

No. 717,506.

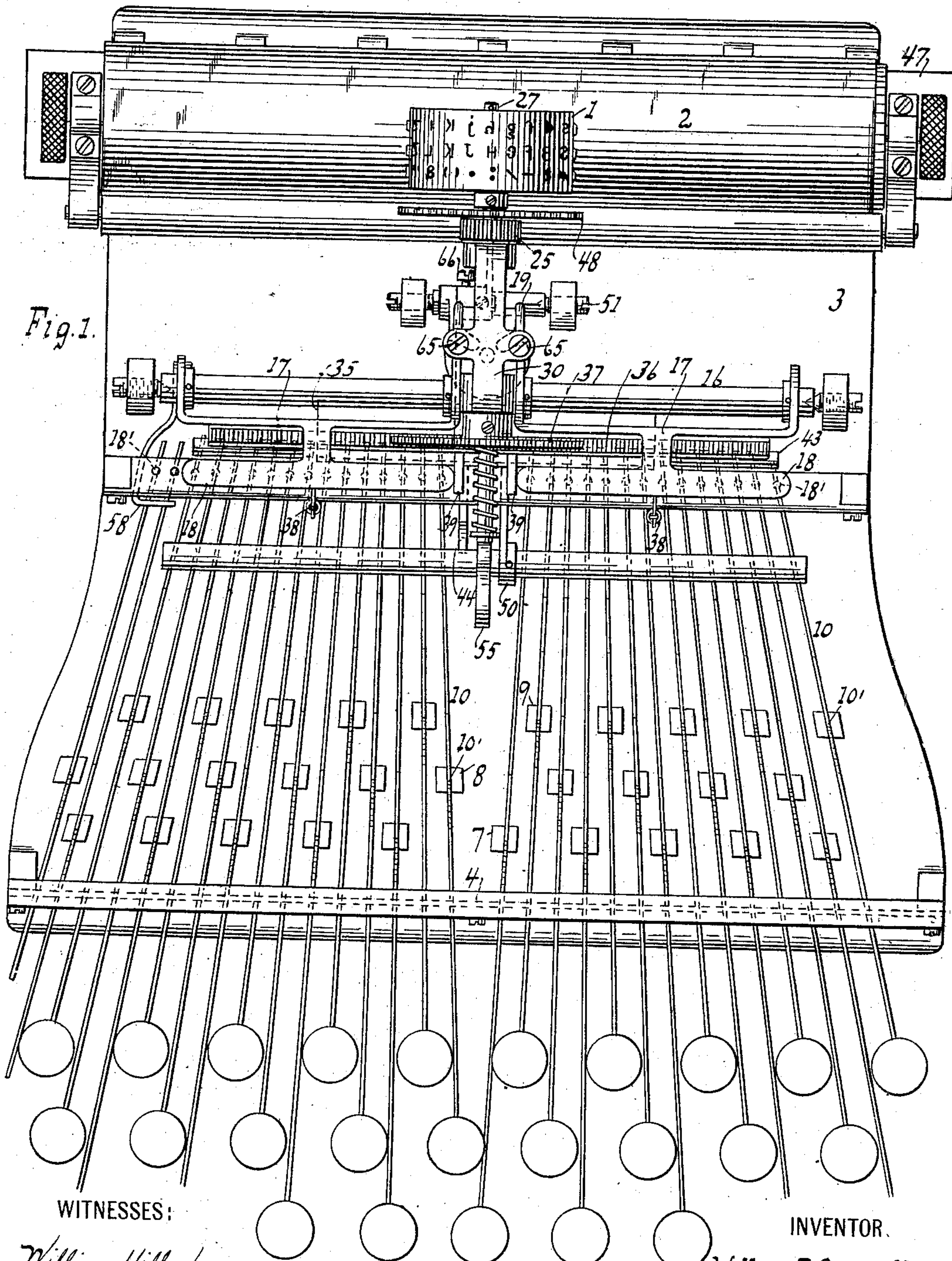
Patented Dec. 30, 1902.

W. P. QUENTELL.
TYPE WRITING MACHINE.

(No Model.)

(Application filed Mar. 23, 1901.)

3 Sheets—Sheet 1.



WITNESSES:

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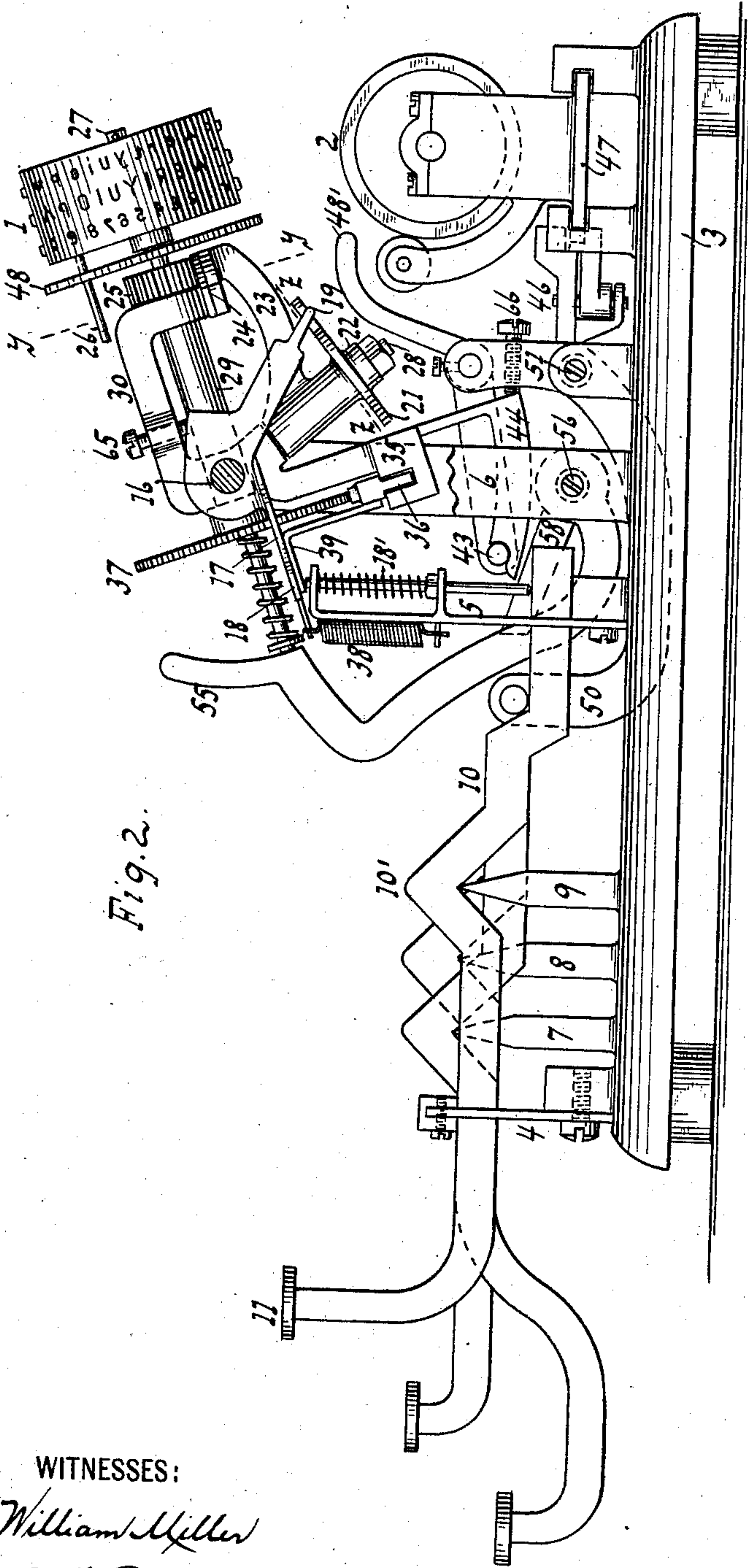


Fig. 2.

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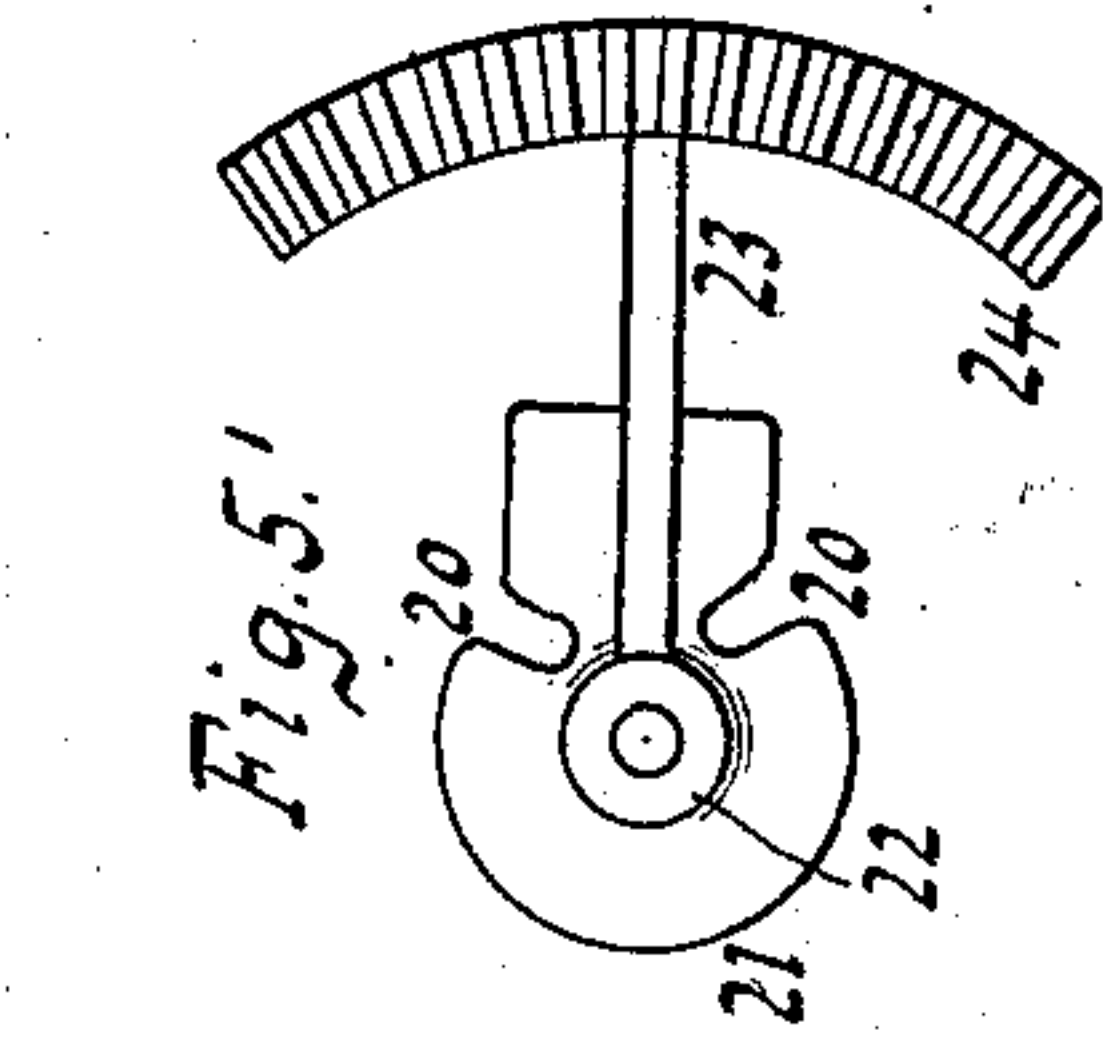


Fig. 5.

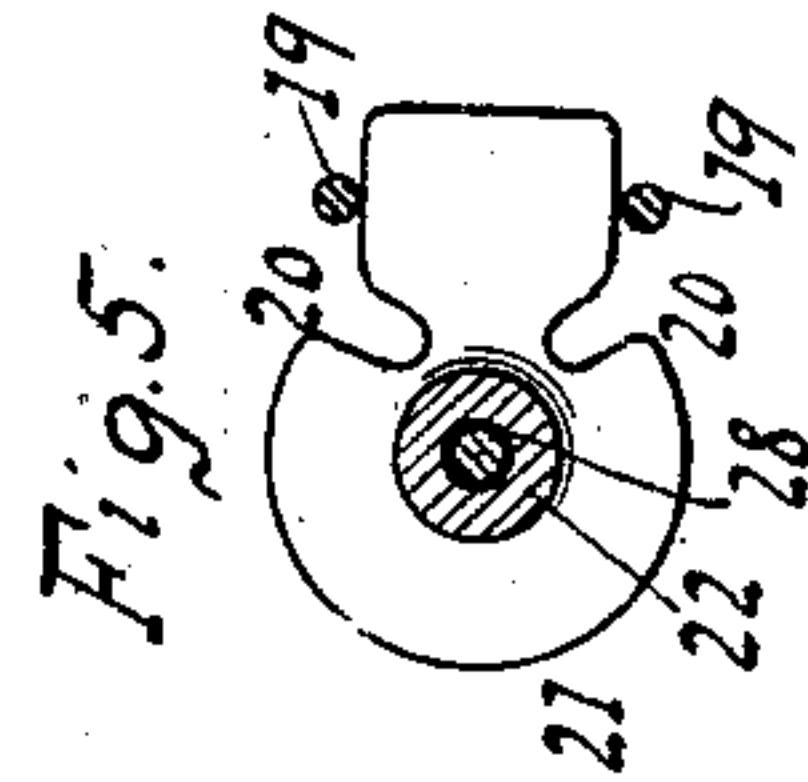


Fig. 5.1

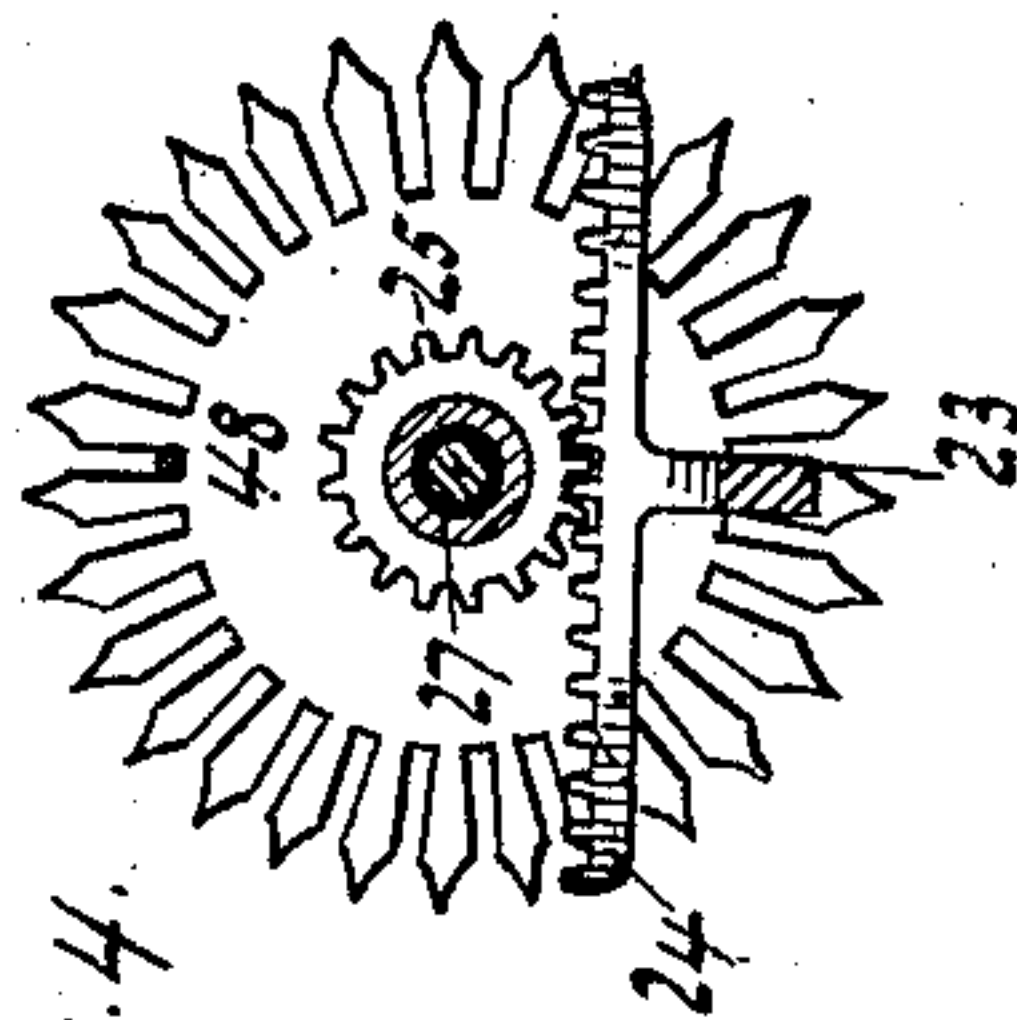


Fig. 4.

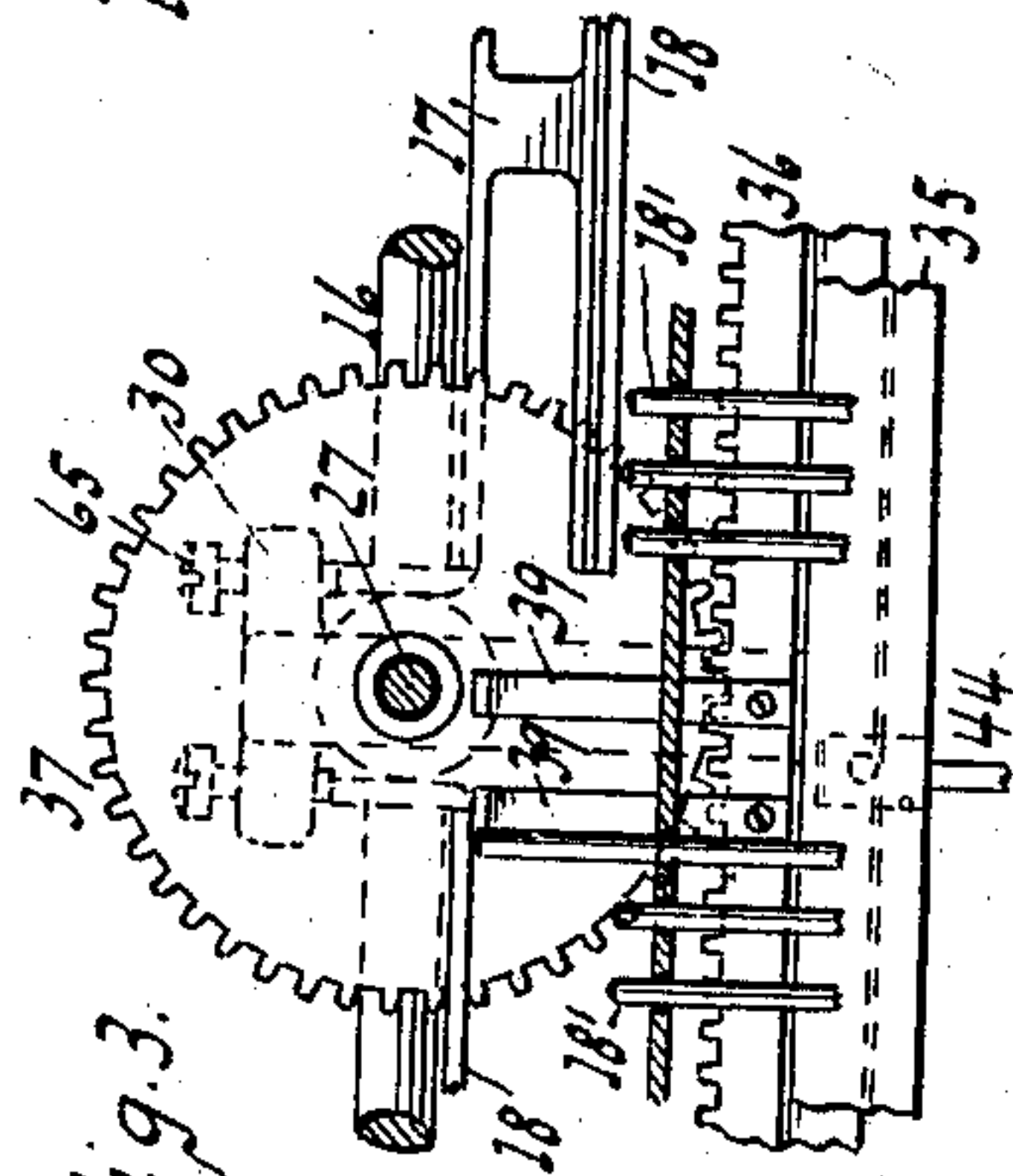


Fig. 3.

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Fig. 6.

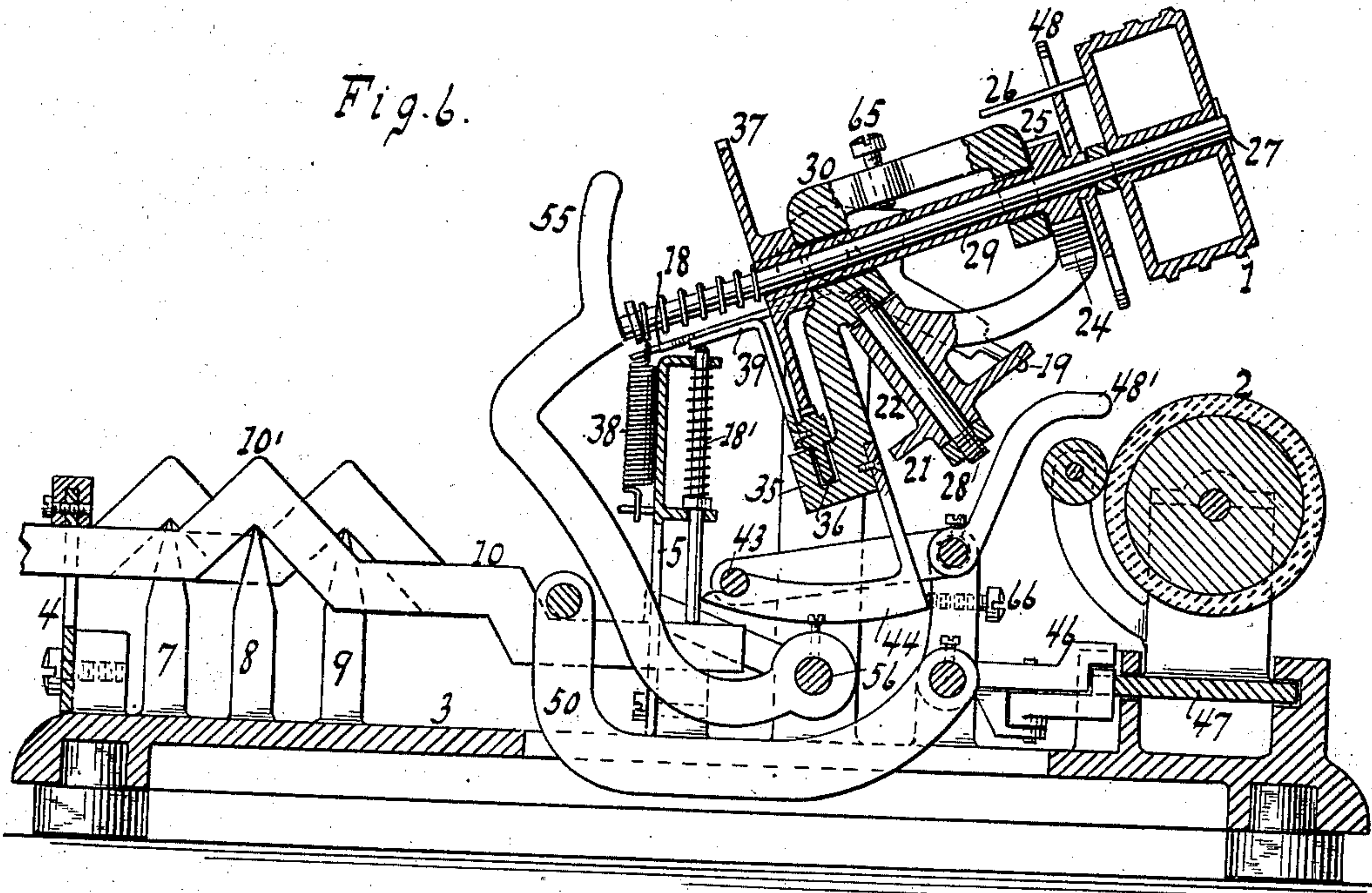
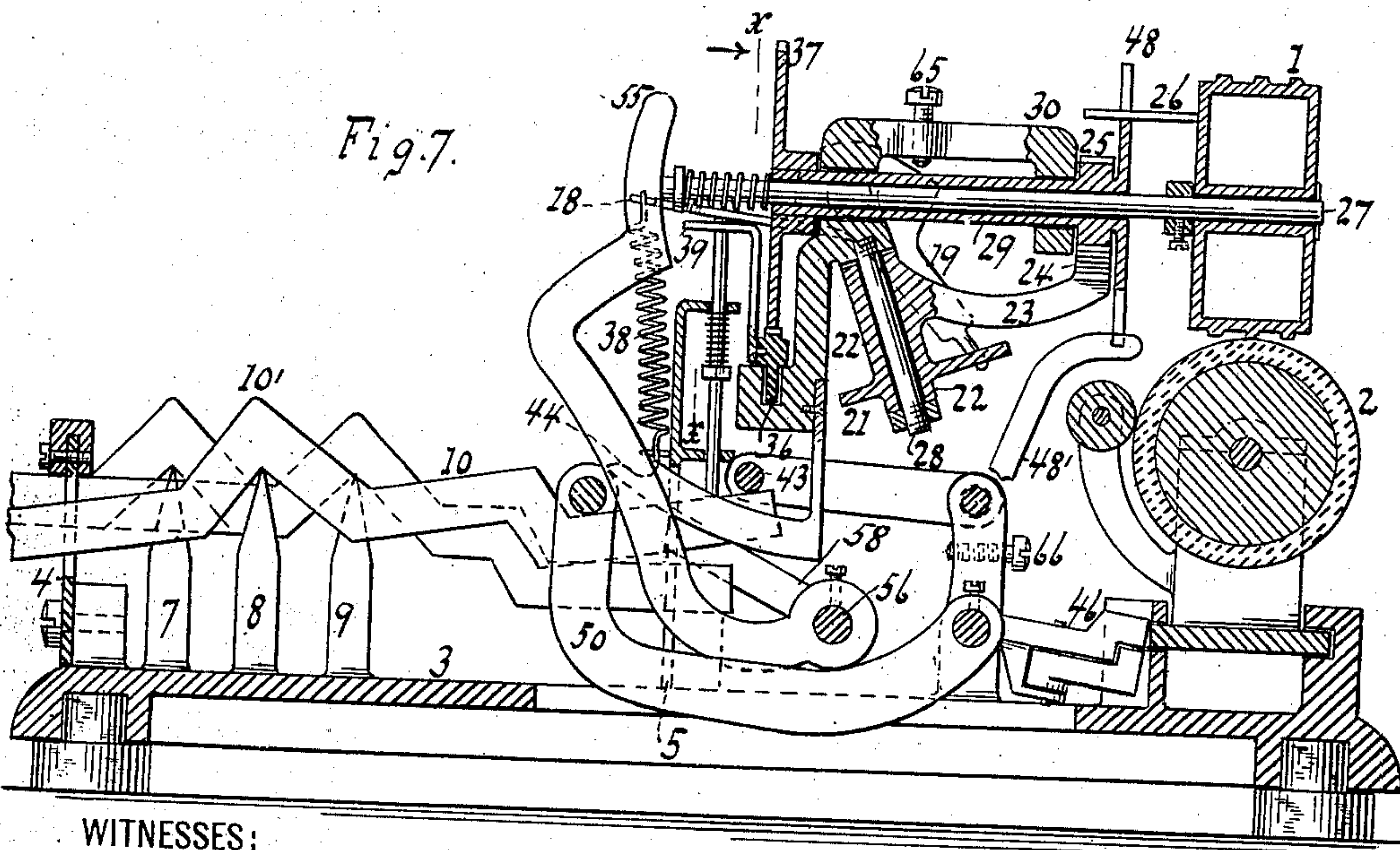


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM P. QUENTELL, OF NEW YORK, N. Y., ASSIGNOR TO THE POSTAL TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 717,506, dated December 30, 1902.

Application filed March 23, 1901. Serial No. 52,596. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. QUENTELL, a citizen of the United States, residing at Manhattan borough, New York city, in the county and State of New York, have invented new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to type-writing machines; and the invention consists in certain novel features of construction set forth in the following specification and claims, and illustrated in the annexed drawings, in which—

Figure 1 is a plan view of the machine. Fig. 2 is a side elevation of the machine. Fig. 3 is a section along xx , Fig. 7. Fig. 4 is a section along yy , Fig. 2. Fig. 5 is a section along zz , Fig. 2, showing the driving-arms and shoulder-piece for rotating the type-wheel. Fig. 5' shows a detail plan view of the type-wheel-driving segment, said segment with its arm and hub having been slipped off the axle or stem about which said segment swings. Fig. 6 is a side elevation showing a central section of Fig. 1. Fig. 7 is a view like Fig. 6, showing the type-wheel in striking or printing position.

The machine is shown with a type segment or wheel 1, Fig. 2, which is rotated to bring the required letter or character to the printing-point, and which segment is then tilted or driven to the platen or roller 2 to print.

The machine is shown with the base or support 3, having risers 4, 5, and 6. The fulcrums of the key-levers are shown formed by risers 7, 8, and 9. The key-levers 10 have the buttons or finger-pieces 11, and their fulcrum portions are formed by the inverted-V portions 10'. Each key-lever can thus be readily made to mount or straddle its respective fulcrum or block 7, 8, or 9. The riser 4 has an upwardly-extending comb portion, teeth or cuts of which serve as a front guide for the various sets of key-levers. The rear guide for the key-levers is shown at the riser 5.

A shaft 16 forms a support for swinging arms 17, of which two are shown on opposite sides of the median line; but the description of one arm with its operation explains the other. Shaft 16 is preferably formed of two

sections. The sections are suitably connected at their inner ends to the frame 30, so as to substantially form a single shaft extending entirely across the machine. Each arm 17 has a cross bar or piece 18, extending across or over pins 18', actuated or pushed by the key-levers. These pushers 18' could be allowed to drop or return by their weight on a key being released; but a returning-spring, which can be coiled about each push-pin 18', is of advantage. Each arm or bail 17 has a lever or arm 19, which can be of one piece with the arm 17, or several pieces could be secured together. It has been found practical, however, to make the parts of a piece of sheet metal properly cut or died and bent to required shape.

As a lever-button 11 is touched or depressed the respective pin 18' moves the forward lever end or bar 18 with lever 19. The latter striking a shoulder 20, Fig. 5, on disk 21 will rotate or oscillate the latter. As the disk 21 has two oppositely-located shoulders, it is evident that as one arm 19 or another is moved the disk 21 swings one way or another. The disk 21 actuates a rocking sleeve or hollow shaft 22, Fig. 2, with arm 23, having segment or gear 24, engaging wheel or pinion 25. From this wheel, or rather from a disk 48 moving with this wheel, extends a stem 26, engaging the type wheel or segment 1. The swing of disk 21 with arm 23 and segment 24 causes gear 25, with arm 26 and wheel 1, to be set to bring a certain type to printing position. The type-segment 1 with gear 25 turn with sleeve 29, Figs. 2 and 6, about shaft 27. The latter can be made longitudinally movable or set for case-shifting or bringing different rows of type to the printing-line. The rock-sleeve or tubular driving-shaft 22 is shown mounted on a stud 28 and can be held from slipping off by a suitable nut. The sleeve 29 and stud 28 are carried by frame 30, which can rock or tilt on shaft 16. This frame or bearing 30 carries a bracket 35, supporting a slidable rack 36, having a stop-arm, or rather two arms, 39 extended forwardly or toward the row of pins 18'. This rack is engaged by a gear-wheel 37, rotating with the type-wheel or its sleeve 29. Springs 38, hitched to a suitable

point, say a bar 18, tend to return or hold the type raised or away from the platen and return the driving-levers 19. The rack-race 35 is shown with an arm or segment 44, Fig. 2, and a locking-bail 43 engages this arm to lock the type-wheel against tilting toward the platen. When a key-lever is struck, it raises its corresponding pin 18' and swings cross-bar 18 with the respective arm 19 to rotate the driving-sleeve 22 with shoulder-piece 21 and rotate segment 24 and type-wheel 1, the gear-wheel 37 rotating with such type-wheel. This gear-wheel slides rack 36 with stop 39 until the latter is arrested by the pin 18', raised by the actuated key. Rotation of the type-wheel is now stopped. The pin 18' continuing to press onto bar 18 and the key-lever having lifted the locking-bail 43 out of hook 44, the frame 30 is tilted to bring the type-wheel to the platen for a printing stroke, the tubular shaft 22 and rack-race 35 rocking with the frame.

The spacing arrangement may be of any suitable kind. In the drawings is indicated the well-known dog 46, with rack 47 on the carriage of roller 2, the dog being actuated by arm or bail 50 at escapement-shaft 51 and engaged by or extended over the key-levers. By omitting a pin 18' the corresponding key-lever becomes a spacer and will actuate the feed-dog, but not the type-wheel.

The ribbon or inking device is not shown, as any suitable ink-roller will do.

The case-shift movement of wheel-shaft 27 can be done by a lever-arm 55, Fig. 2, fulcrumed at 56 and having an arm 58, Fig. 1, engaged by or reaching over one or more shift-keys. The keys thus act directly on the shift-lever, so that the construction is simple.

Secured to a suitable part of the machine is an arm 48', Fig. 2, and when the type-wheel is printing the toothed disk 48 engages this arm or horn 48', Fig. 7, to further lock the type-wheel to insure accuracy.

The levers 19 when at rest or in normal position rest against screws or stops 65 on frame 30, and a stop 66, Fig. 2, limits the upward swing of the type-wheel—that is to say, the backward swing of arm 44. These stops are practically made adjustable for obvious reasons.

The type-wheel shaft and the driving-shaft 22 are shown at an angle to one another, the type-wheel being in convenient striking position to the platen and the driving-shaft having its arm 23 extended toward such type-wheel shaft.

As seen in Fig. 5, the driving-levers 19 when at rest hold the shoulder-piece or slotted bracket 21 in what may be called "central" position or in the position from which the shoulder-piece is to start rotating to the right or to the left. In other words, the piece 21 is made to extend rearwardly, by which means either of the oppositely-located driving-levers both on its driving and return

movement will positively drive and positively return the shoulder-piece or contacting part 21, with which said levers contact, and which contacting-piece moves the type-wheel-driving gear or segment 24 or the rotating member 23, carrying said segment, and which segment is curved or centered about the center 28, about which member 23 rotates. The pivoted key-levers, having their inner ends or the pins 18' of said inner ends arranged under the forward ends or bars 18 of the levers 19, are in convenient position to swing said levers to strike shoulder 20. The type-wheel-carrying sleeve 29 being mounted on the rear upper part of shaft 27 allows play to the latter and to the lever 55 for case-shifting, and the rack-driving gear at the front of this sleeve 29 is in convenient position for the application of rack 36.

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

1. A tilting frame having a rocking type-wheel shaft, a rocking driving-shaft having a gear-segment for the wheel-shaft, oppositely-located levers for said segment fulcrumed about the center of oscillation of the frame, and a contacting part with which said levers contact both on the driving and return movements thereof to positively drive and positively return said segment and type-wheel, each such lever having a single arm for engaging said contacting part substantially as described.

2. In combination with a type-wheel, a driving-gear segment therefor, oppositely-located shoulders, a rotating member carrying said segment, said segment centered about the center of the rotating member, driving-levers made to engage the shoulders for propelling the type-wheel and means which said levers engage for returning the type-wheel and a tilting frame made to form a common support for the type-wheel and segment-carrying member, substantially as described.

3. A type-writing machine having keys, a type-wheel, a driving-segment for the wheel, a shaft carrying said segment, a slotted bracket on said shaft and driving-levers located or fulcrumed above the keys and engaging slots in said bracket for propelling and positively returning said type-wheel, said keys being arranged on opposite sides of the median line of the machine and said wheel-driving segment being common to both sets of keys and said wheel and segment being made to tilt in unison with one another, substantially as described.

4. A type-wheel, an actuating gear and segment for the wheel, a rotatable driving-bracket connected to said segment, a tilting support for said wheel and bracket, a transverse shaft for carrying the support, oppositely-located shoulders on said bracket, and independent levers made to engage the shoulders and to lock the segment when at rest, substantially as described.

5. A tilting type-wheel and actuating rack

or segment therefor, a rotatable member connected with said rack or segment for oscillating the same, combined with driving-levers made to contact with and move said rotatable member independently of one another in opposite directions, and a lock for preventing tilting of the type-wheel, substantially as described.

6. In combination with a type-wheel, opposite shoulders, connections between the shoulders and type-wheel, driving-levers for engaging said shoulders to positively impel and return said type-wheel, a rocking bail controlling each driving-lever, a support for the wheel and shoulders mounted on the fulcrum of the driving-levers, and key-levers for actuating said bail and located below the same, substantially as described.

7. A type-writing machine provided with a fixed base, a platen-carriage mounted on said fixed base, a rocking bearing, shafts in said bearing at an angle to one another, gears on said shafts, opposite shoulders on one shaft, and independent contacting driving-levers for said shoulders located on opposite sides of the shafts, a type-wheel on one shaft, and returning means for one of the shafts, substantially as described.

8. The combination with a type-wheel shaft, of a rocking driving-shaft having a single shoulder 20 at each side, a common frame or support for the wheel and driving-shafts, an arm connected with the driving-shaft and having a driving-segment geared to the type-wheel shaft, and a lever for each shoulder, each such lever having a single arm made to engage its respective shoulder to turn the driving-shaft, substantially as described.

9. The combination with a type-wheel shaft and a rocking driving-shaft mounted in the same plane with and on a common bearing and at an angle to one another, of shoulders on opposite sides of the driving-shaft, an arm connected with the driving-shaft and having a driving-segment geared to the type-wheel shaft, and a plurality of pivoted levers which strike the opposite shoulders to turn the driving-shaft, substantially as described.

10. The combination with a type-wheel shaft, of a rocking driving-shaft provided at opposite sides with shoulders 20, a driving-segment connected to, carried by and rocking with said driving-shaft, a plurality of pivoted levers which strike the opposite shoulders to turn the driving-shaft, a transverse shaft for supporting the type-wheel and driving-shafts with the levers and pivoted key-levers having their inner ends arranged under the forward ends of the levers which strike said shoulders, substantially as described.

11. The combination with a type-wheel shaft and a driving-shaft arranged at an angle to one another, of shoulders on opposite sides of the driving-shaft, an arm carried by said driving-shaft and made to connect with the type-wheel shaft, two rocking levers arranged at opposite sides of the driving-shaft

and having their inner ends arranged to strike against the said shoulders of the driving-shaft, and pivoted key-levers having their inner ends arranged to actuate said rocking levers, substantially as described.

12. A type-wheel, an actuating gear and segment for the wheel, oppositely-located shoulders, and independent levers made to engage the shoulders and to lock the segment when at rest substantially as described.

13. A rocking frame 30, a type-wheel mounted in the frame, an actuating gear and segment for the wheel, said gear and wheel being also mounted in said rocking frame, oppositely-located shoulders, and independent levers made to engage the shoulders and to lock the segment when at rest, substantially as described.

14. A tilting type-segment, an actuating rack or segment therefor, combined with driving-levers made to move the actuating-segment independently of one another in opposite directions, and a lock for preventing tilting of the type-wheel, substantially as described.

15. A type-writing machine provided with a rocking bearing, shafts in said bearing at an angle to one another, a platen made to travel back and forth across the machine along a fixed rectilinear track, gears on said shafts, rotary driving shoulders and levers for one of the shafts, and retaining-springs for the driving-levers, substantially as described.

16. The combination with a type-wheel shaft, of a rocking driving-shaft provided with an attached plate having shoulders located at opposite sides of the driving-shaft, an arm carried by the latter and having a segment geared to the type-wheel shaft, two independent rocking levers arranged at opposite sides of the driving-shaft and having their inner ends arranged to strike against the said shoulders, and key-levers extended under the rocking levers for lifting the same, said shoulders being made to swing clear of one lever when actuated by the other lever, substantially as described.

17. A tilting frame, and a type-wheel on the frame, combined with an actuating gear and segment for the wheel, driving shoulders and levers for rotating the wheel, a rack-driving gear-wheel made to rotate with the type-wheel, a rack driven by said rack-driving gear, stop-pins for the rack, and keys for actuating the pins substantially as described.

18. A tilting frame provided with shafts, sleeves rotatable on the shafts, a type-wheel on one of the sleeves, driving-shoulders on the other sleeve, actuating-levers for the shoulders, and key-levers provided with pins for actuating the levers, said shoulders and type-wheel being geared together substantially as described.

19. A tilting frame having a type wheel or segment, an actuating gear or segment for rotating said wheel in opposite directions, com-

combined with driving-levers for moving the segment in opposite directions, a depending locking-arm for the frame, a locking-bail for the lock-arm, and key-levers for raising or unllocking the locking-bail substantially as described.

20. A tilting frame having a type-segment and actuating-gear therefor, shoulders for actuating the gear, driving-levers for the shoulders, a lock arm and bail for the frame, keys made to engage the bail to unlock the same, and pins actuated by the keys for actuating the levers and tilting the frame, substantially as described.

21. A tilting frame having a type-segment and actuating-gear therefor, shoulders for actuating the gear, driving-levers for the shoulders, a lock arm and bail for the frame, keys made to engage the bail to unlock the same, and pins actuated by the keys for actuating the levers and tilting the frame, and an adjustable stop for the lock-arm to arrest the backward swing of the same, substantially as described.

22. A frame having a type-wheel shaft, a type-wheel-carrying sleeve mounted about the shaft, a locking-disk and driving-gear on the sleeve at said type-wheel, a rack-driving gear at the front of said sleeve, a rack connected to the rack-driving gear, and driving mechanism substantially as described for the type-wheel.

23. A rocking or tilting frame, a type-wheel, an actuating-gear and segment for the wheel, oppositely-located shoulders, and independent levers made to engage the shoulders and to lock the segment when at rest, said frame having screws or adjustable stops for arresting the levers, substantially as described.

24. A type-writing machine provided with a frame having a shaft extended in the direction from front to rear of the machine and a type-wheel-carrying sleeve on the shaft, key-levers and actuating mechanism substantially as described for the type-wheel, a case-shifting lever for the shaft, and shifting-keys for the case-shifting lever, the latter having an arm made to engage or reach forward over

the keys to be directly actuated by the latter for moving the case-shift lever backward on the action of a key substantially as described.

25. A type-writing machine having keys, a type-wheel, a driving-segment for the wheel, a shaft carrying said segment, a tilting frame made to carry the type-wheel and the segment-shaft, a slotted bracket on said shaft and driving-levers located or fulcrumed above the keys and engaging slots in said bracket for propelling and positively returning said type-wheel, said segment being made to swing transversely to or across the machine, substantially as described.

26. A type-writing machine having keys, a type-wheel, a driving-segment for the wheel, a shaft carrying said segment, a tilting frame made to carry the type-wheel and the segment-shaft, a slotted bracket on said shaft and straight-armed driving-levers located or fulcrumed above the keys and engaging slots in said bracket for propelling and positively returning said type-wheel, substantially as described.

27. A platen, a type-wheel-carrying frame made to swing or rock toward the platen for printing, a frame-supporting shaft extending across the machine above the platen for allowing the wheel to print or strike down onto the platen, a stop-arm to which the type-wheel is geared, keys for actuating the wheel, and stops for said arm made separate from the keys, substantially as described.

28. A vibrating type-wheel frame, a longitudinally-adjustable transverse shaft for supporting the frame, a type-wheel carried by the frame, a stop-arm to which said wheel is geared, keys for actuating the wheel and frame, and stop-pins made separate from the keys for arresting the arm, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM P. QUENTELL.

Witnesses:

CHAS. E. POENSGEN,
E. F. KASTENHUBER.