No. 728,671. PATENTED MAY 19, 1903.

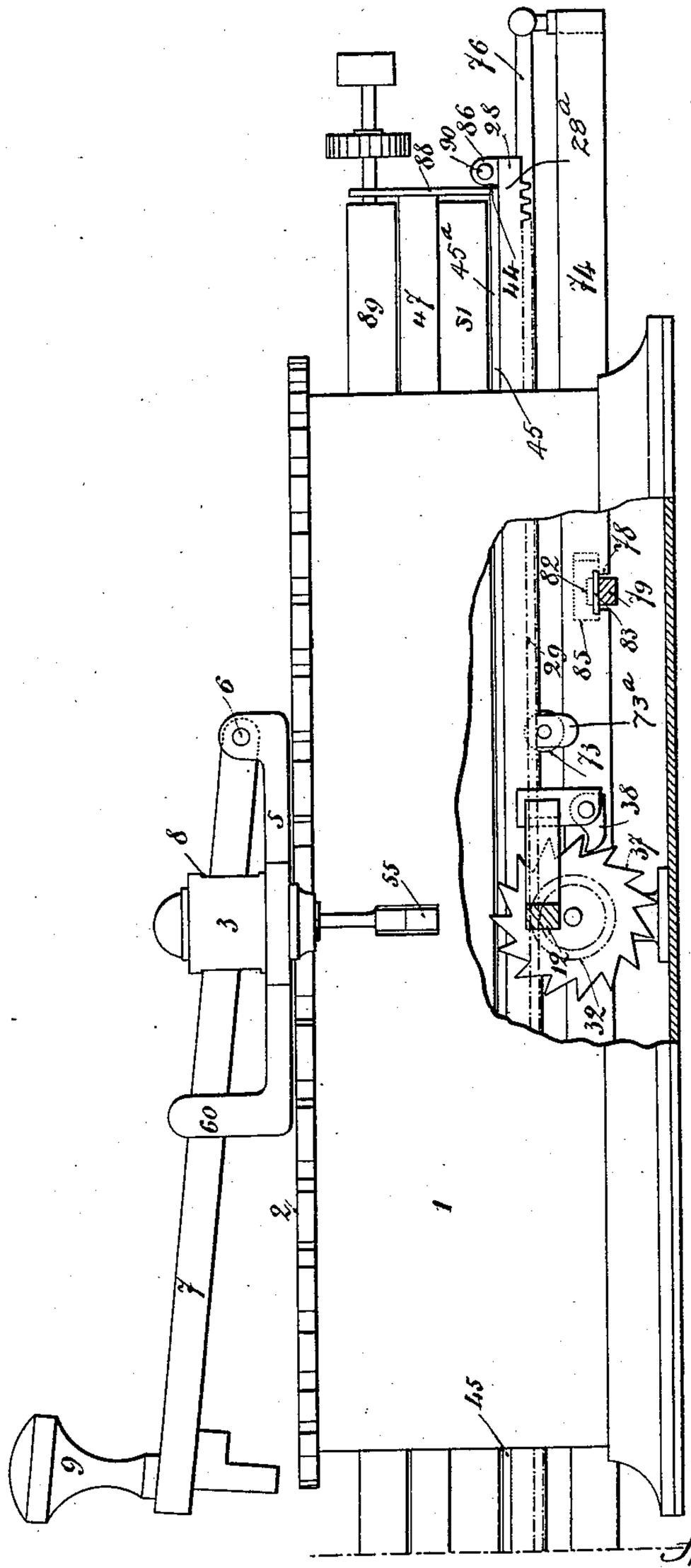
A. DE CAYRON.

TYPE WRITING MACHINE.

APPLICATION FILED JULY 7, 1902.

NO MODEL. 4 SHEETS—SHEET 1.

FIG. 1.



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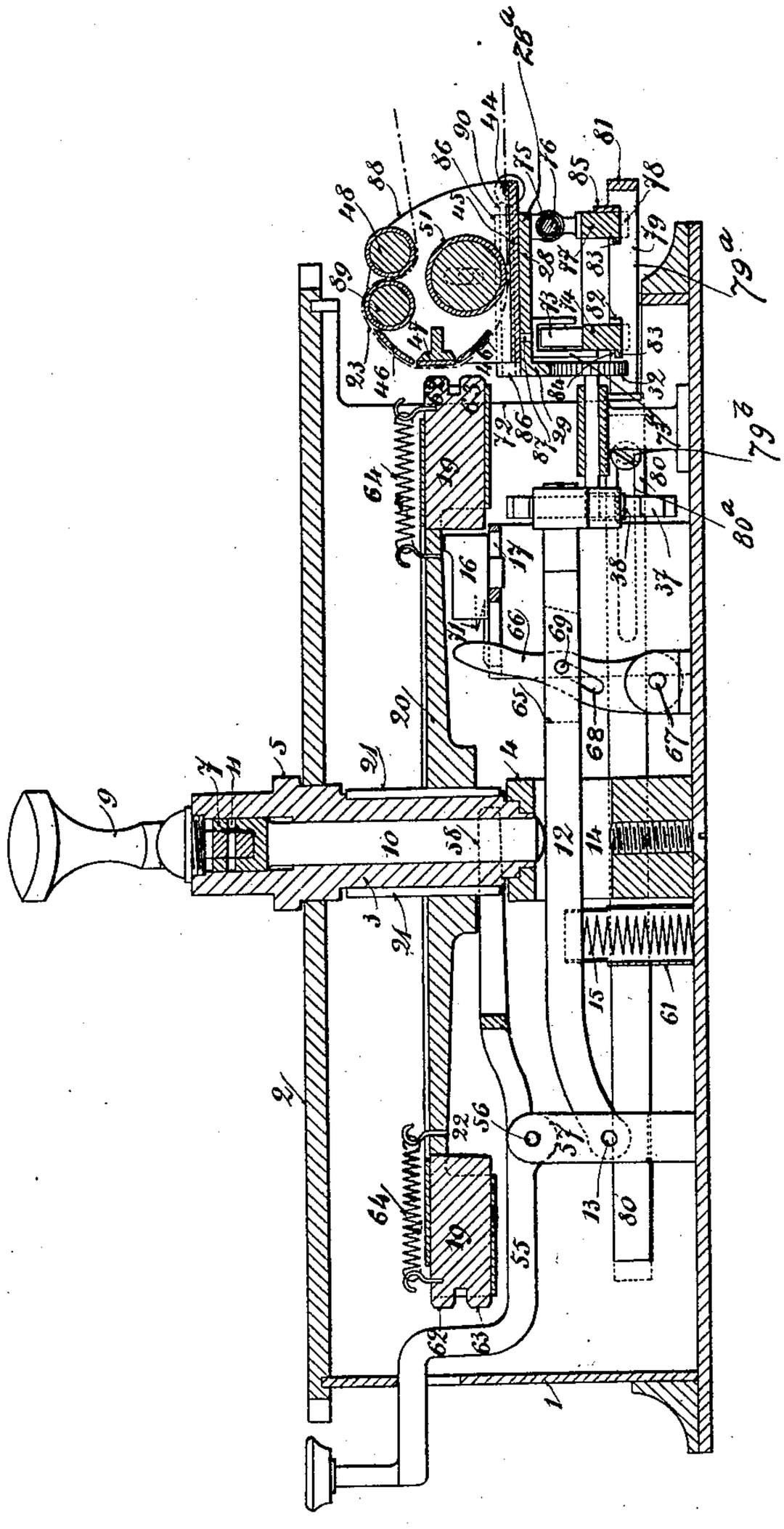
NO MODEL. 4 SHEETS—SHEET 2.

FIG. 2.



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NO MODEL. 4 SHEETS—SHEET 3.

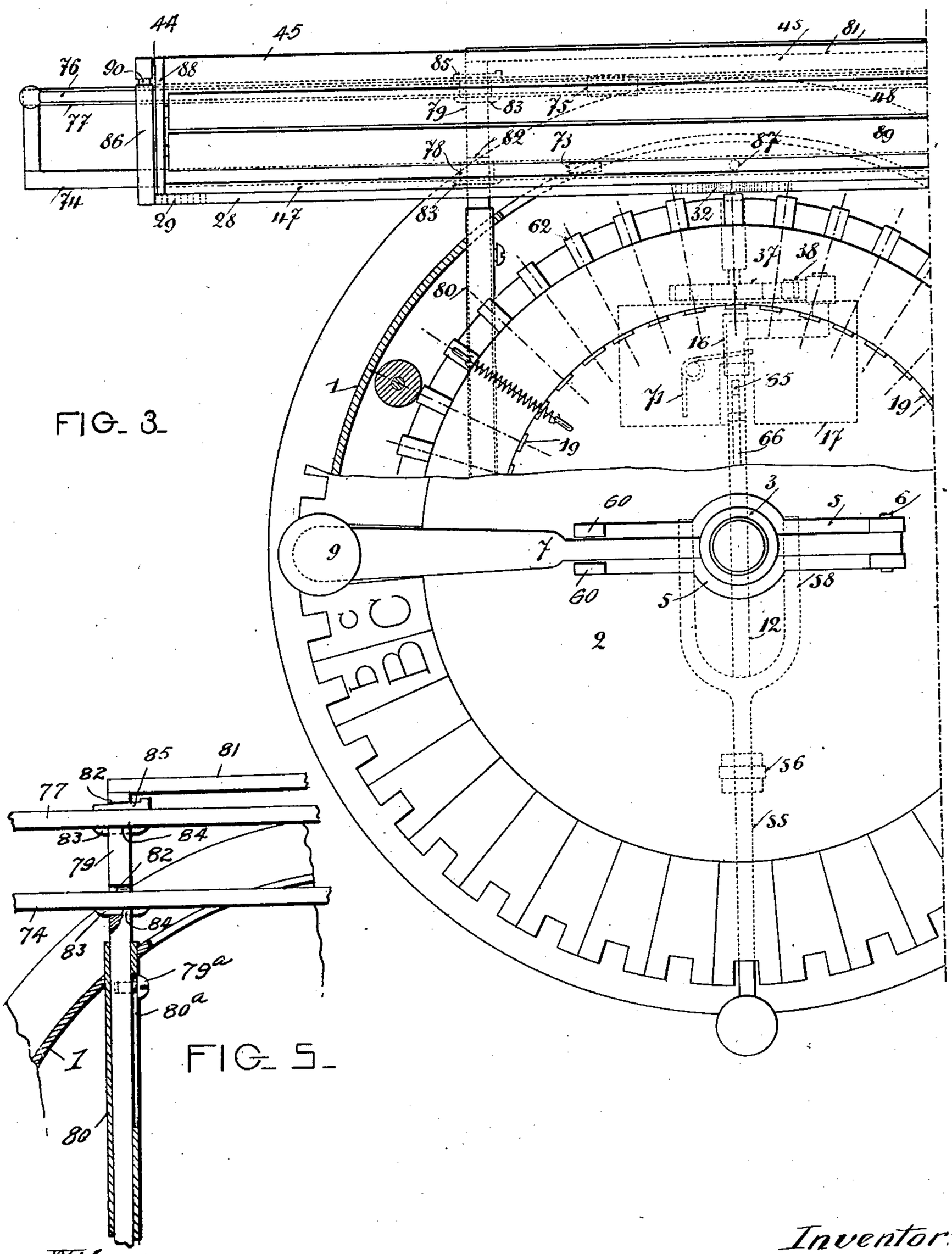

FIG. 3.

FIG. 5.

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TYPE WRITING MACHINE.

APPLICATION FILED JULY 7, 1902.

NO MODEL. 4 SHEETS—SHEET 4.

FIG. 4.

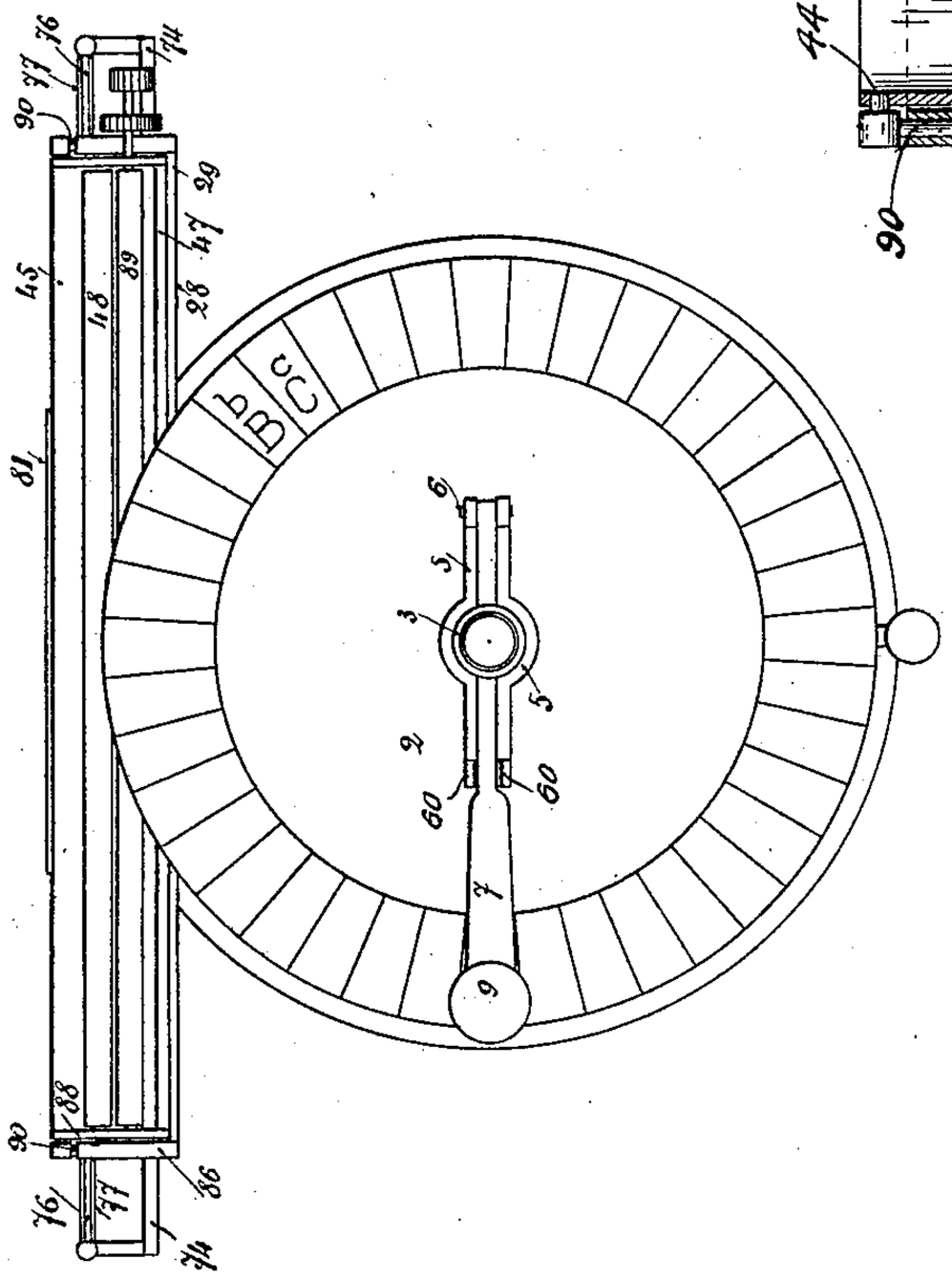
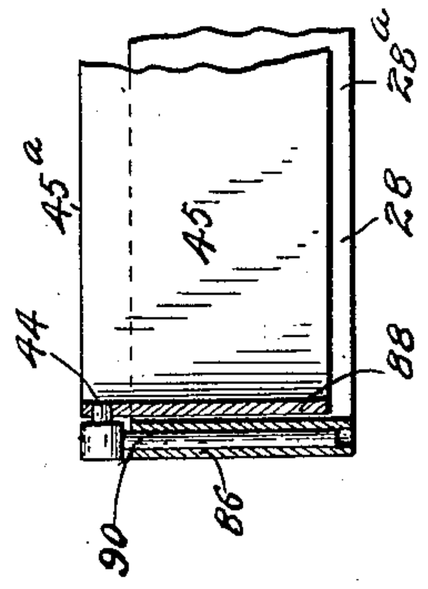


FIG. 6.



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UNITED STATES PATENT OFFICE.

AUGUSTE DE CAYRON, OF PARIS, FRANCE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 728,671, dated May 19, 1903.

Application filed July 7, 1902. Serial No. 114,659. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTE DE CAYRON, engineer, a citizen of the Republic of France, residing at 194 Rue du Faubourg St. Martin, Paris, in the Republic of France, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to a type-writing machine comprising an operating-lever rotatable on a character-dial and by means of which one is able to print, on a sheet of paper which is moved forward intermittently, movable type carried by a revolving and sliding barrel.

I will describe the main features of this machine in reference to the accompanying drawings, which show, by way of example, one form in which my invention can be carried out.

Figure 1 is an elevation of the improved type-writing machine, parts being broken away to more clearly illustrate the same. Fig. 2 is a vertical central section through the machine. Fig. 3 is a plan view of the machine, the character-dial being partly broken away to show the barrel within. Fig. 4 is a plan view of the complete machine on a smaller scale. Fig. 5 is a detail horizontal section showing the manner in which the adjustable carriage-supporting frame is mounted in the casing 1. Fig. 6 is a detail horizontal section showing the manner of mounting the roller-carrying frame upon the carriage.

The machine comprises a cylindrical casing or main frame 1, the fixed lid 2 of which is divided into segments, in each of which letters are engraved, the said segments thus forming the character-dial. At the center of lid 2 passes freely down a hollow shaft 3, carried underneath by a socket or sole 4, and of which the upper part is integral with a cross-bar 5, to which is pivoted on a horizontal stud 6 an operating-lever 7. The latter is free to pass into a mortise 8 in said shaft 3 and between two projections 60, formed on said cross-bar 5, so that it can be moved up and down by means of a button or handle 9.

On shaft 3 is mounted a barrel 20, vertically slidable, and which receives a rotary motion from the said shaft by means of slidable keys 21. The periphery of the said barrel is provided with rectangular recesses 22, in each of which can slide in a radial direction a type 19, carrying on its outer face two characters in relief 62 and 63. Each type 19 is provided with a spiral spring 64, which draws the same toward the center of the barrel. On the other hand, the said type can be thrown outside the barrel by means of the following mechanism: Within the hollow shaft 3 is slidably mounted a rod 10, pivoted at 11 to said lever 7 and resting on a lever 12, located in the interior of the apparatus. The said lever 12, pivoted on a fixed stud 13, passes freely through a mortise 14 in the socket or sole 4 and is upwardly pressed by a spiral spring 15, housed in a tubular casing 61. In a mortise 65 in said lever 12 freely passes a striking-lever 66, pivoted to a fixed stud 67 and provided with an oblique slot 68. A pin 69, fixed to lever 12, passes through slot 68 in such a manner as to cause lever 66 to oscillate either forwardly or backwardly, according to the downward or upward movement of lever 12. In front of the free end of lever 66 is arranged a striking-slide 16, guided in a radial direction by a fixed bearing 17 and drawn toward shaft 3 by a spring 71. The outer end of said slide is so arranged as to strike a type 19 and to throw the same toward the outside of the barrel through a lateral opening 72 in the casing or main frame 1. Consequently when lever 7 is moved down motion is transmitted to rod 10, to lever 12, to lever 66, to slide 16, and to a type 19, which is thus thrown against a sheet of paper 23. When lever 7 is released, the springs 15, 71, and 64 bring the parts back into their initial position.

The sheet of paper 23 is carried by a reversible carriage so mounted as to be easily withdrawn from the machine. For that purpose the carriage comprises a plate 28, provided with two rollers 73, running on a rail 74, and with slides 75, slidable on a rod 76, fixed on a second rail 77. The two rails 74 and 77 are so joined together at their ends as to form a rigid frame, and they are provided with notches 78, intended to embrace the bearing-rods 79. The latter are mounted to slide in tubes 80, integral with the casing or main frame 1, and the said rods are connected together by a cross-bar 81. Each rod 79 is provided with two notches 82, intended to receive the said rails 74 and 77. The latter

are provided above each notch 78 with a projecting flange 83, taking under a lip 84 of the corresponding notch 82, and, furthermore, the rail 77 is provided with slidable keys 85, which can be slipped into notches 82, so as to prevent the frame 74 77 from moving back after the flanges 83 have been moved forward under the lips 84. The said frame is thus prevented from rising and from moving either transversely or longitudinally.

The carriage 28ª is supported by the two rails 74 and 77, which are mounted upon an adjustable supporting-frame 79ª, consisting of the two rods 79, slidably mounted in the tubes 80, integral with the casing 1, and the cross-bar 81, which unites the rear ends of said bars 79. The rods 79 are held in an adjusted position in the tubes 80 by the screws 79ᵇ, which pass through longitudinal slots 80ª in said tubes. Each rod 79 is provided with two notches 82, formed with projecting lips 84, adapted to receive the notched portions 78 of the rails 74 and 77. The projecting flanges 83, formed upon the said rails, are adapted to engage the lips 84, and the sliding keys or wedges 85, which are forced into the notches 82 after the rails have been placed in position, are adapted to lock said rails 74 and 77 upon said frame 79ª. It will thus be seen that said rails will be prevented from rising owing to the lock formed by the lips and flanges and will also be prevented from moving either transversely or longitudinally.

The carriage 28ª comprises a plate 28, formed with a rack upon its front lower edge and with slide or guide ways 86 upon its ends. The same is mounted to reciprocate by means of the rollers 73, journaled in brackets 73ª upon the bottom of the plate 28 and running upon the track-rail 74, and by means of the arms or slides 75, slidable upon a rod 76, fixed to the rail 77. The rails 74 and 77 have their ends joined or braced to form a rigid frame.

The rollers serving to guide the paper are mounted on a plate 45, pivoted at 44 on the slides 90. The latter are slidable in slideways 86, formed on the carriage-plate 28, so that after having moved plate 45 slightly up to take the stops 87 out of the plate 28 the said plate 45 can be moved back, together with the rollers and the paper carried by the plate, and, furthermore, the plate with the rollers, &c., can be completely oscillated over on the pivots 44 to render the writing visible.

The roller-carrying frame 45ª, which is mounted upon the reciprocating carriage 28ª, comprises a plate 45, provided at its ends with the upwardly-extending checks or brackets 88 and pivoted at 44 in the ends of the guide-rods 90, which are slidably mounted in the slide or guide ways 86, formed upon the plate 28 of the carriage 28ª. In order to prevent any casual sliding movement of the roller-carrying frame 45ª upon the carriage, I provide the plate 45 upon its under side with a pin or stop 87, which is adapted to enter an aperture in the plate 28 of the carriage. It will be readily seen that when it is desired to expose the writing upon the paper 23 the plate 45 of the roller-carrying frame 45ª is raised slightly in order to disengage the pin 87 from its aperture. The frame is then slid back by means of the rods 90, sliding in the guideways 86, and the plate 45 may then be swung back or oscillated upon the pivots 44. It will be further noted that when it is desired to adjust the carriage toward or from the type-bars 19 in the drum 20 the set-screws 79ᵇ are loosened, and the entire carriage can then be moved by sliding the rods 79 in the tubes 80.

The carriage is automatically moved by means of a toothed rack 29, formed on the plate 28 and meshing with a toothed pinion 32, operated by a ratchet-wheel 37, which the lever 12, provided with a pawl 38, causes to revolve to the extent of a tooth each time the said lever moves up under the action of the spring 15.

The machine comprises also a lever 55, pivoted at 56 on a standard 57 and intended to move the barrel 20 up when it is desired to print one of the lower characters 63. One end 58 of this lever terminates in a bifurcated part underneath the barrel 20, and the other end projects outside casing 1, where it can be operated.

The operation of the type-writing machine constructed and arranged as above described is as follows: When the raised lever 7 is turned, the shaft 3 and the barrel 20 turn with it, and the types 19 are successively presented in front of the slide 16 opposite the opening 72. Each type which passes at this point corresponds to the characters engraved on the lid 2 and above which the lever 7 lies for the time being. By moving the lever 7 down opposite a given segment of the lid the corresponding type 19 is thrown against the sheet of paper 23 by the slide 16, which strikes the same, and thus prints the character 62 or the character 63, according to whether lever 55 is raised or lowered. When the lever 7 is released, it rises under the action of the spring 15. The slide 16 is brought back to its position of rest by the spring 71, and the type 19 is moved back by the spring 64, and the pawl 38 moves the ratchet-wheel 37 to the extent of a tooth, so as to move the paper-carriage toward the left. The machine is then ready for the printing of another character.

I claim—

1. A type-writing machine comprising, in combination, a casing or main frame, a socket or sole fixed to the bottom of the said casing and having a transversal slot or recess, a hollow shaft resting in the socket or sole and held in the lid of the casing, a barrel having movable types and mounted on the said shaft, a cross-bar fixed on the shaft, an operating-lever pivoted on the said cross-bar and movable above the shaft, a rod connected to the said lever and arranged in the hollow shaft, a lever passing in the slot or recess in the socket

or sole, and upon which the said rod bears, and a striking mechanism connected to the said lever and so arranged as to throw the types outside the barrel and through an opening in the casing.

2. A type-writing machine comprising in combination a casing or main frame, a hollow shaft rotatably mounted in said casing, a sliding type-barrel mounted upon said shaft, radially-movable type-bars having two or more fixedly-related superposed characters, means to cause said type-barrel to turn, means for changing the level of the type-barrel in order to present in front of the opening in the casing, the one or the other of said superposed characters, a lever pivoted within the casing, a sliding rod within said hollow shaft adapted to operate said lever, a pivoted knocker operated by said lever, a sliding striking-block adapted to project said type-bars through the opening in the casing in either the elevated or lowered position of the type-barrel, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

AUGUSTE DE CAYRON.

Witnesses:

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