

No. 897,269.

PATENTED SEPT. 1, 1908.

B. A. BROOKS.
TYPE WRITING MACHINE.
APPLICATION FILED JAN. 11, 1904.

6 SHEETS—SHEET 1.

Fig. 1.

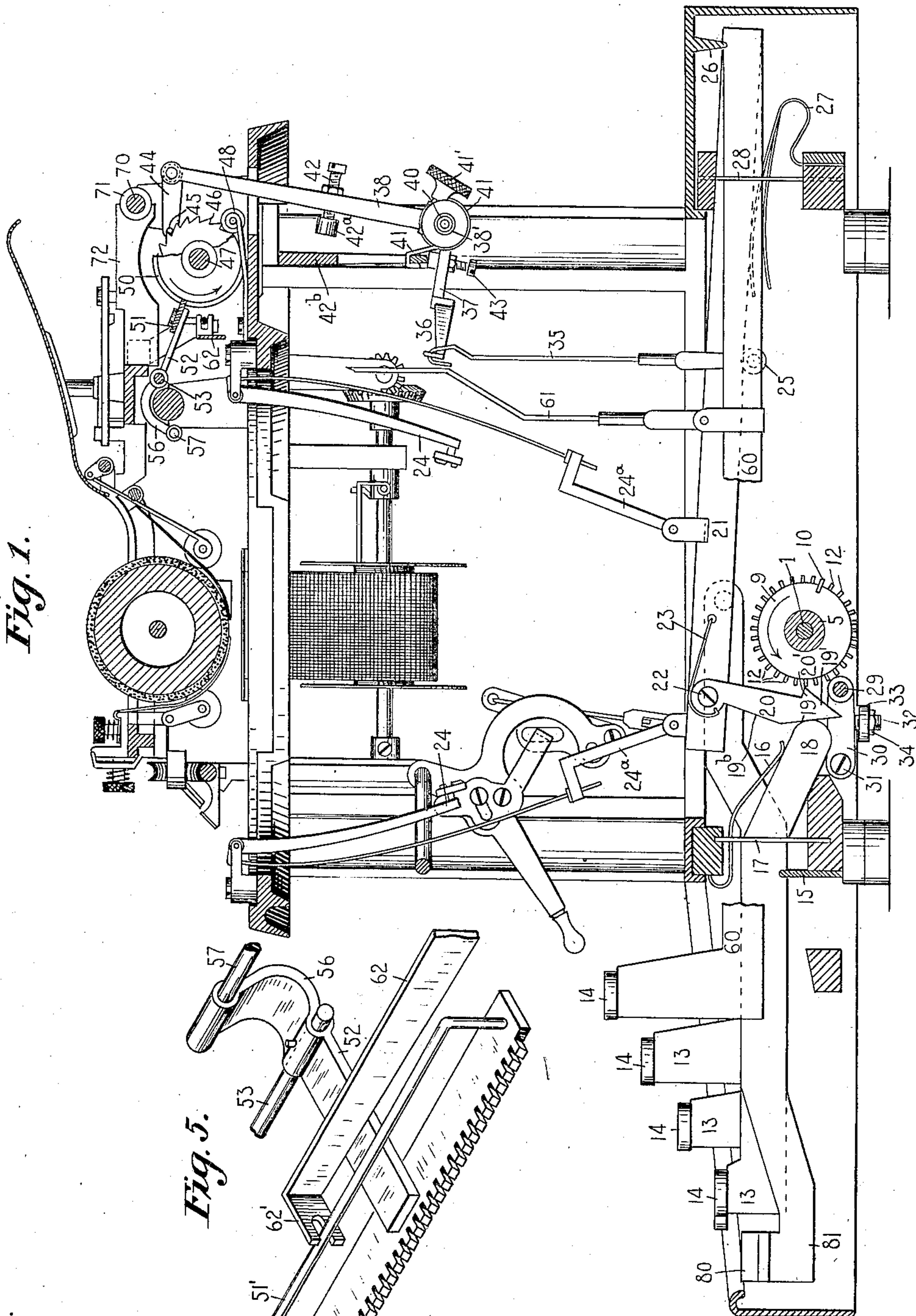
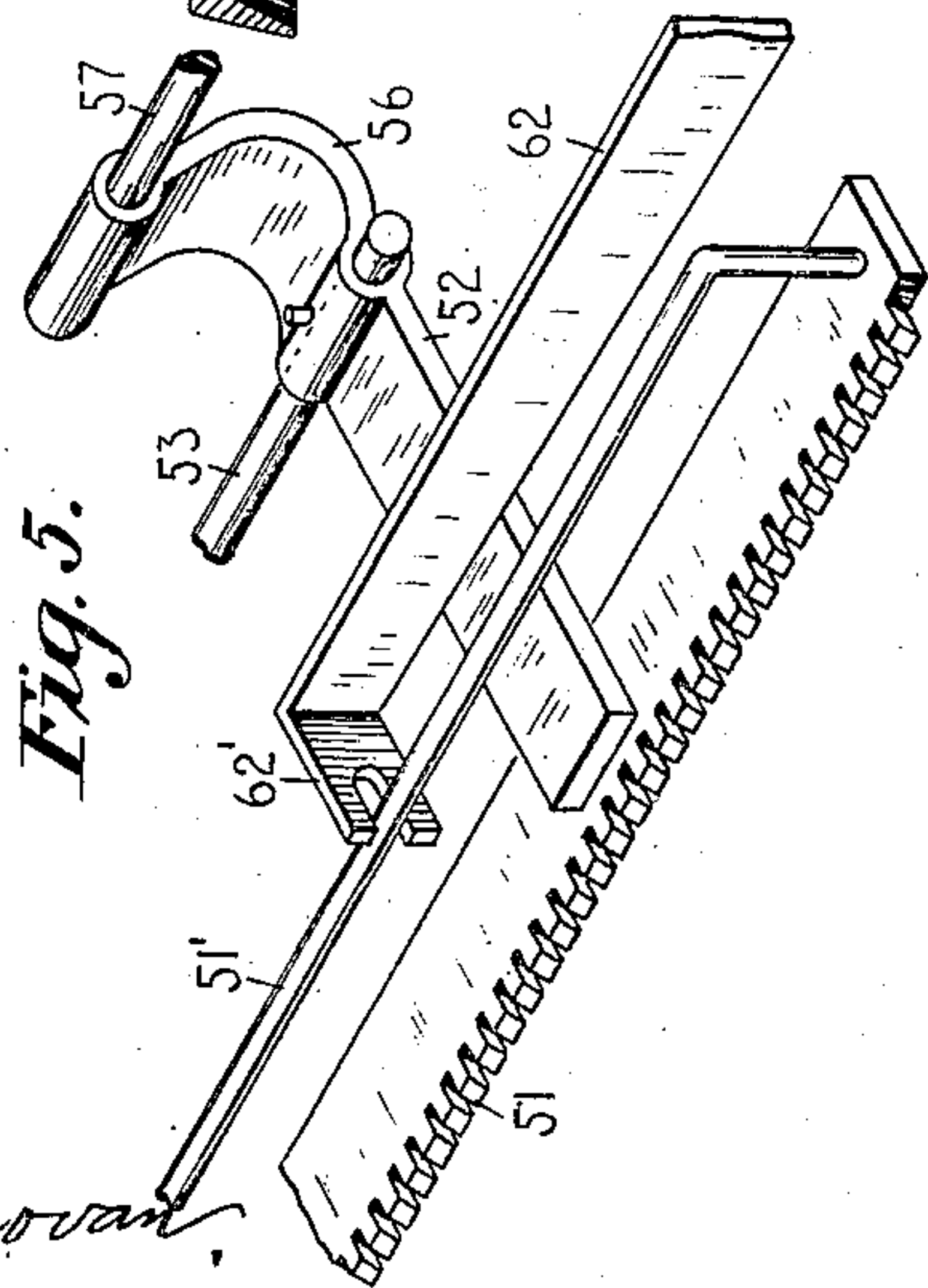


Fig. 5.



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5 SHEETS—SHEET 2.

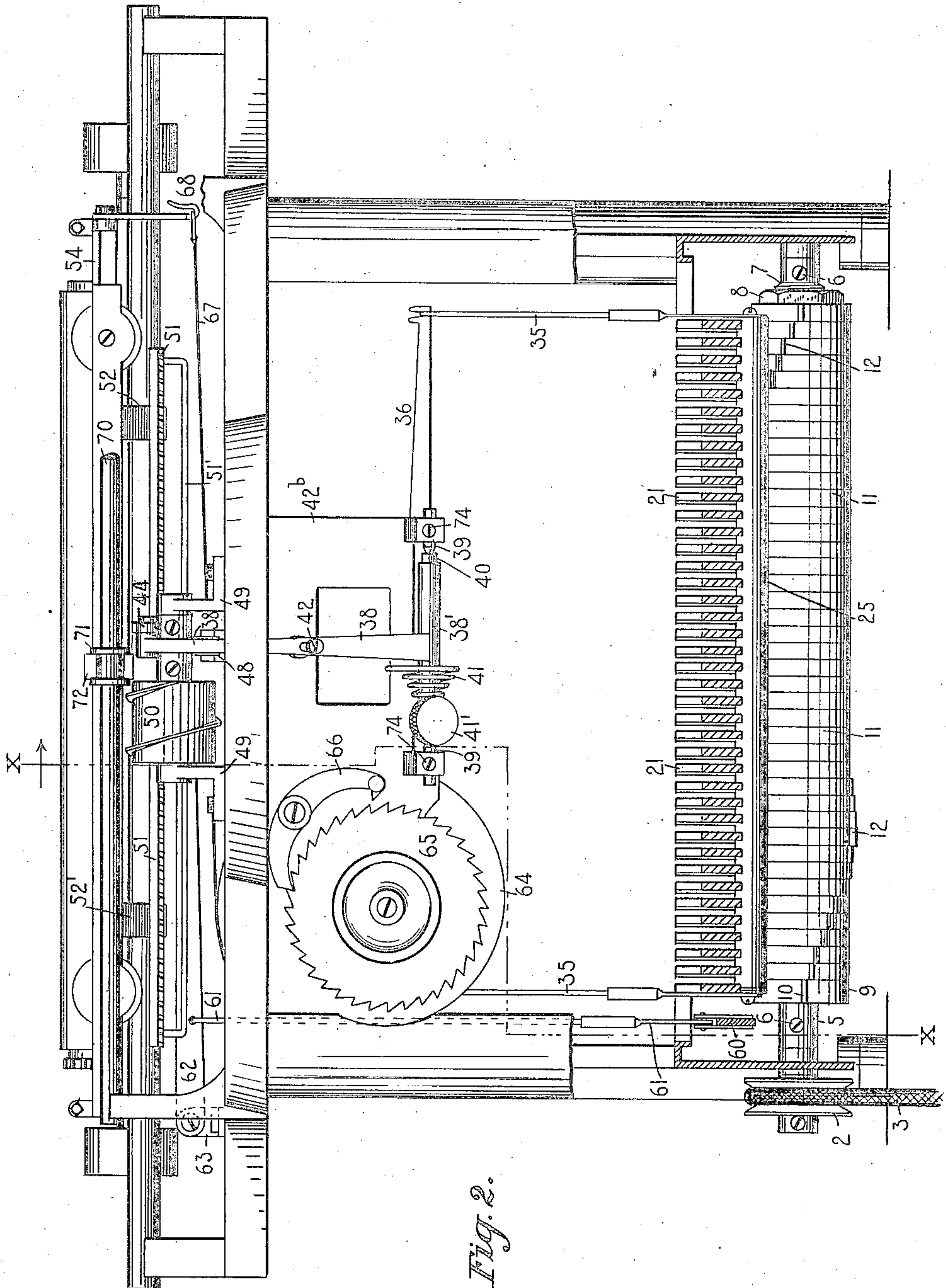


Fig. 2.

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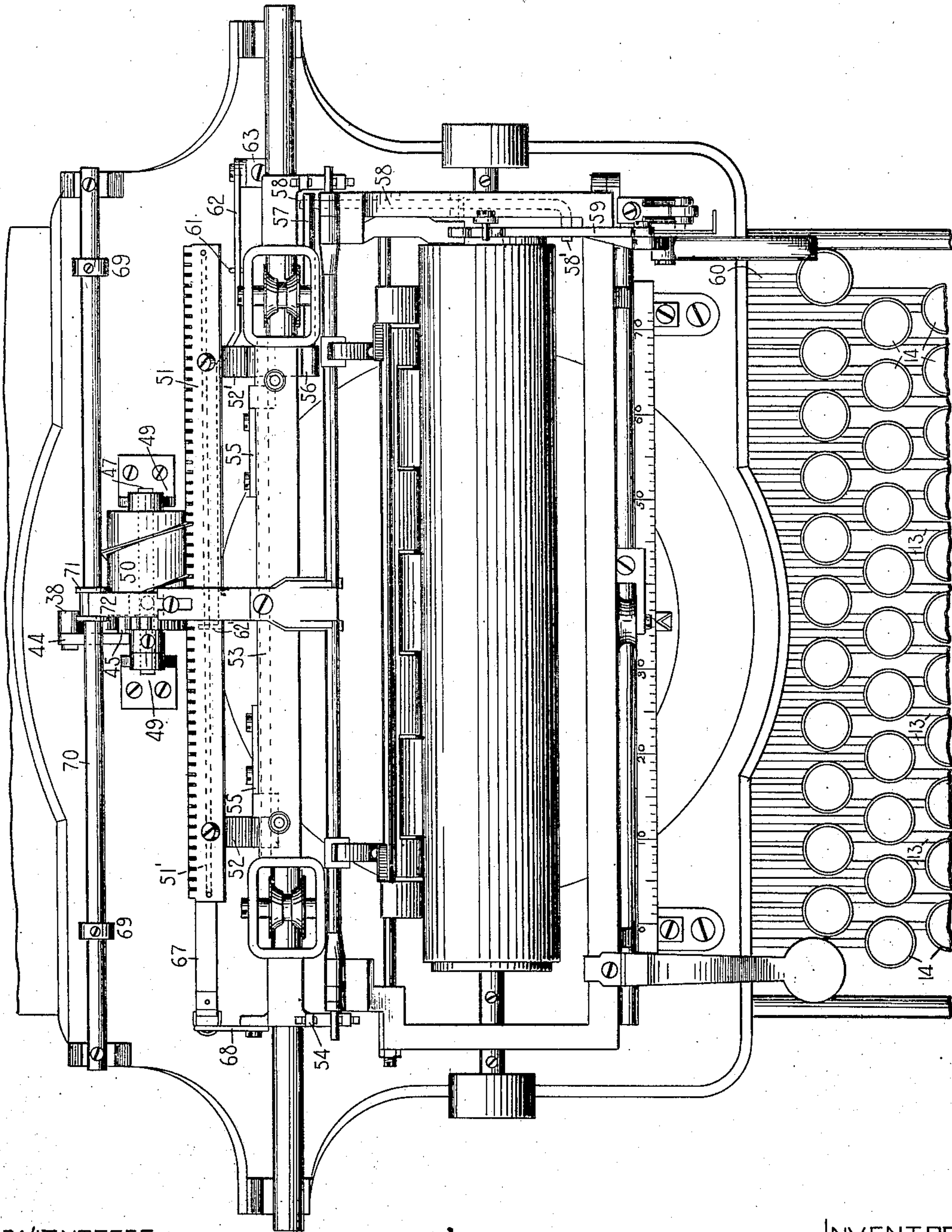
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5 SHEETS—SHEET 3.



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Fig. 3.

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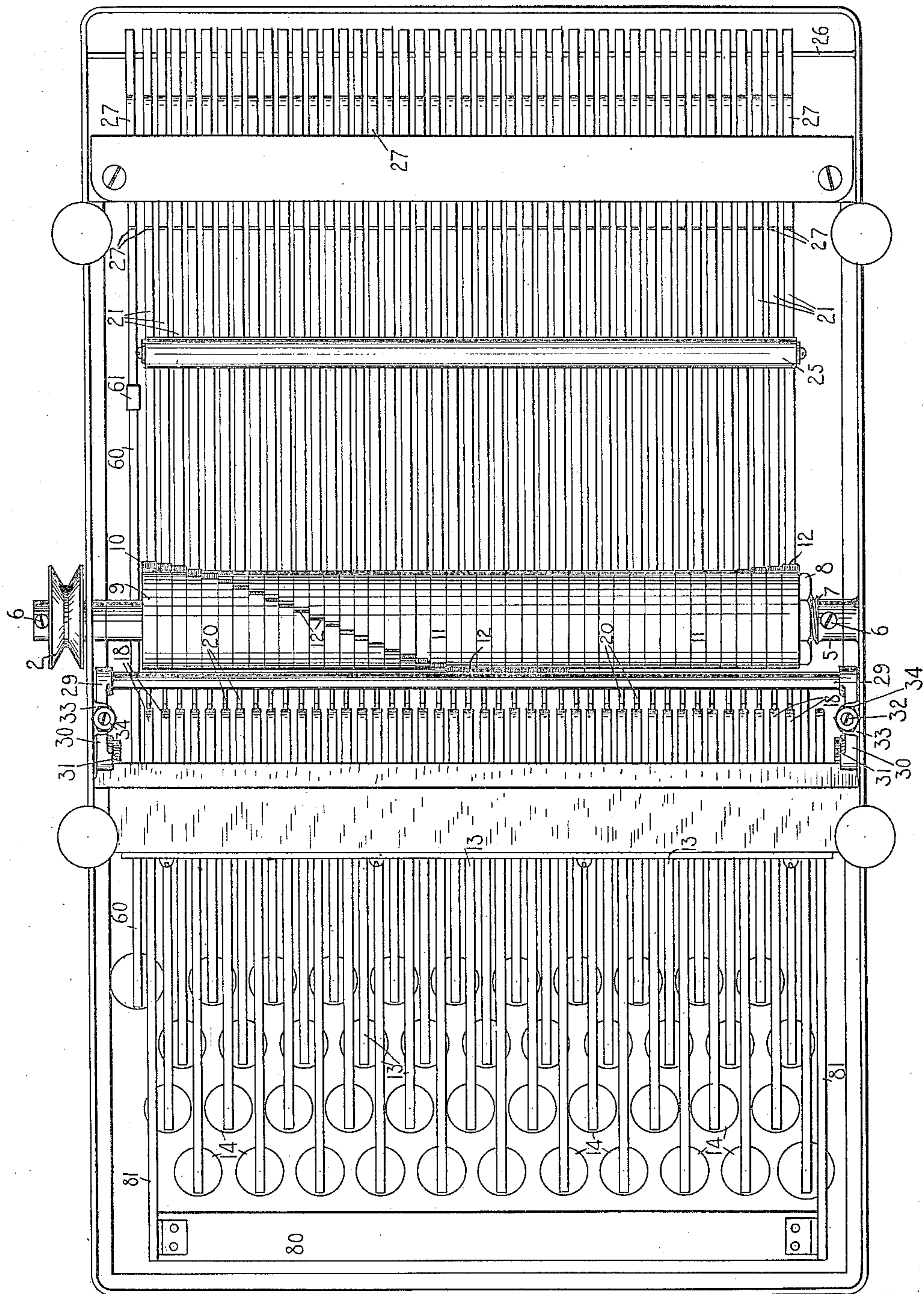
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5 SHEETS—SHEET 4.



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Fig. 4.

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5 SHEETS—SHEET 5.

Fig. 6.

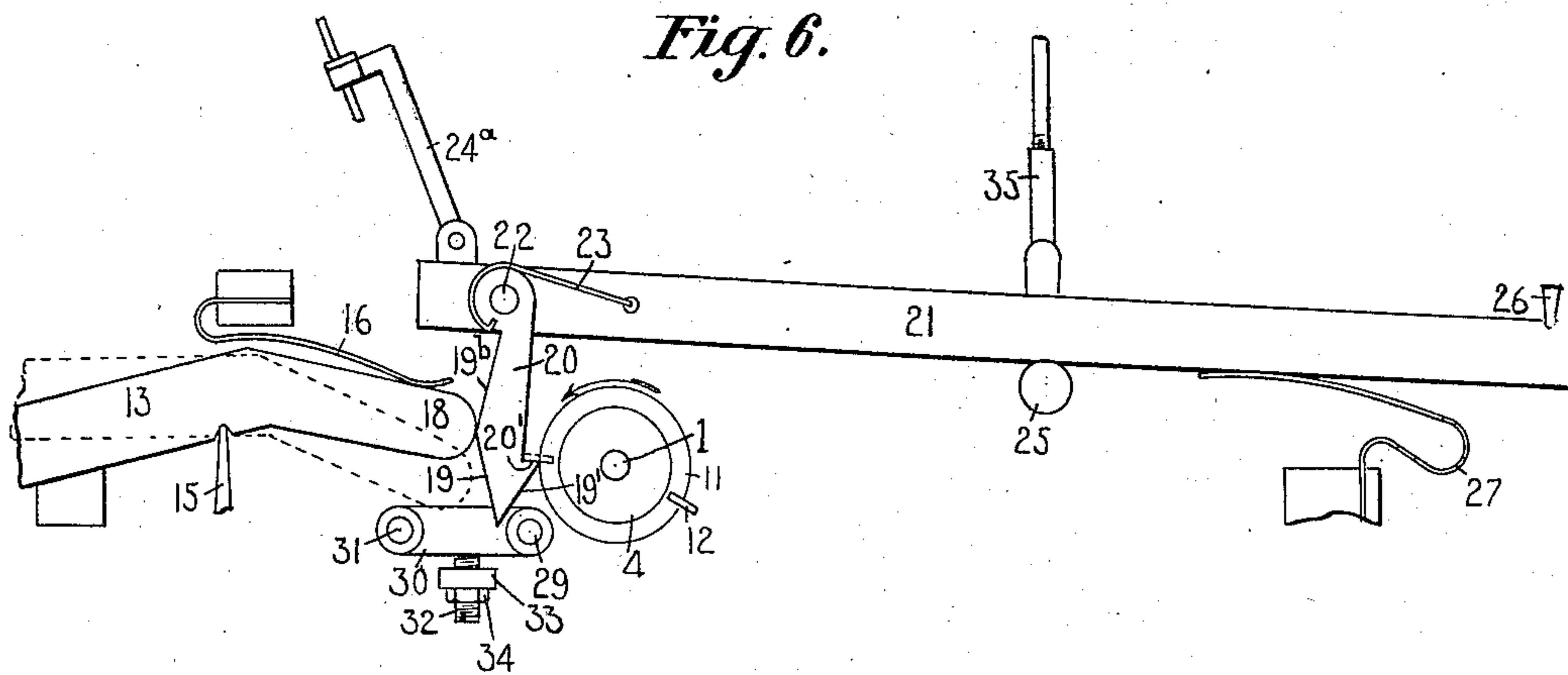


Fig. 7.

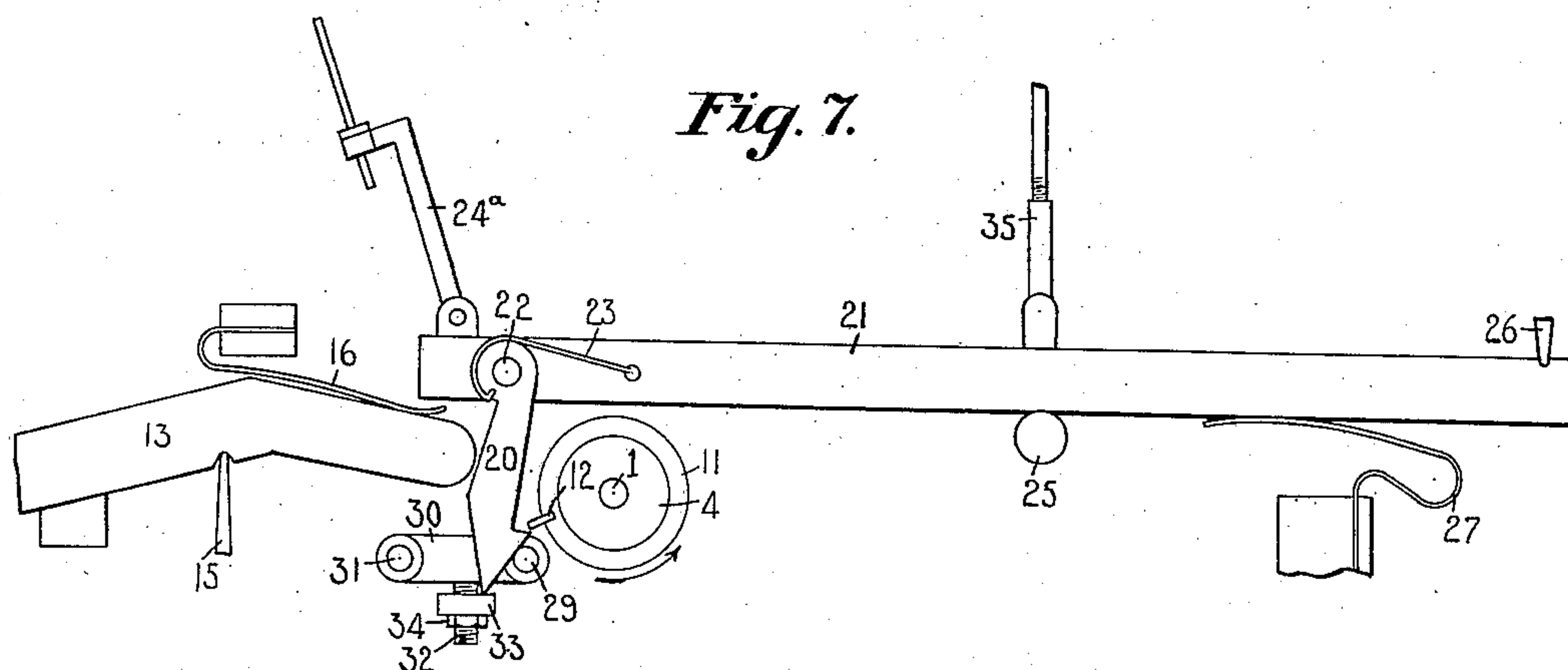


Fig. 8.

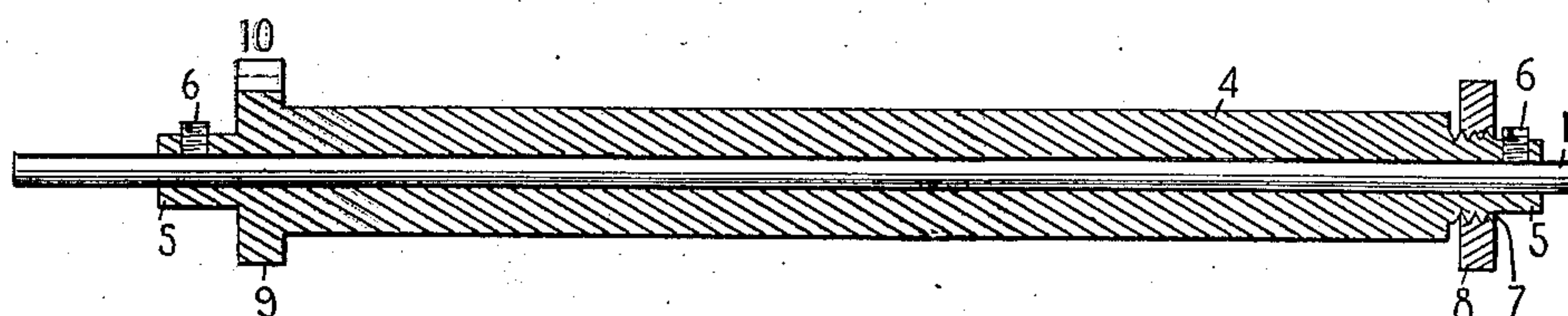
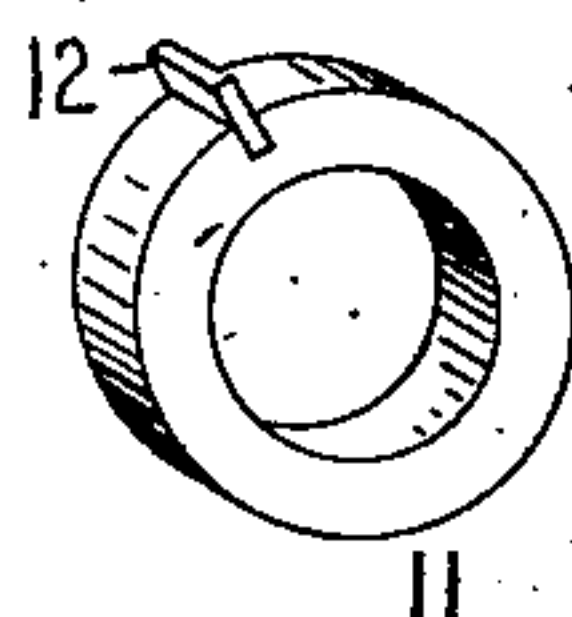


Fig. 9.



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UNITED STATES PATENT OFFICE.

BYRON A. BROOKS, OF NEW YORK, N. Y., ASSIGNOR TO UNION TYPEWRITER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

No. 897,269.

Specification of Letters Patent.

Patented Sept. 1, 1908.

Application filed January 11, 1904. Serial No. 188,656.

To all whom it may concern:

Be it known that I, BYRON A. BROOKS, citizen of the United States, and 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 typewriting machines and more especially to devices and means for the application of power to an ordinary typewriter, such, for example, as the Remington No. 2 or No. 6, whereby the operator is relieved of the bulk of the manual labor involved in the operation of the keys and entirely relieved of the return of the carriage to its starting point.

My invention consists in the features of construction and combinations of devices hereinafter more fully described and particularly pointed out in the appended claims.

In the drawings accompanying this specification and forming a part thereof, Figure 1 is a vertical longitudinal section of a typewriting machine with my improvements applied thereto. Fig. 2 is a rear view of the same with the base broken away to more clearly show the invention. Fig. 3 is a plan view of the machine. Fig. 4 is a bottom view of the same. Fig. 5 is a perspective view of a portion of the underside of the carriage propelling rack bar, one of its supporting arms and its shifting lever. Fig. 6 is a detail view of a key lever and cooperating mechanism. Fig. 7 is a similar view with the parts in different positions. Fig. 8 is a longitudinal sectional view of the ring carrying cylinder. Fig. 9 is a perspective view of one of the rings and its operating pin or stud.

In the different figures, the same numeral of reference is used to designate the same part.

The typewriter shown in the several figures is generally of the ordinary Remington construction but in this case has a transverse shaft 1 journaled in the sides of the base. This shaft has at one end outside of the frame a pulley 2 and motion is given the same by a belt 3, from any suitable source of power. The shaft carries a cylinder 4 running its entire length and having reduced portions 5—5 at each end, through which pass set screws 6—6 securing the cylinder to the shaft, one of these reduced portions being also threaded as at 7 for the reception of a

nut 8, the object of which will be referred to later. The end of the cylinder opposite to the threaded portion 7 and its nut is provided with an annular flange 9 carrying a flat projection or pin 10 which extends radially beyond the periphery of the flange. Clamped on the cylinder between this flange 9 and the nut 8 is a series of rings 11 equal in number to the key levers of the machine and whose outer diameters are the same as the flange 9.

Each of the rings 11 has a projection or pin 12 identical in character to that marked 10 on the flange 9, and as seen in Figs. 1, 2 and 4, the rings are so placed on the cylinder that the pins 10 and 12 describe a spiral line around the cylinder from end to end and are retained in this position by the nut 8. The constantly rotating drum thus described constitutes a power driven member to which any of the type bars may be connected.

The key levers 13 of the machine constitute a selecting means to determine which type bar shall be operated by the power driven member. They are provided at their outer ends with the usual buttons or keys 14, are fulcrumed on a transverse bar 15, and have springs 16 to restore them to their normal positions and are held against lateral movement by a transverse comb or set of pins 17. Their inner ends 18 are rounded to play against the inclined faces 19 of depending dogs or couplers 20. These dogs 20 are pivoted to the outer ends of the type bar actuating levers 21 at the points 22 and have at their pivotal portions springs 23 which force their free ends outward and tend to keep the faces 19 in contact with the ends 18 of the key levers 13. The type actuating levers 21 are connected to the type bars 24 by rods or links 24^a of well known construction. The levers 21 bear upon the universal bar 25, are fulcrumed on a bearing rib 26, and have returning springs 27 and are held from lateral play by a comb or set of pins 28.

By referring to Figs. 1, 6 and 7, the operation of the keys and type bars may be seen. The shaft 1 with its cylinder and rings is kept in constant and rapid rotation by the power belt 3 and when a key 14 is struck, the end 18 of the lever 13 rides over the face 19 of the dog 20, forcing it inward towards the cylinder and its nose 20' in the line of its corresponding pin 12 on one of the rings 11, or the pin 10 on the flange 9. The rapid movement

of the shaft carries the pin into almost immediate engagement with the nose 20' and forces the dog down, carrying with it the type actuating lever 21. The key lever in forcing the dog 20 inward, completes its work, the remainder of the operation being all performed by the power shaft. The dog on being caught by the pin is carried past the range of the lever and its front bevel edge 19' is brought into engagement with a transverse bar 29 by which it is cammed free from the pin. The bar 29 is arranged parallel with the cylinder shaft and is carried in the outer ends of crank arms 30—30 pivoted to the sides of the base of the machine at the points 31—31. These arms 30—30 are adjustable by means of screws 32—32 carried by inwardly projecting brackets 33—33 and held at certain points of adjustment by lock nuts 34—34. By this adjustment of the bar 29, the point at which the dog 20 is released from its pin may be varied, thus regulating the stroke of the type bars for varying thicknesses of paper, as in manifolding work, etc. When the dog 20 is released from its pin, it permits the immediate return of the type lever and type bar to their normal positions unless for some reason the key lever has not been released. The key lever on being released assumes its normal position, the type-actuating lever rises, and the end 18 of the key lever again bears on the face 19 of the dog 20, as shown in Fig. 1.

Although I have here referred to but one key lever, dog and type lever, it is obvious that this operation may be repeated by any of the key levers, dogs and type levers. The rapid motion of the cylinder causes its pins to catch any of the dogs during the movement of the end 18 of the key lever up the face 19 and before the said end comes to a rest on the angle formed by the face 19 and its adjacent face 19^b on the dog 20.

The universal bar 25 carries two adjustable rods or links 35—35 connected at their upper ends with the cross arms 36—36 of the rocking arm 37 which actuates the lever 38, the arm and the lever being provided with a common hub 38' secured to a shaft 40 journaled on adjustable bearing screws 39—39. The hub 38' has an adjustable tension spring 41 encircling it to return the lever 38 and its connected parts. This spring is of the usual character employed to return the escapement dogs of a typewriter and its tension is varied by the adjusting screw 41'. The lever 38 carries an adjusting screw 42 provided with a leather buffer 42^a which is adapted to strike a plate or bracket 42^b depending from the top plate of the machine and thus limit the forward vibration of the arm or lever 38. The rocker arm 37 also has an adjusting screw 43 to regulate its upward movement and the rearward movement of the lever 38. Pivoted to the upper end of lever 38 is a

pawl 44 which carries near its free end a lateral pin 45 which engages a ratchet wheel 46 mounted on a shaft 47 and having a detent 48 to retard its backward motion.

The shaft 47 is carried by two uprights or standards 49—49 and besides the ratchet wheel 46, it has secured to it a worm 50 which engages a rack bar 51 carried by two supporting arms 52—52'. These arms 52—52' are attached to and secured on a swinging rod 53 running the length of the carriage 54 and hung in bearings 55—55 attached thereto. The right-hand supporting arm 52' has an extension 56 which carries a rod 57 lying on the inner end of a lever 58 pivoted to one end of the carriage and having its outer end 58' in the path of the downward movement of the line spacing pawl 59.

The right-hand side of the machine is provided with a key lever 60 which runs to the rear of the machine and is fulcrumed on the bearing rib 26. It is held in place by one of the springs 27 and has pivoted to it an adjustable link 61 which passes up through the top plate of the machine and is pivoted to a lever 62. The lever 62 is pivoted to a standard 63 on the top plate and its outer end 62' is bent at right angles and forked for the reception of a bail or rod 51' carried along its lower side by the rack bar 51. The depression of the lever 60 carries down the link 61 and the lever 62, causing the rack bar 51, its arms 52 and the rod 53 to swing in the bearings 55—55 and throw the rack bar out of engagement with the worm 50.

With each movement of the universal bar and turn of the worm, through the agency of the rocking bar and lever with pawl 44, the carriage is caused by a forced feed to move along the top of the machine, carrying the platen with it. Its return is caused by a spring drum 64 of usual construction with a ratchet wheel 65 on the shaft, to which one end of the spring is attached, and pawl 66 to increase or reduce the tension of the spring. The drum carries a strap or band 67 attached to a hook 68 on the forward end of the carriage 54 and the tendency of the spring is to draw the carriage to the right-hand end of the machine. When the rack bar 51 is depressed, throwing it out of gear with the worm 50, the carriage is released and yields to the action of the drum 64, returning to the starting point. The movement of the carriage in either direction is limited by collars 69—69 secured at desired points on a rod 70, cooperating with a sleeve 71 which is controlled by the forked arm 72 projecting from the rear of the carriage.

The rod 57 which is connected with the line spacing pawl 59 by the pivoted lever 58, is to effect the automatic release of the carriage and its return to the starting point, whenever the said pawl is depressed to turn

the platen for a new line. The outer end 58' of the lever 58 is acted upon and depressed by the pawl and the inner end elevated. This also elevates the rod 57 and then causes the supporting arms 52—52' and the shaft 53 to rock and throw the rack bar 51 out of engagement with the worm 50.

The bearing screws 39 are carried by the rear wall 42^b of the machine and set screws 74—74 hold them in place when they are adjusted.

The cylinder 1 rotates continuously while the machine is in use and the springs on the various levers and dogs tend to keep them in their normal positions. The speed of the movement of the carriage may be determined by the throw of the pawl 44 and this is regulated by the adjusting screws 42 and 43.

The space bar 80 runs across the front of the keyboard and is carried by arms 81 pivoted on the flange 15 like the key levers. One of said arms 81 coöperates with a dog 20 and lever 21, but this lever of course does not operate a type bar.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a typewriting machine, the combination with a printing mechanism and a power driven member for operating the same, of a coupler pivoted to a portion of said printing mechanism and adapted to be moved by said power driven member, and a key lever having a cam portion for moving said coupler on its pivot to bring it into engagement with said driven member.

2. In a typewriting machine, the combination of a series of type bars, a series of keys for said type bars, means controlled by the keys for operating said type bars by power other than that applied to the keys, and mechanical means adjustable to regulate the force with which said power operating means operates the type bars.

3. In a typewriting machine, the combination with a series of type bars, a series of operating levers, one for each bar, and a series of couplers, one for each lever, of a power driven shaft having fixed thereon a series of rings, one for each of said couplers, each ring having a lug for operating its coupler.

4. In a typewriting machine, the combination with a series of type bars, of operating means therefor comprising a series of couplers, one for each bar; and a power driven drum having lugs on its surface, one for each coupler; said lugs being arranged in different angular positions about said drum, whereby no two type bars can be operated at the same instant.

5. In a typewriting machine, the combination of a printing mechanism, a power driven member for operating said printing mechanism, a coupler for coupling said printing mechanism to said driven member, and ad-

justable means for disengaging said printing mechanism from said driven member at different points to regulate the force of the operation of said printing mechanism.

6. In a typewriting machine, the combination with a type carrier and a continuously rotative power driven member for operating said carrier, of adjustable means for varying at will the amount of power transmitted from the driven member to the type carrier.

7. In a typewriting machine, the combination with a type carrier and a power driven member for operating said carrier, of a coupler movable into engagement with the driven member to connect the type-carrier thereto, and means adjustable to vary at will the distance through which the coupler and the driven member are in engagement to regulate the power transmitted to said type carrier.

8. In a typewriting machine, the combination with a series of type bars, of means for operating said bars comprising a power driven member, a series of couplers for connecting any one of said bars to said member, a bar for disengaging the couplers from the member, said bar being adjustable to disengage said couplers at different points.

9. In a typewriting machine, the combination with a carriage and a series of types, of power driven means for operating said type to print one character at a time, means for positively feeding said carriage step-by-step through said power driven means as each character is printed, and a spring for returning said carriage to starting position.

10. In a typewriting machine, the combination with a carriage and a series of type bars, of a series of power driven operating levers for operating said type bars, step-by-step forced feeding means for said carriage, positively operated by said power driven operating levers against the tension of a spring, said spring operating to return the carriage to starting position.

11. In a typewriting machine, the combination with a carriage and power driven means for printing characters one at a time, of power driven means for imparting a forced step-by-step feed to said carriage as each character is printed, means for freeing said carriage, and a spring for automatically returning said carriage to starting position.

12. In a typewriting machine, the combination with a carriage and power driven means for printing characters one at a time, of power driven means for imparting a forced step-by-step feed to said carriage as each character is printed, a special key for disconnecting the carriage and its feeding means, and a spring for returning the carriage to starting position.

13. In a typewriting machine, the combination with a carriage and a series of types for printing different characters, of power

driven means for effecting the printing of characters one at a time, selecting devices for determining which character shall be printed, a feed mechanism operated by the power
 5 driven means for effecting a forced feed of the carriage step-by-step as each character is printed, and a spring for returning the carriage to starting position.

14. In a typewriting machine, the combination with a carriage and a series of type
 10 bars, of a power driven member, a series of keys for connecting the respective type bars to the power driven member, a feed device operated by the power driven member to effect a forced feed of the carriage step-by-step
 15 as each type bar is operated, and a spring for returning the carriage to normal position.

15. In a typewriting machine, the combination with a power driven cylinder, of a series of dogs, a series of keys for pressing the
 20 dogs into engagement with the cylinder, and a bar for disengaging the dogs from the cylinder, each dog having a cam portion cooperating with the key when in normal position, a second cam portion cooperating with
 25 the key when the dog is operated by the cylinder and a third cam portion cooperating with the disengaging bar.

16. In a typewriting machine, the combination of a series of type bars, a series of operating
 30 levers for the type bars, a power driven member, means for connecting the

several operating levers with the power driven member, a universal bar operated by any of the levers, a paper carriage, means
 35 operated by the universal bar for positively imparting a step-by-step feed to the carriage, and a spring for returning the carriage to normal position.

17. In a typewriting machine, the combination of fulcrumed key levers with cam
 40 faces, dogs adapted to be operated by said levers, fulcrumed type levers carrying the dogs, a cylinder made up of rings provided with radial pins which engage the dogs when
 45 thrown in their paths by the key levers, a bar in the paths of the dogs to throw them out of engagement with the pins, and means for operating said cylinder.

18. In a typewriting machine, the combination of a series of type actions, a power device
 50 for operating said type actions, and a single adjustable mechanical means common to all of said type actions for varying at will the amount of power transmitted from said
 55 power device to said type actions.

Signed at the borough of Manhattan, city of New York, in the county of New York, and State of New York, this 6th day of January A. D. 1904.

BYRON A. BROOKS

Witnesses:

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 E. M. WELLS.