

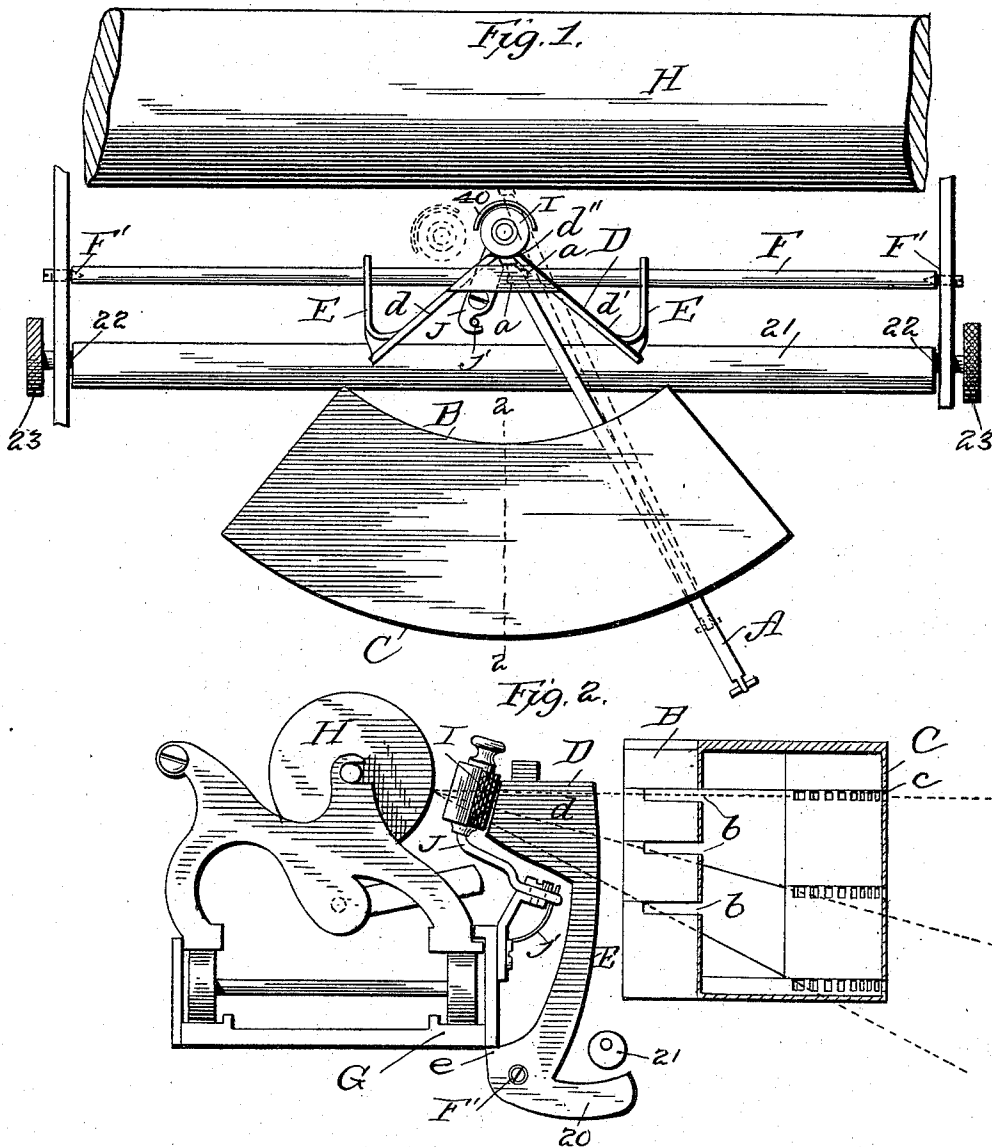
(No Model.)

3 Sheets—Sheet 1.

B. GRANVILLE.
TYPE WRITING MACHINE.

No. 570,432.

Patented Oct. 27, 1896.



Attest
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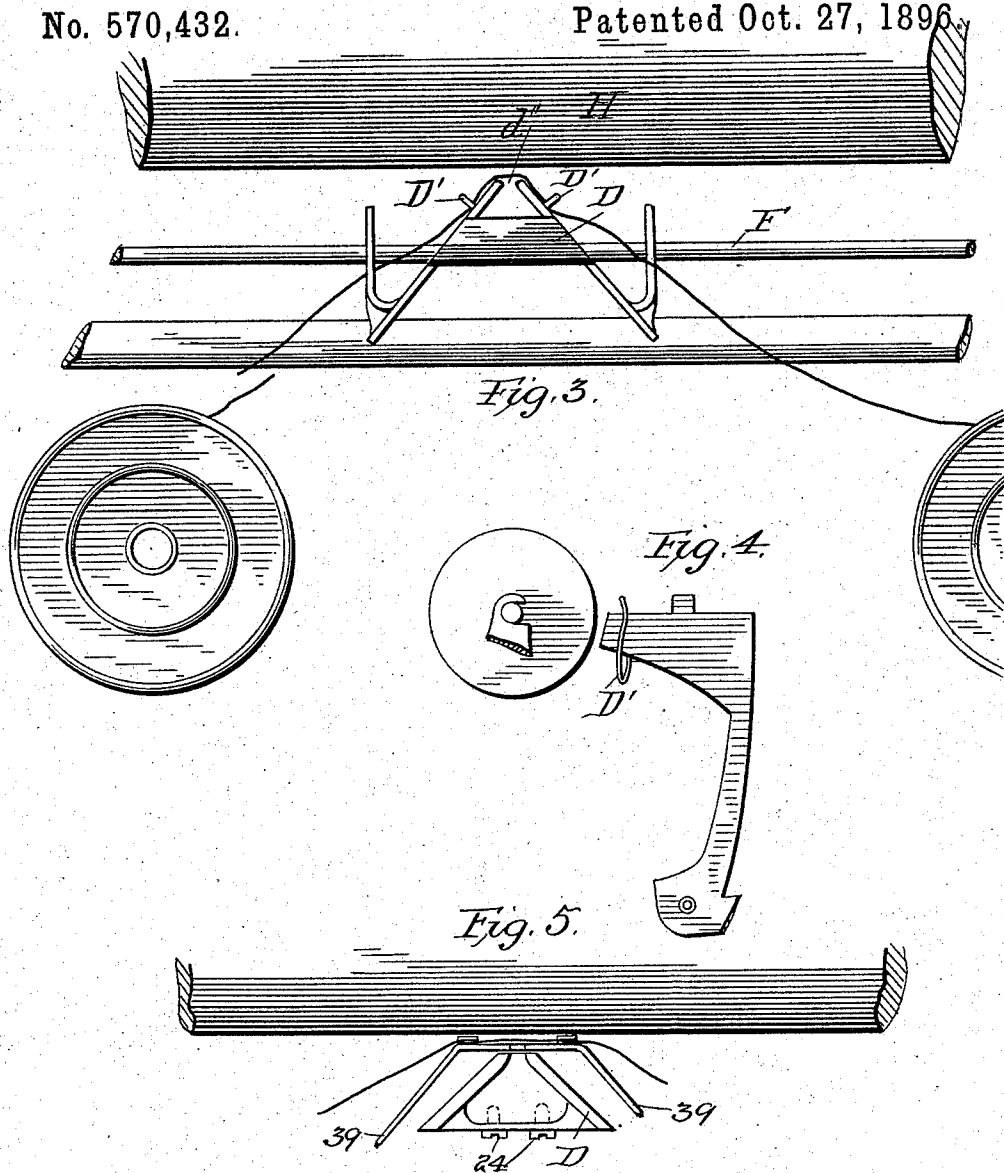
(No Model.)

3 Sheets—Sheet 2.

B. GRANVILLE.
TYPE WRITING MACHINE.

No. 570,432.

Patented Oct. 27, 1896.



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(No Model.)

3 Sheets—Sheet 3.

B. GRANVILLE.
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Fig. 6.

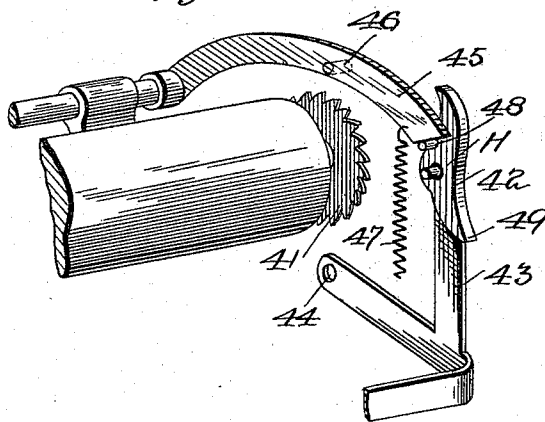
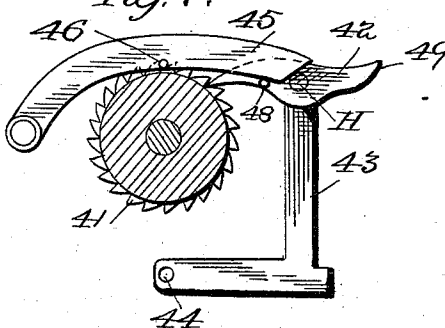


Fig. 7.



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UNITED STATES PATENT OFFICE.

BERNARD GRANVILLE, OF CHICAGO, ILLINOIS, ASSIGNOR TO ALBERT G. CORRE, OF CINCINNATI, OHIO.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 570,432, dated October 27, 1896.

Application filed December 8, 1894. Serial No. 531,258. (No model.)

To all whom it may concern:

Be it known that I, BERNARD GRANVILLE, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

The invention comprises various features of construction and arrangement hereinafter described, and specifically pointed out in the claims.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a sufficient portion of a type-writer to illustrate my invention. Fig. 2 is a section on line 2 2 of Fig. 1 with the carriage in end elevation. Fig. 3 is a plan view of the guide when arranged to use a ribbon for inking purposes. Fig. 4 is a side view of the guide of Fig. 3. Fig. 5 is a detail view of a guide fixed to the machine. Figs. 6 and 7 are detail views relating to the paper-feed.

The present invention is designed more particularly for application to that class of type-writers in which the type is carried upon longitudinally-reciprocating bars, such, for instance, as the Rapid. These type-bars A in the drawings are carried or supported by the two concentric plates B and C, the outer of which has openings *c*, of approximately the size of the bars, while the front or inner plate is provided with elongated slots *b*, corresponding in number to the different banks of type. These slots permit of lateral movement or play in the type-bars, but hold them effectually against any vertical displacement, so that perfect alinement of the type is secured. In order to center the type and insure its contact with the paper at precisely the right spot for accurate spacing of the letters, I provide a type-guide D, which consists of the inclined plates *d d'*, having an opening *d''* at the apex of a size to permit the type to pass through for printing, the end of the type-bar fitting snugly in this opening. The guide D is mounted upon the two arms E, which are preferably formed integral with the inclined sides of the funnel, and are connected at their lower ends to a swivel-support, which in the

present instance is shown as a rod F, extending across the machine, and having its ends supported by the swivel-screws F' in the frame of the machine, the conical ends of the screws entering corresponding recesses in the ends of rod. The arms E are inclined forward to the point where they are secured to the swivel-rod, so that the weight of the guide falls in front of the said rod and tends to keep the guide normally away from the platen in the position shown in full lines, Fig. 1. A projection or projections *e* on the arms engages the under side of the platen-carriage guide G, or corresponding part of the frame of the machine, and limits the forward movement of the guide, and thereby its distance from the platen H. Each type-bar is provided with a shoulder or shoulders *a*, which when the type-bar is projected against the platen engages with the edge of the opening *d''* and carries the guide forward with it into proper position adjacent to the platen, and as the guide is held securely against any side movement, all the type are compelled to strike in exactly the same place relatively to the stationary parts of the machine. As the line of movement of the guide is at an angle to the majority of the type-bars, the utility of supporting the forward portion of the type-bars in the slots *b* will be plainly seen, as these permit the necessary side movement.

In order to provide for inking the type, I may provide an inking-roller I, journaled upon a pivoted frame J, carried by the main frame of the machine, and held by means of a spring *j* normally over the opening *d''*. The type in its forward movement strikes this roller first and throws it to one side, as shown in dotted lines in Fig. 1, the face of the type being inked in its contact with the roller, and the side movement of the roller affords ample space for the forward movement of the guide to permit the imprint upon the paper.

Instead of using the inking-roller I may desire to use a ribbon, and in this event it is only necessary to provide the guide with the retaining-clips D', one upon each side, for retaining the ribbon and guiding it across the opening in the guide. This construction is illustrated in Figs. 3 and 4.

In order to limit the backward movement

of the guide so that it will not strike the paper upon the platen, I have provided the lower portions of the guide-carrying arms with forwardly-projecting stops 20 to contact with the cross-bar 21, having eccentrically-arranged pins 22, journaled in the machine-frame and provided with turning-knobs 23, by which the eccentric-bar 21 may be turned to present different parts of its surface as a stop to limit the backward movement of the guide-frame.

Instead of having a movable guide the same may be fixed, as in Fig. 5, by means of screws 24 to the machine-frame. The ribbon in this instance would be moved to and from position across the opening of the guide by a carrier-frame 39, oscillating vertically as in my United States Patent 496,304, of April 25, 1893. The guide when arranged stationary, as described above, would be fixed about one-sixteenth of an inch from the edge of the platen. In this form, as in the one first described, the type-bars are allowed lateral play or automatic adjustment during their stroke by contacting with the conveying sides of the guide and being directed thereby to the printing-point. The shouldered construction of the type-bars to prevent the bars from running through the guide-opening more than a definite amount is unnecessary in this construction. The forward ends of the bars are slightly beveled on the sides. When an inking-roller is used, a shield 40 may extend around its rear side, and thus protect the paper of the platen from splashes of ink which might be thrown by the type-bars.

In Figs. 6 and 7, I show details of an improved paper-feeding mechanism. The platen has the usual ratchet 41, to be operated by the pawl 42, carried by the line-space frame 43, pivoted at 44, and arranged to be operated in the ordinary manner. This pawl is pivoted to the line-space frame by the screw H, the end of which protrudes and contacts with the end of the detent-lever 45, carrying a pin 46, to engage the teeth of the ratchet and hold the platen in its moved position. This detent is drawn into position by the spiral spring 47. The pawl has a second pin 48, so that when the pawl is thrown out of action by pressing down its tail-piece 49 the pin 48 will engage the end of the detent-lever and thus throw this out of action also, so that the platen will now be perfectly free to be turned in either direction. Upon throwing the push-pawl into operation again the detent-lever will also fall into engagement with the ratchet.

It will be noticed that when the push-pawl is tipped up out of operation, as in Fig. 6, the pressure of the arm 45 upon the pin 48 will be directly in line therewith or slightly within the dead-center, so that the pull of the spring 47 will hold the pawl 42 out of action.

Having thus described my invention, what I claim is—

1. In a type-writing machine, the combination of the movable type-bars arranged to

converge toward the platen and having lateral play, the platen and the guide having unyielding flaring sides to receive the type-bars, said guide having rocking movement as a whole toward and from the platen in the direction of the type-bar's movement, substantially as described.

2. In a type-writing machine, the combination of the movable type-bars arranged to converge toward the platen and having lateral play and the guide having flaring sides to receive the type-bars and the rocking arm pivoted at its lower end and carrying the guide at its upper end, said guide swinging horizontally toward and from the platen substantially as described.

3. In a type-writing machine, the combination of the type-bars having lateral play, the platen and the guide with flaring walls movable toward and from the platen in the direction of movement of the type-bars and a stop for limiting the movement of the guide toward the platen, said guide having unyielding guiding-walls and movable as a whole toward and from the platen substantially as described.

4. In combination in a type-writing machine, the type-bars, the platen, the guide movable toward and from the platen, the rocking arm carrying the guide and the stops consisting of the eccentric-shaft and the extensions on the arm to engage therewith and also to engage with the frame to limit the movement of the rocking arm in both directions, substantially as described.

5. In combination in a type-writer, the platen, the type-bars, the guide movable toward and from the platen in the direction of movement of the type-bars and the adjustable stop for limiting the movement toward the platen consisting of the eccentric, substantially as described.

6. In combination in a type-writing machine, the type-bars and the guide with flaring walls movable in the direction of movement of the type-bars, said type-bars having shoulders in rear of the type-heads, to contact with the guide and move it forward.

7. In combination, the platen, the converging type-bars, the guide having flaring sides to receive and direct the type-bars and the guide-frame consisting of the front and rear plates through which the type-bars pass, said front plate being slotted laterally to allow lateral play of the front ends of the type-bars and the rear plate being perforated, substantially as described.

8. In combination, the platen, the type-bars having lateral play, the guide-frame therefore having the flaring walls and movable toward and from the platen in line with the movement of the type-bars, and the inking-ribbon carried and guided by the movable guide at the apex of its flaring walls, substantially as described.

9. In combination the platen, the ratchet,

the push-pawl, the line-space frame to which the push-pawl is pivoted and the detent-lever arranged to be operated by contact with the extended end of the pawl's pivot-pin, substantially as described.

5 10. In combination, the platen, the push-pawl, the detent, said push-pawl having a portion contacting with the detent to release the same when said pawl is operated to turn
10 the ratchet and having a portion also to contact with and throw the detent out of action when said pawl is thrown out of operation, substantially as described.

15 11. In combination, the platen, the ratchet, the push-pawl and the detent arranged to be operated by contact with the extended end of the pivot of the push-pawl and by contact

with a projection on the push-pawl when the same is thrown out of action.

12. In combination the platen, the ratchet, 20 the push-pawl, the detent 45, the spring for drawing the same to engage the ratchet the said push-pawl having a pin to engage the detent and lift the same out of action said
25 the push-pawl out of action when the pin engages the end of the detent, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

BERNARD GRANVILLE.

Witnesses:

C. W. HOOKER,

MARIE BURKART.