.

8. In a type-writing machine, the combination of a platen, a recessed hand-wheel connected thereto, a friction-surface formed within the recessed portion of said hand-wheel, a brake-shoe working within said recessed portion, a lever to which said brake-shoe is pivoted, a detent-ratchet on the periphery of said hand-wheel, a detent-roller coöperating therewith, a detent bell-crank lever which carries said roller, a spring that bears against one arm of said bell-crank lever and tends to nor-

mally maintain the detent-roller in contact with the detent-ratchet, and a hand-operated lever pivoted to the detent-lever and which is adapted to bear upon the brake-shoe lever and to apply the force of said spring to the brake-shoe through its lever when the detent is moved out of contact with its ratchet. 15 20

Signed at Syracuse, in the county of Onondaga and State of New York, this 2d day of October, A. D. 1902.

ALEXANDER T. BROWN.

Witnesses:

CHARLES J. TONER,
F. G. BODELL.