

No. 698,318.

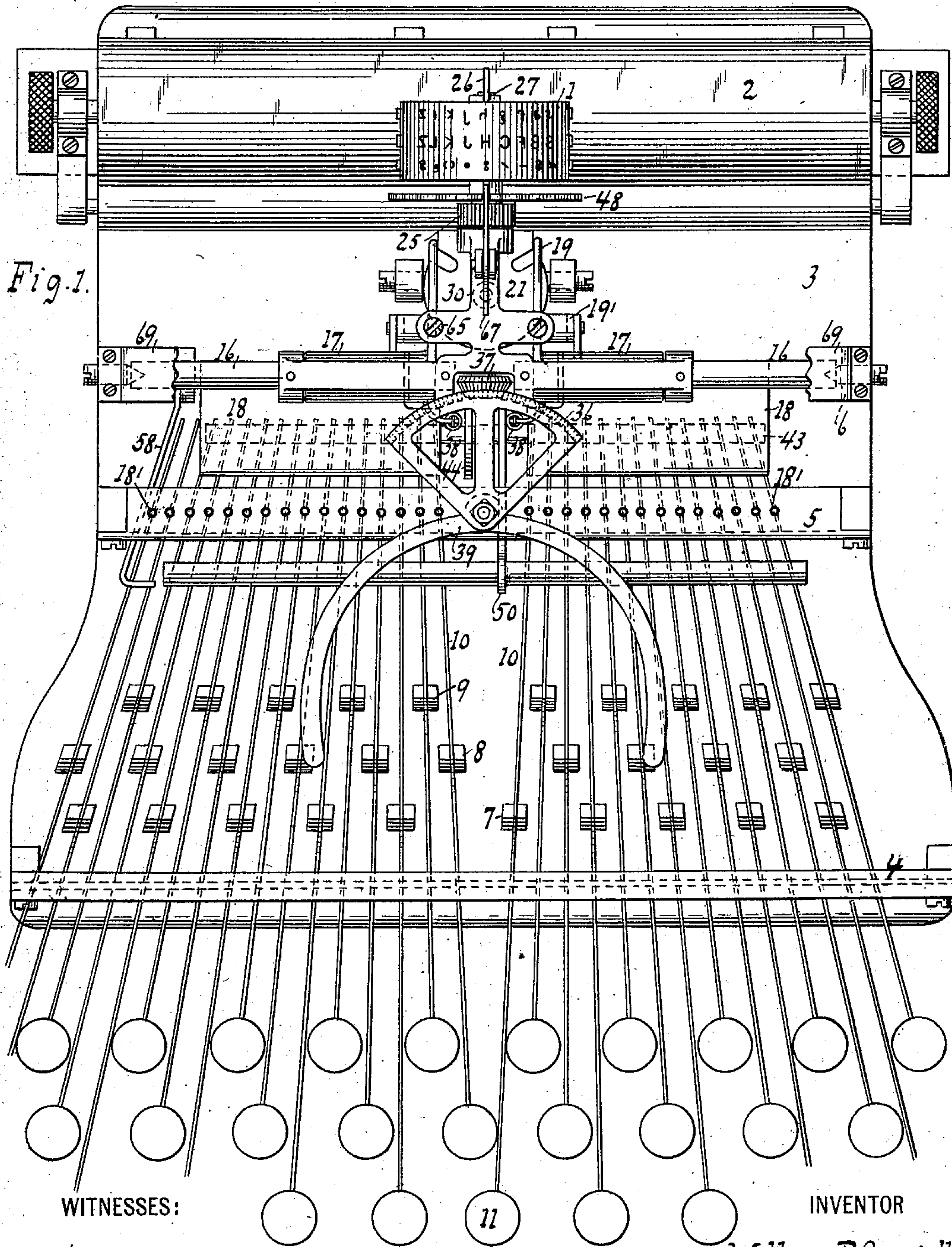
Patented Apr. 22, 1902.

W. P. QUENTELL.
TYPE WRITING MACHINE.

(Application filed May 29, 1901.)

(No Model.)

4 Sheets—Sheet 1.



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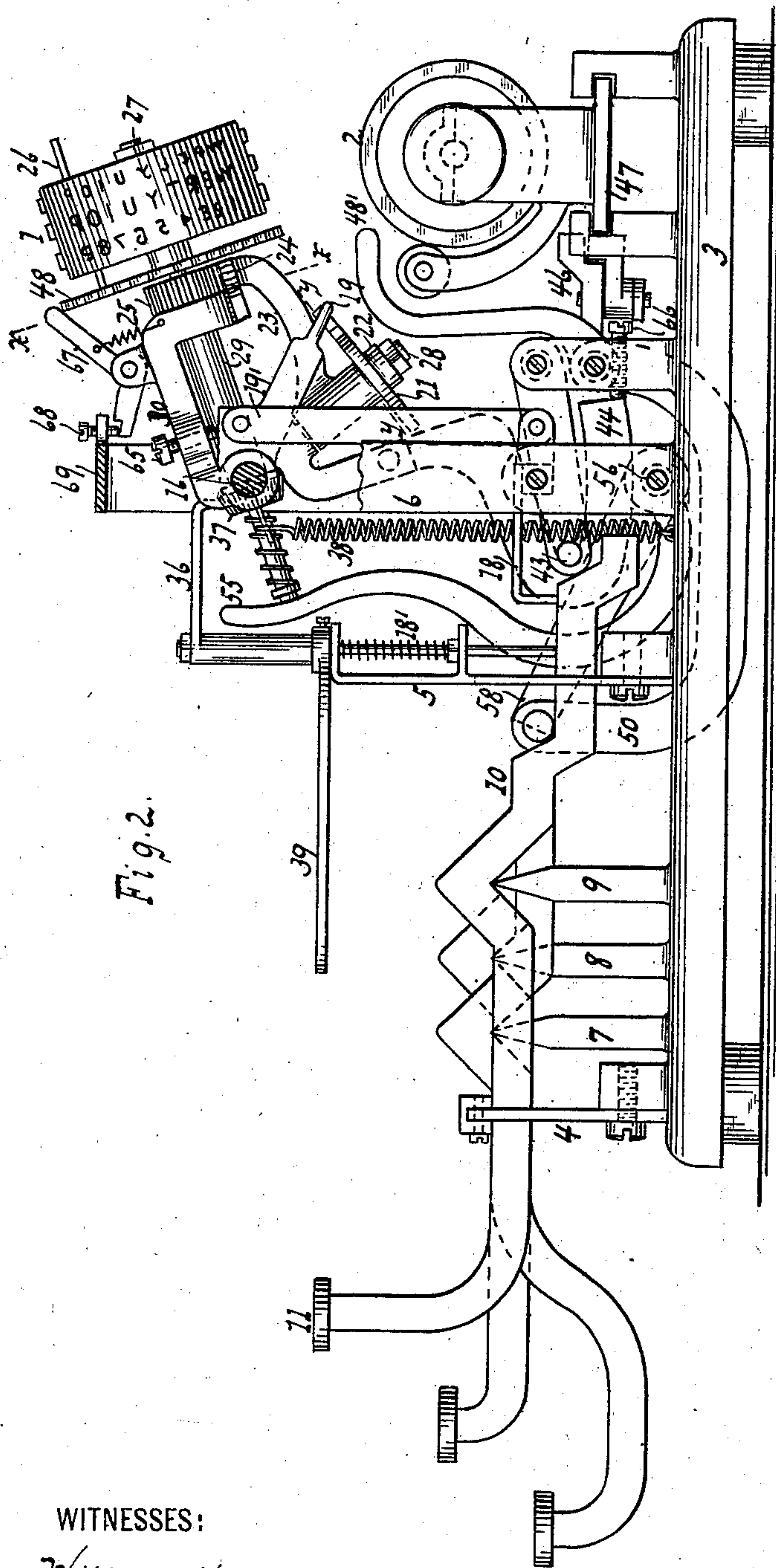


Fig. 2.

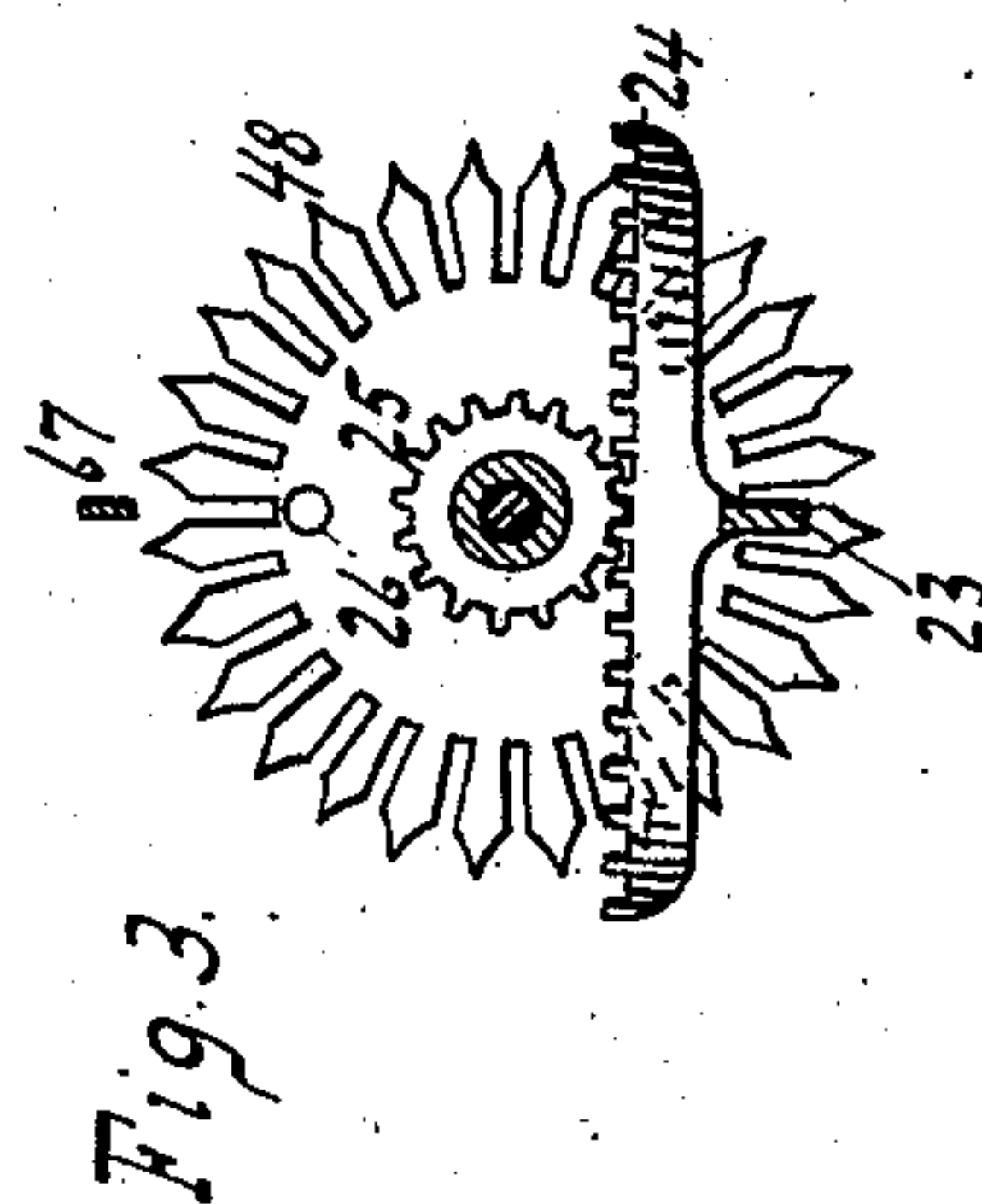


Fig. 3.

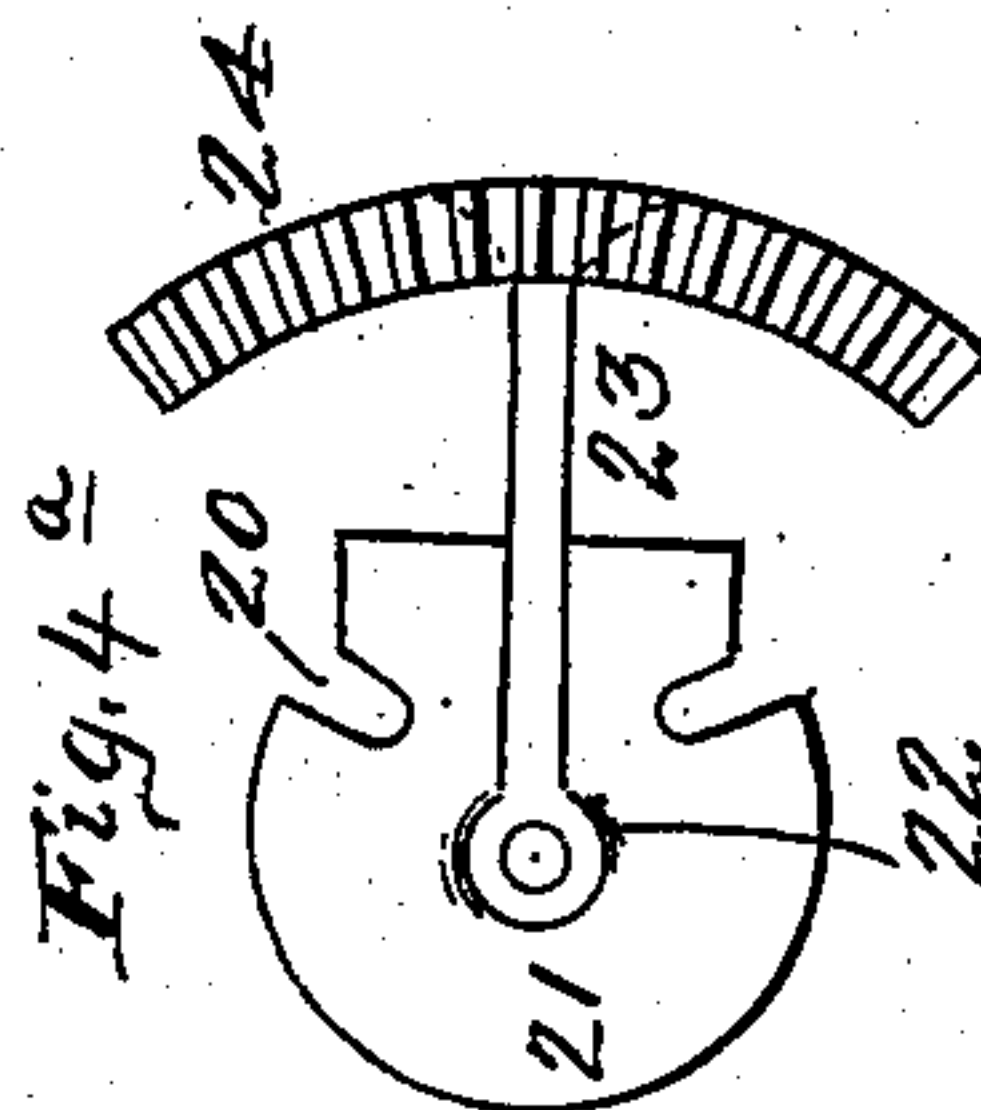


Fig. 4.

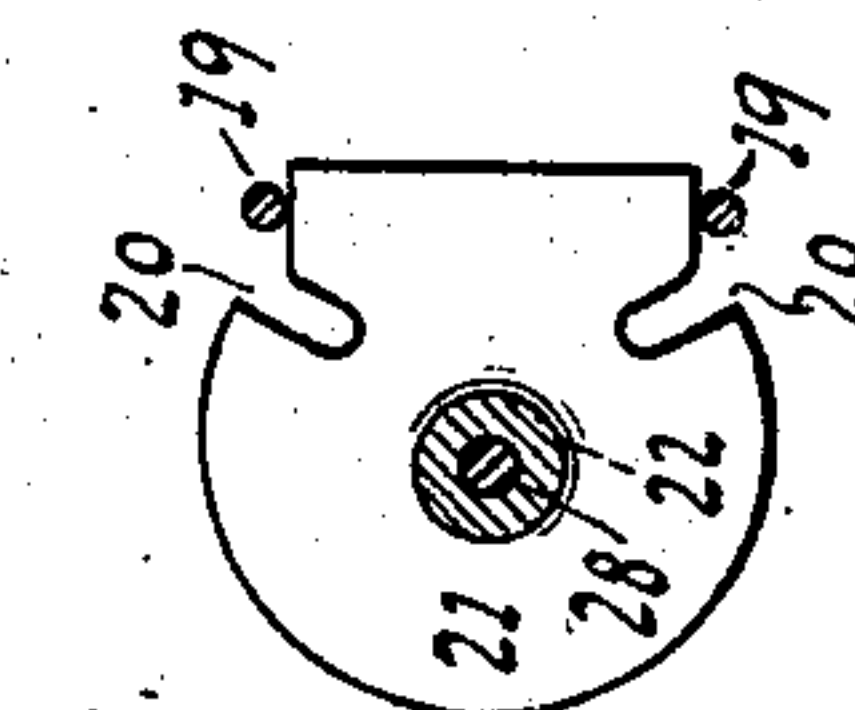


Fig. 4.

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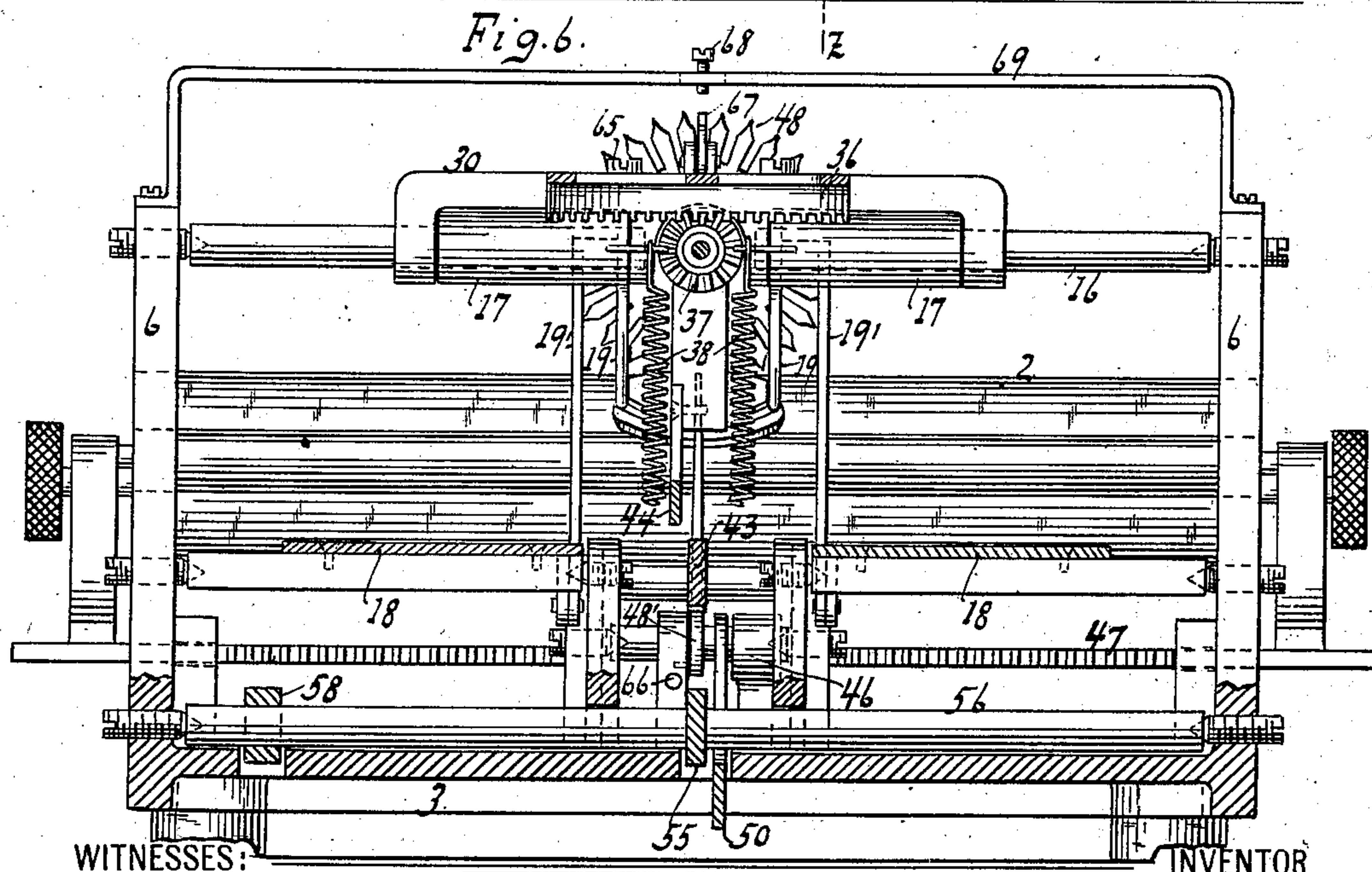
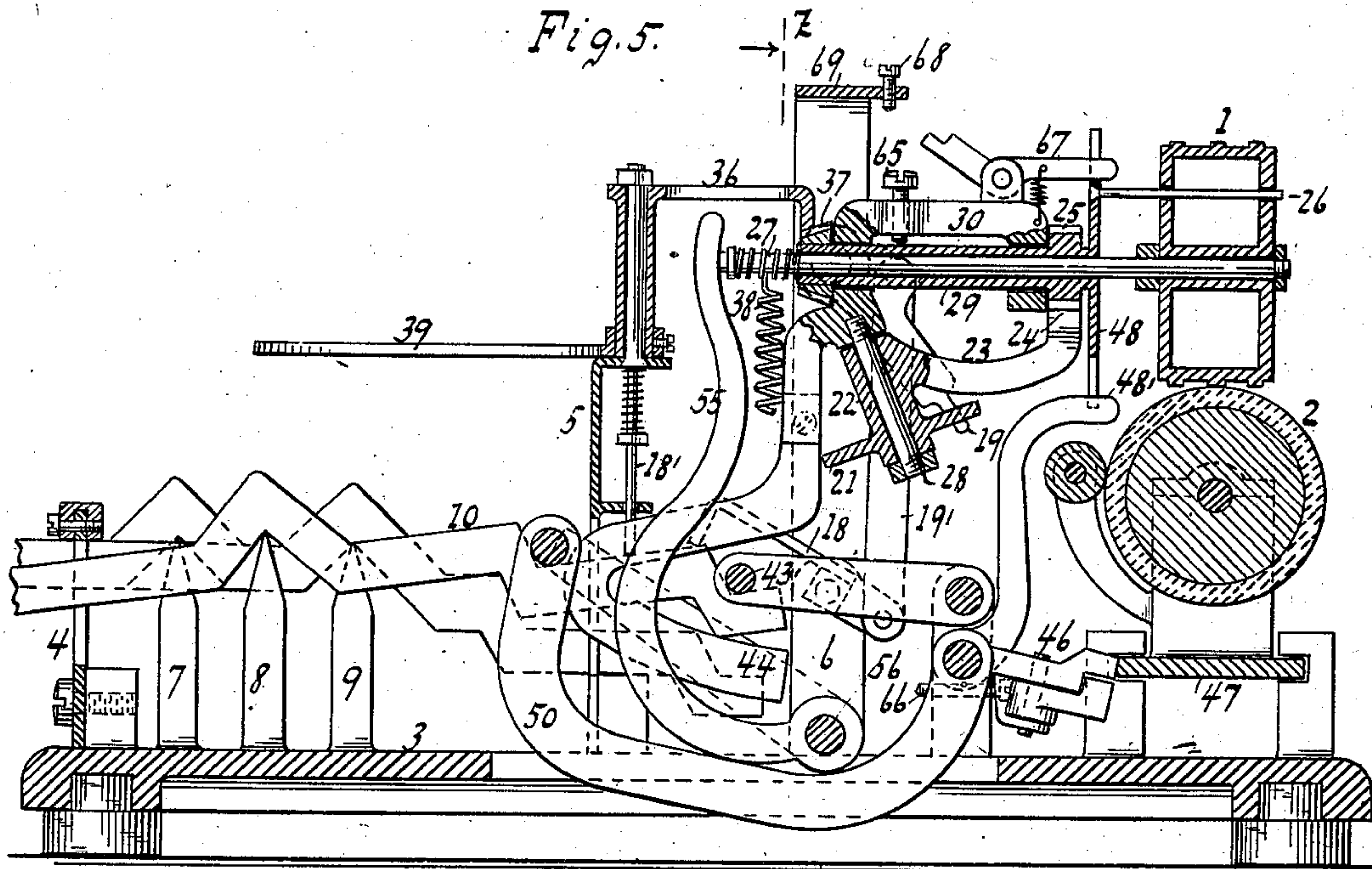
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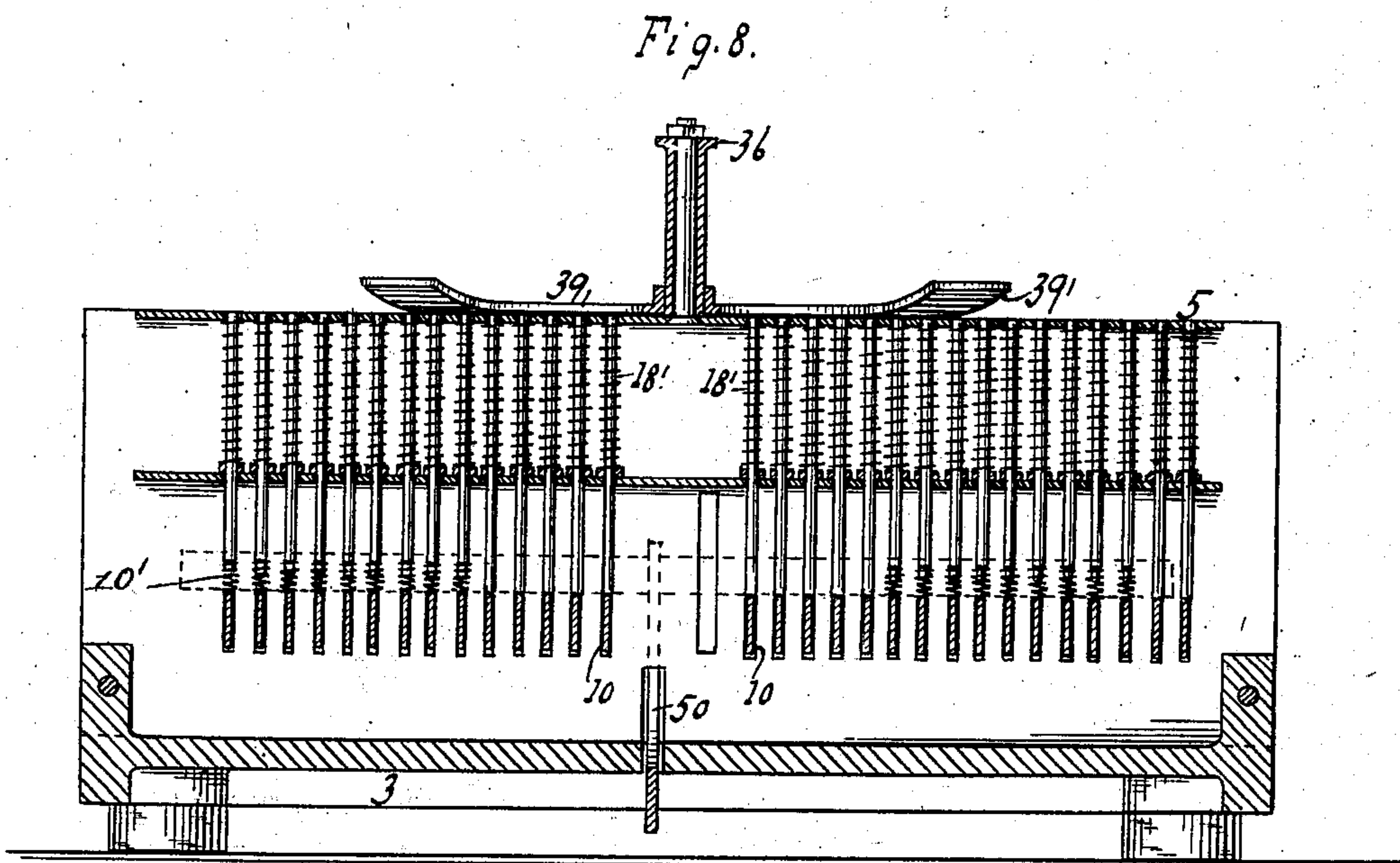
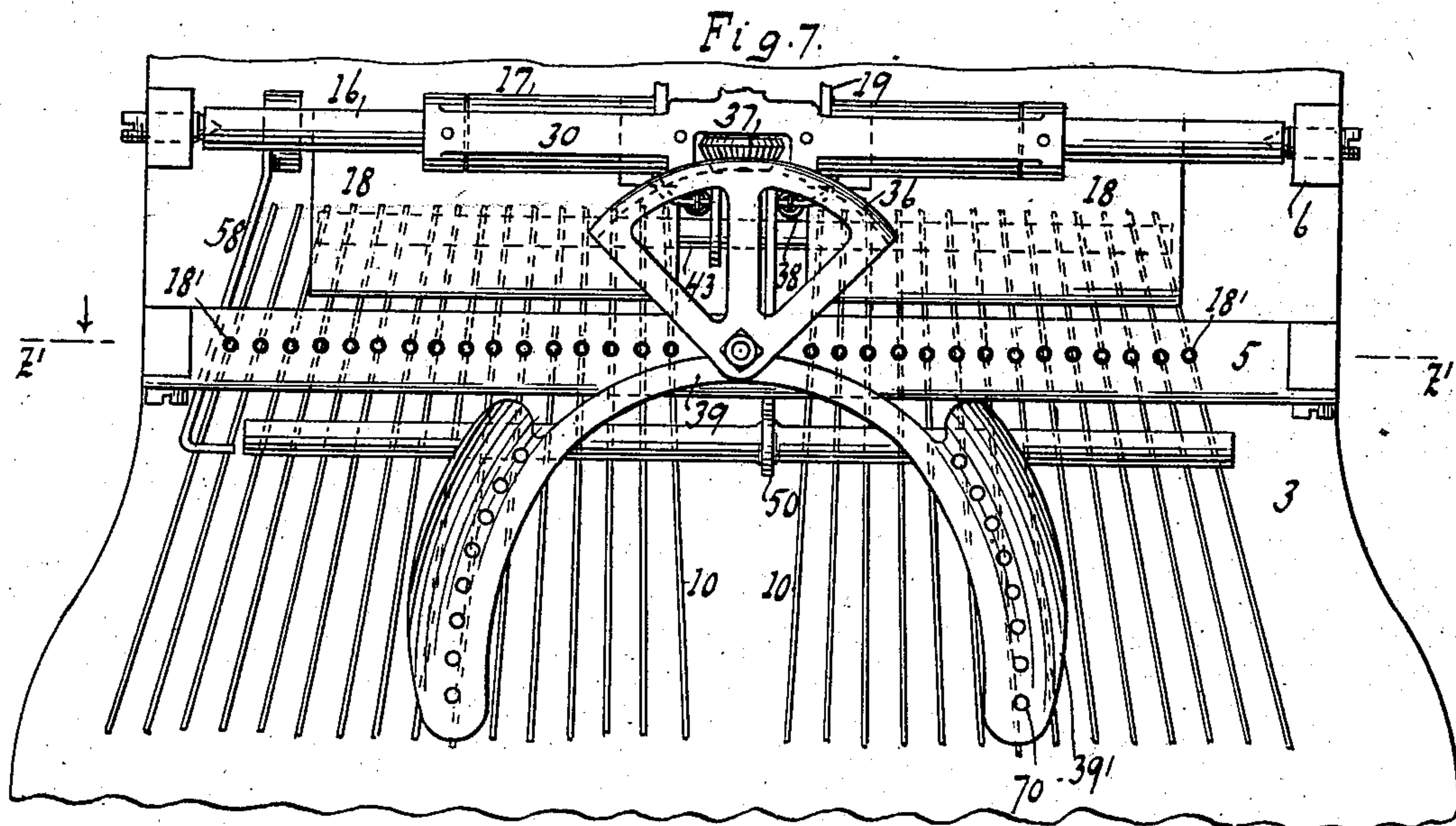
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4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

WILLIAM P. QUENTELL, OF NEW YORK, N. Y.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 698,318, dated April 22, 1902.

Application filed May 29, 1901. Serial No. 62,410. (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, county of New York, and State of New York, have invented new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention resides 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 Fig. 1. Fig. 3 is a section along $x x$, Fig. 2. Fig. 4 is a section along $y y$, Fig. 2. Fig. 4^a is a plan view of the type-wheel-driving segment. Fig. 5 is a sectional side elevation of Fig. 1, showing the type-wheel in the art of printing. Fig. 6 is a section along $z z$, Fig. 5. Fig. 7 shows a plan view of the machine with a type-arm having perforations or engaging portions by which such arm can be not only stopped, but also locked by a stop pin or pins. Fig. 8 is a section along $z' z'$, Fig. 7.

The machine is shown with a type segment or wheel 1, made to vibrate or give a printing motion or stroke on platen 2, which latter or its carriage travels on or across the base 3. The combs or guides 4 and 5, with fulcrums 7, 8, and 9, serve for the proper mounting and movement of key-levers 10, which can have finger-buttons 11, as usual.

The reference-numeral 6 denotes suitable risers or supports for the centers of a shaft 16. This shaft 16 is conveniently formed in two sections, which when in the machine the said sections have their inner ends joined by or mounted in a frame 30, which can be provided with suitable hub or recessed parts for seating the inner ends of the opposite sections of the said shaft 16. On the shaft 16 are sleeves or bearings 17, Fig. 1, of levers or arms 19, Fig. 2, connected by link 19' with lever or rather bail 18, Figs. 5 and 6, actuated by the key-levers. Two levers 19, with their respective parts, are shown; but the description of one explains the other. As one lever 19 or the other is actuated it strikes a shoulder 20, Fig. 4, on shoulder or disk 21, Figs. 1 and 2, so as to oscillate this piece with

rock shaft or sleeve 22, carrying arm 23, with segment 24 engaging gear 25 of the type-wheel or its shaft. As the gear 25 is oscillated one way or another, with disk 48 having connection by means of pin 26 with the type-wheel, the latter is turned or set to bring a required type to the printing position.

The type-wheel shaft 27 is shown with a sleeve 29 rotating with gear 25 and carried by frame 30, vibrated, as presently explained, for the printing stroke. With this sleeve rotates a pinion 37, engaging a segment 36, having an arm 39, adapted to be stopped or arrested by the pins 18', each of which is lifted or moved to stopping position by its respective key-lever when depressed.

When a key-lever is depressed, it lifts a pin and actuates levers 18 and 19, which latter rotate the type-wheel and pinion 37, so as to swing stop-arm 39 until stopped by the pin, which has been raised or brought by its respective key to arresting position. After the rotation of the type-wheel is stopped the continued pull of levers 10 and 18 causes frame 30 to swing so as to dip or strike the type-wheel against the platen.

The arm 39 and row of pins 18', extending each side of the center line of the machine, are shown not parallel with one another, but in curved relation to one another. It is evident that the arm and pins must be so arranged that the wheel can turn more or less to bring the required type to printing position before the arm or the rotation is stopped. The arrangement shown of a straight row of pins and a stop-arm with curved parts or branches or curved face to contact with the pins extending toward each side of the machine has been found compact; but of course the invention is not confined to this configuration, as any suitable arrangement can be applied.

A returning spring or springs 38, connected to a forwardly-projecting arm of levers 19 or their sleeves, can reset the parts after the key is released. The inner end of the key-levers, or rather the step-shaped portions forming such inner end, are adapted to lift or release a locking-bail 43, which is adapted to engage hook 44 or a depression in said hook, Fig. 5, and prevent premature tilting of the

type-wheel. On a key being depressed its pin 18' starts rising, and the respective lever 19 being actuated by link 19' and arm 18 will rotate the type-wheel, such rotating being stopped at the proper moment by arm 39, swinging right or left, striking the raised pin. The inner end of the key lifting or unlocking the stop 43 at the proper moment further depression of the key, with the resulting downward pull of link 19', will draw the frame 30, with wheel 1, to the platen. When the stop or bail 43 engages the arm or depending part 44 of frame 30, the latter is locked against vibration, so that the type-wheel cannot dip.

The spacing arrangement may be of any suitable kind, such as rack 47 and dog 46, actuated by arm 50, which latter is moved by the key-levers.

The pinion 37 is shown brought close to the center of vibration or shaft 16 of the type-wheel, so that the printing stroke will cause but slight vibration or shift of the pinion and loss of mesh with the segment or gear 36 is avoided. The segment 36, with its arm 39, has its pivot or fulcrum independent of the type-wheel-carrying frame 30, and such pivot can be mounted or carried on a comb-plate or any suitable riser or part of the machine.

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

The case-shifting movement of the type-wheel or its shaft 27 can be effected by a lever-arm 55, fulcrumed at 56.

The arm 48' is secured to a suitable part of the machine, and during printing the toothed disk 48 engages this arm to lock the type-wheel or secure accuracy.

The levers 19 when at rest or in normal position lie against stops or screws 65 on frame 30, and a stop 66 limits the upward swing of the type-wheel—that is, the backward swing of arm 44. These stops can be readily made adjustable, for example, by forming them of screws.

In order to lock the type-wheel when arm 39 has struck a stop and the wheel begins to dip, a lever, as shown at 67, Fig. 2, can be applied. This lever or blade is made to normally drop or spring to engagement with disk 48 of wheel 1, Fig. 5; but when this wheel or its frame 30 is raised or in normal position the blade 67 is held out of action to have wheel 48 and segment 1 rotate. When, however, frame 30 begins to dip, the blade 67 is carried away from stop 68, so that the blade will engage the toothed wheel 48. The stop 68 is readily formed by a screw placed in a bridge or cross-piece 69.

When arm 39 strikes a stop or pin 18' and arrests the axial motion of the wheel, a rebound may occur in case the key is struck very hard. Such rebound occurring just at the moment that frame 30 begins to tilt, the locking lever or blade 67 drops into a space or notch in disk 48, thus preventing the rebound being communicated to type-wheel 1, and when the disk 48 engages arm 48' the

type-wheel is held against oscillation, so that a neat print is assured or blurring avoided.

A modification is shown in Fig. 7 by which a rebound on the arm 39 striking a pin 18' can be prevented. According to this modified construction the stop-arm 39 has a beveled or inclined edge or face 39', and on coming against a pin said arm or its bevel slides or rides up on top of the raised pin until such pin locks or engages an eye or suitable part 70 of the arm to lock the latter and prevent rebound. The arm 39 is thus locked until the key is released or the pin 18' drops. The arm 39 can yield or spring so as to ride with its beveled face over or rise onto an elevated stop-pin, or such stop-pins can each have a spring or yielding support 10' resting on its respective finger-keys, so as to snap at the proper moment into a perforation or locking part of the stop-arm. The toothed disk 48 with pawl 67 at the type-wheel and the locking arrangement for preventing rebound of the stop-arm when striking a raised stop-pin can be used separately or can be applied together in one machine. It may be noted, however, that a lock preventing rebound of the stop-arm has been found sufficient in making practical tests.

As seen in Fig. 7, the bevel and locking eyes do not extend entirely up to the pivot-point 36, since in practice it has been found that the inner portions of arm 39, having to travel only a comparatively short distance before being arrested by a stop 18', do not rebound or at any rate so slightly as not to require a lock.

The subject-matter disclosed and not claimed in this application is disclosed and claimed in my copending application, Serial No. 52,596.

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

1. A movable type-wheel-carrying frame, a gear adapted when operated to impart movement to said type-wheel, a stop-arm, a segment connected with the arm, a pinion engaging said segment for operating it, and means for arresting the movement of said arm when operated by the segment.

2. A platen, a type-wheel-carrying frame made to swing or rock toward the platen for printing, a frame-supporting shaft extended across the machine above the platen for allowing the wheel to print or strike down onto the platen, a rotary 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.

3. A vibrating type-wheel provided with a pinion, a longitudinally-adjustable shaft for rockingly supporting the wheel, a stop-arm, a segment connected with the stop-arm and engaged by said pinion, and stops for the said arms, substantially as described.

4. A vibrating type-wheel shaft, a sleeve on the shaft, pinions on the sleeve, mechanism substantially as described for engaging one of the pinions to rotate the sleeve, a segment

provided with a stop-arm and engaged by the other pinion, and stops for the arm substantially as described.

5 A vibrating frame, a type-wheel shaft
carried by the frame, a sleeve on the shaft,
pinions on the sleeve, mechanism substan-
tially as described for engaging one of the pin-
ions to rotate the sleeve, a segment provided
with a stop-arm and engaged by the other pin-
ion, and stops for the arm substantially as
described.

6. A tilting frame, a transverse supporting-
shaft for the frame, a type-wheel shaft car-
ried by said frame, a pinion carried by said
shaft, a segment engaged by the pinion and
provided with a stop-arm, and stops for the
arm substantially as described.

7. A tilting type-wheel having a pinion, a
transverse shaft for supporting the wheel and
pinion, a segment provided with a stop-arm
and mounted independently of the type-wheel
and engaged by the pinion and stops for the
arm substantially as described.

8. A vibrating type-wheel-carrying frame,
a stop-arm mounted independently of the
frame and geared to the wheel, and stops for
said arm, substantially as described.

9. A vibrating type-wheel-carrying frame,
a stop-arm mounted independently of the
frame, a gear operating said stop-arm and con-
necting it with the wheel, said gear being bev-
eled or cut to remain permanently in mesh
and allow the wheel to rock to the platen while
the stop-arm remains at rest, substantially as
described.

10. A vibrating type-wheel frame, a shaft
for supporting the said frame, a type-wheel
carried by the frame, a rotary stop-arm to
which said wheel is geared, keys for actu-
ating the wheel and frame, and stop-pins made
separate from the keys for arresting the arm
substantially as described.

11. A type-writing machine provided with
a type-wheel, a shoulder-piece and arms for
rotating the wheel, and key-actuated levers
or bails located below and linked or jointed
to the arms for actuating the latter substan-
tially as described.

12. A type-writing machine provided with
a type-wheel, arms for rotating the wheel,
actuating levers or bails located below and
linked to the arms, and keys for actuating the
levers substantially as described.

13. A type-writing machine provided with
a type-wheel, arms for rotating the wheel,
actuating-levers below said arms and linked

to the latter, and key-levers having their in-
ner ends made to pass under the actuating-
levers to lift the latter substantially as de-
scribed.

14. A tilting type-wheel frame and a wheel
and pinion carried by the frame, combined
with a segment having a stop-arm, stops for
the arm, a lock for preventing premature tilt-
ing of the frame, and keys for actuating the
stops and freeing the lock substantially as
described.

15. A type-writing machine provided with
a tilting type-wheel frame having a type-wheel
and pinion, a stop-arm geared to the pinion,
stops for the arm, keys for actuating the stops,
arms and lever for rotating the wheel, and a
lock for preventing premature tilting of the
frame, said wheel-rotating lever and lock be-
ing both engaged by the inner end of the key
substantially as described.

16. A type-writing machine provided with
a wheel and keys, a driving-arm for the wheel,
a stop-arm separate from the driving-arm pro-
vided with a beveled or inclined edge and
with eyes, combined with pins, said arm be-
ing made to engage or lock the eyes to said
pins substantially as described.

17. A type-writing machine provided with
a wheel and keys, stop-pins having a spring
or yielding support on the keys, and a stop-
arm made to ride over or depress the pins
and to be locked on the rise or return of the
latter substantially as described.

18. A type-writing machine provided with
a wheel and keys, stop-pins actuated by the
keys and a stop-arm having a bevel or in-
cline made to swing clear of and to ride or
slide over the pins and an eye or locking por-
tion for the engagement of the pins substan-
tially as described.

19. A type-writing machine provided with
a rotary type-wheel and a stop-arm for the
wheel, combined with pins made to arrest and
lock the stop-arm against rebound and a
toothed disk engaging locking-pawl for
holding the wheel against oscillation, said
stop-arms being made to rest normally clear
of the pins 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.