

G. W. DAVIS.

TYPE WRITER.

APPLICATION FILED JAN. 3, 1907.

1,025,129.

Patented May 7, 1912.

3 SHEETS-SHEET 1.

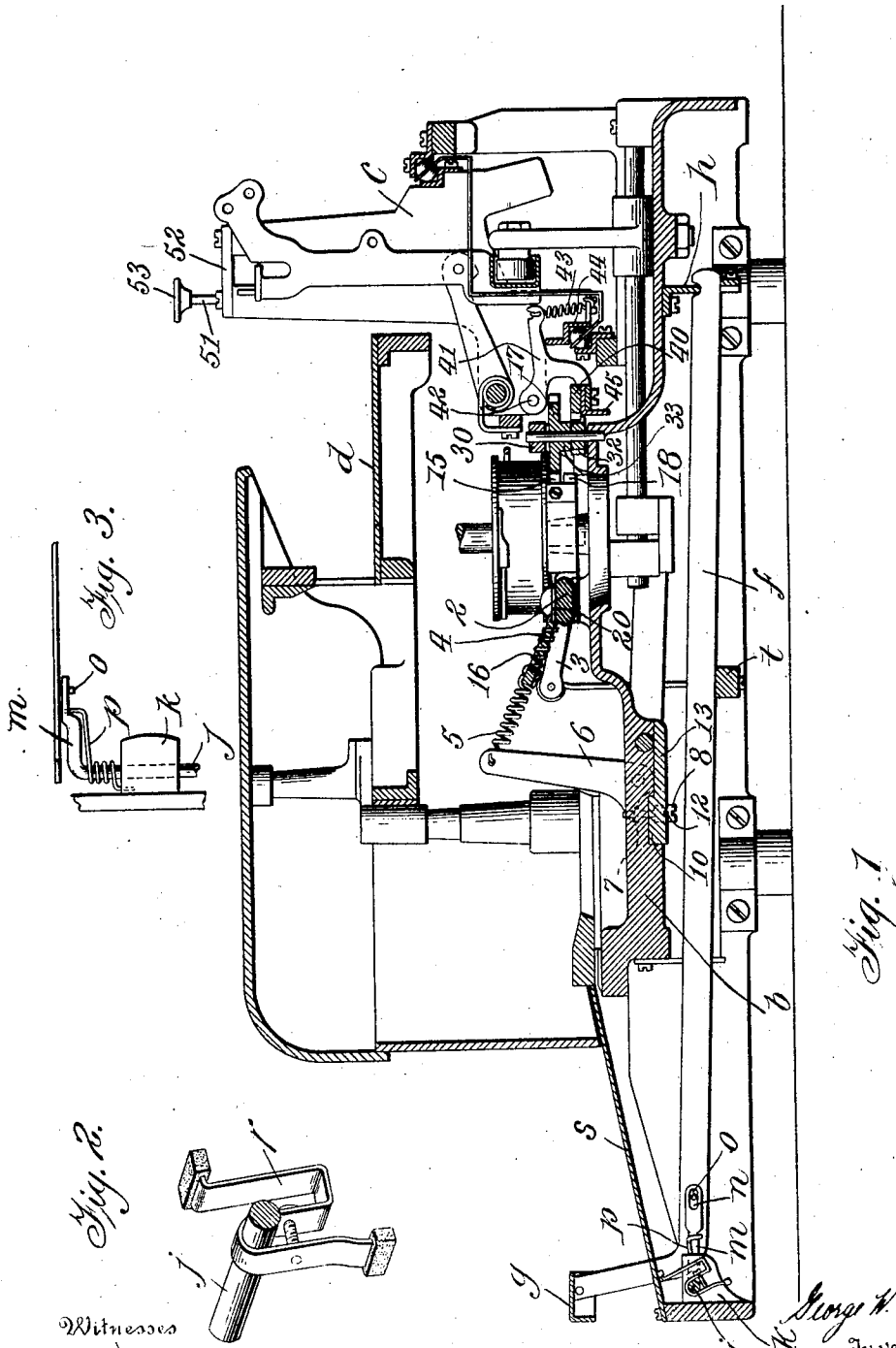


Fig. 2.
Witnesses
Albert R. Baskin
Fred J. Baskin

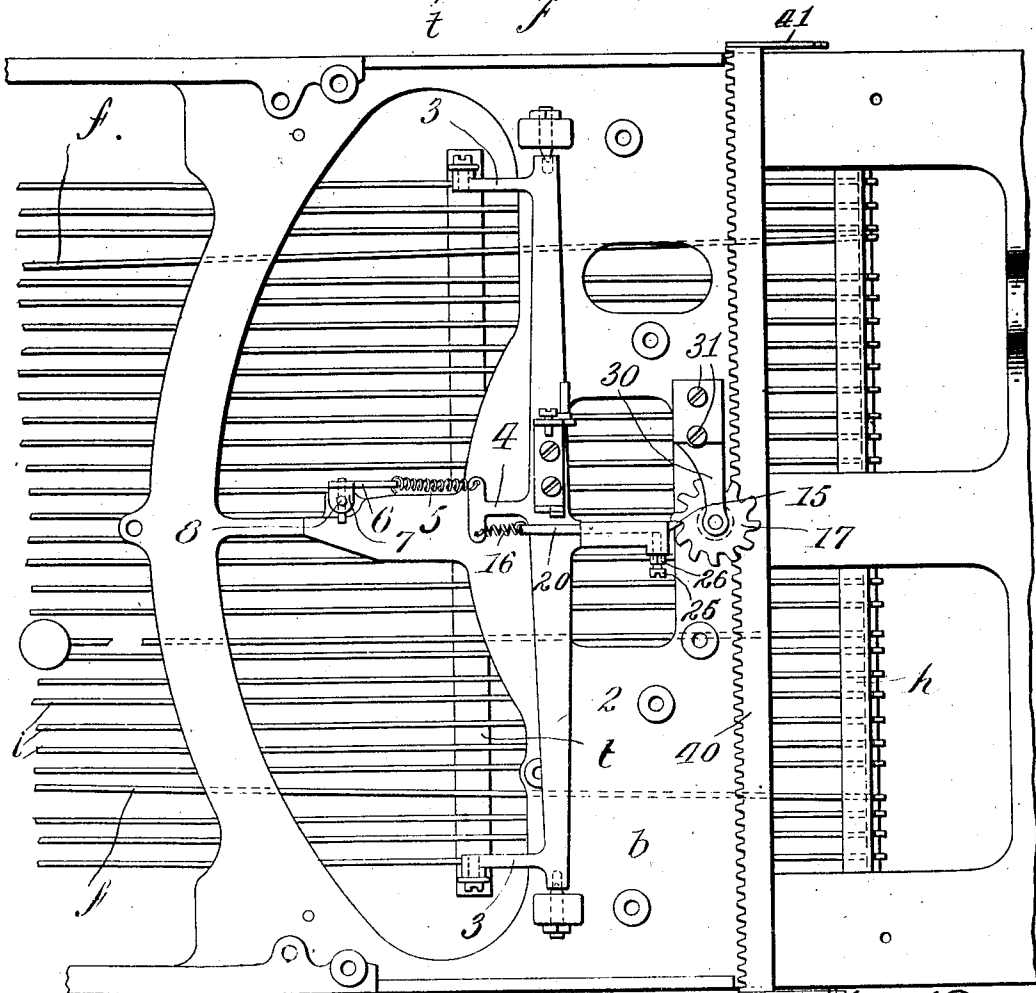
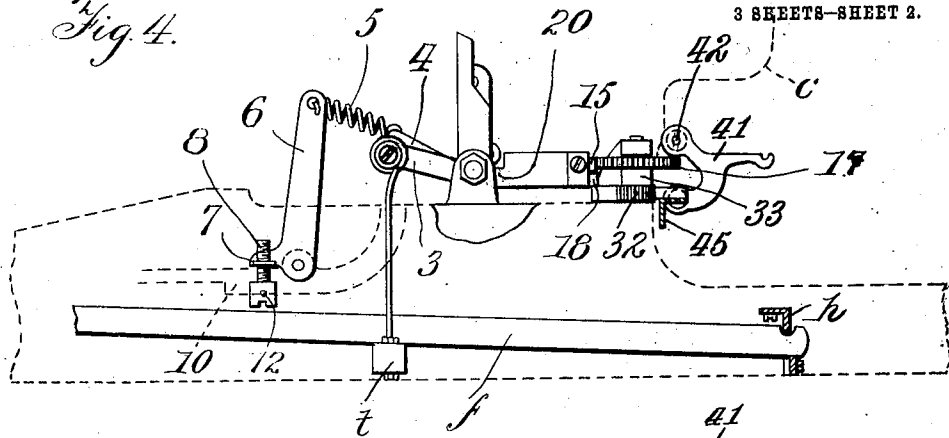
Fig. 1.
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3 SHEETS—SHEET 2.



Witnesses

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Fig. 5.

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3 SHEETS—SHEET 3.

Fig. 6

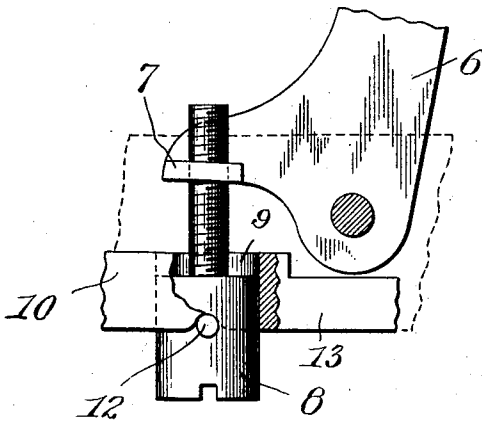


Fig. 7.

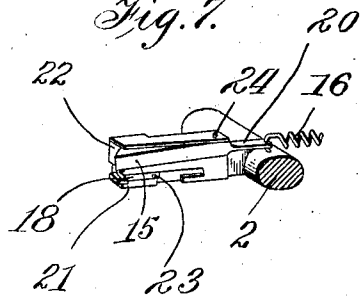


Fig. 9.

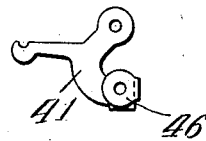


Fig. 8.

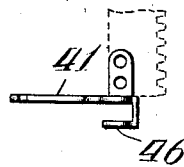
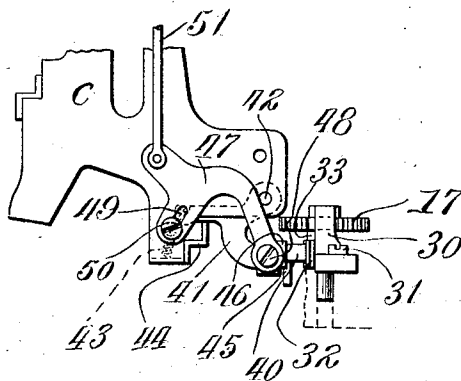


Fig. 10.

Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE WILLIAM DAVIS, OF WESTMOUNT, QUEBEC, CANADA.

TYPE-WRITER.

1,025,129.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed January 3, 1907. Serial No. 350,637.

To all whom it may concern:

Be it known that I, GEORGE WILLIAM DAVIS, of Westmount, in the district of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Type-Writers; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates particularly to "type-bar" machines and it has for its object to provide in machines of this class, improved carriage feed mechanism.

The invention may be said briefly to consist of means for returning the loose escapement dog to its proper working position after displacement to either side, means for protecting the escapement mechanism from dust and damage, means for varying the resistance to the action of the machine, novel escapement mechanism, and space bar mechanism. For full comprehension, however, of my invention reference must be had to the accompanying drawings, forming a part of this specification, in which similar reference characters indicate the same parts, and wherein—

Figure 1 is a longitudinal sectional view of the frame of a sliding type bar type-writing machine with the parts to which the present invention relates applied thereto; Figs. 2 and 3 are detail perspective and plan views of portions of the space bar mechanism; Fig. 4 is a side elevation illustrating the means for varying the resistance to the action of the machine and the escapement mechanism; Fig. 5 is a plan view of the devices shown in Fig. 4; Fig. 6 is an enlarged detail side elevation partly in section of one of the parts of the means for varying the resistance to the action of the machine; Fig. 7 is a perspective view of the pawls of the escapement mechanism; Fig. 8 is a side elevation of the lower portion of the carriage with the escapement mechanism; and Figs. 9 and 10 are side elevation and plan view of a part of the escapement mechanism.

The frame of the machine is indicated at *b* and the carriage at *c*, *d* being the usual type guide plate.

The escapement mechanism (Figs. 1, 4, 5, 7, 8, 9 and 10) comprises a dog rocker bar 2, having a pair of forwardly projecting arms 3 one located near each end thereof and pivotally connected to a universal

bar *t* extending transversely beneath levers *f* of the space bar *g* to be presently described. The device for yieldingly retaining the dog rocker in its normal position (Figs. 1, 4, and 5) consists of an arm 4 extending forwardly and diagonally upward from the middle thereof and of T-form with a retractile cylindrical spring 5 connecting one end of its cross-piece to the top of one arm 6 of a bell-crank lever, the other arm whereof has a horizontal lug 7 (Figs. 1, 4, 5 and 6) perforated and tapped to receive the upper end of an adjusting screw 8 carried rotatably in a perforation 9 in a lug 10 formed rigidly upon the main frame of the machine. This screw has a transverse pin 12 extending therethrough beneath a portion 13 of the main frame which is formed with a groove in which this pin is adapted to lie when in its normal position and by which it is prevented from accidental displacement and the screw from accidental rotation, although the edges of this groove are slightly rounded to allow of the screw being rotated for purposes of adjustment, while by turning this screw the bell-crank-lever is turned on its pivot point, and the spring 5 for retaining the dog rocker in its normal position is adjusted and the resistance to touch or to the action of the machine varied. The other end of the cross-bar of the T-arm 4 is extended to a point in line with the loose escapement dog 15 to which it is yieldingly connected by a retractile cylindrical spring 16. This spring tends to move the operating end of the loose dog to, and retain it in a position to engage the approaching tooth of the escapement or sprocket wheel 17. Normally the sprocket wheel retains this loose dog (against the resistance of the spring 16) in juxtaposition with a fixed dog 18. Both dogs are mounted in a rearwardly extending arm 20 on the dog rocker 2 and are preferably located in separate horizontal recesses 21 and 22 to facilitate fitting the fixed dog 18 being rigidly secured in the lower recess 21 by a screw 23, while the loose dog 15 is pivotally secured in the upper recess by a pin 24 (Figs. 5 and 7 and an adjusting screw 25 locked by a nut 26 enables the normal position of this loose dog to be adjusted relatively to the fixed dog.

The escapement or sprocket wheel 17 is rotatably mounted in a bracket 30 (Figs. 1, 110

4, 5, and 8) secured by screws 31 to the main frame of the machine and beneath the usual type guide plate *d* (Fig. 1) while a pinion 32 is preferably made integral with the shaft 33 upon which this sprocket wheel 17 is mounted and in position to be engaged by the escapement rack to be presently further alluded to. The advantage of this arrangement of the escapement mechanism and the members thereof relatively to one another is that the loose dog will be returned to its proper working position after displacement to either side (it is displaced by sprocket wheel 17 when the carriage is being fed or returned) and the entire escapement mechanism is protected from dust and damage.

The escapement release mechanism (Figs. 1, 4, 5, 8, 9, 10) consists of a particular manner of mounting the rack and a depressible key and intermediate devices therebetween for displacing or shifting the rack. The novel feature of this mechanism is a member of the intermediate mechanism, but for full comprehension of its application it is necessary to describe the entire combination. This escapement release mechanism comprises in connection with the rack 40 (before mentioned), a pair of bell-crank-levers 41 (shown in detail in Figs 9 and 10) one arm of each of which is secured rigidly to the opposite end of the rack, such levers being pivoted, as at 42, to the end frame pieces of the main carriage *c*, the other arms of these bell-crank-levers being connected by springs 43 to the carriage and normally held thereby yieldingly in contact with top edge of one of the carriage rails 44, this rack supporting means also carries a rail 45 forming a portion of the brake mechanism to be hereinafter mentioned. This arrangement maintains the rack yieldingly in engagement with the pinion 32.

In order to enable the rack to be released from the pinion the bell-crank-lever 41 at the left end of the carriage (looking from the key-board toward the platen) has an extension 46 to which one end of a bent arm 47 is pivoted, at 48, the portion of such arm adjacent to its opposite end being longitudinally slotted as at 49 eccentrically to the pivot point 48 and acting upon a screw 50 carried by the carriage end; while an upwardly extending rod 51 is pivoted at its lower end to the said slotted end of the bent lever and is guided in a perforated capping plate 52 secured upon the top of the carriage, the top of the rod being provided with a button 53. By depressing this button the bent arm 47 is rocked and the eccentric slot therein (which constitutes a cam), acting upon the screw 50 draws its pivoted end and consequently the rack away from the pinion, thus releasing the escapement and allowing the carriage to be moved freely in either direction. This arm 47,

with its cam slot 49, is the member constituting the main novel feature of this escapement released mechanism.

The space bar *g* and its connection to the universal bar is in the main, of the usual construction. The levers *f* for supporting this space bar extend to the rear of the machine and are fulcrumed as usual upon the same bar, *h*, as the key levers *i* (Fig. 5). This disposition of the space bar levers tends to make the space bar unsteady in that the depression of one end will cause the bar to tilt and not affect the opposite end. This defect is overcome by means of a rocking bar *j* rotatably mounted in bearings *k* upon the front of the main frame, and having its ends bent to form arms *m*. These arms are longitudinally slotted as at *n* and fit slidably upon pins *o* carried by the levers *f*, while an expansible torsion spring *p*, connected at one end to one of the arms at its opposite end to one of the bearings *k* (Fig. 3). With this device the depression of one of the levers *f* is transmitted through the bar *j* to the other lever thereby causing the said levers to act in unison.

A two armed stop *r* (Figs. 1 and 2) is mounted rigidly upon the bar *j* and limits the movement thereof in both directions by bearing, at different times, upon the machine frame and the key-board cover-plate indicated at *s* (Fig. 1). This stop also stalls the universal bar *t* in its normal position.

The carriage construction and roller bearings therefor and the shift mechanism are not herein claimed as they form the subject matter of separate applications filed June 23, 1911, under Serial No. 634,952 and June 23, 1911, under Serial No. 634,953.

Having thus described and ascertained the nature of the said invention and in what manner the same is performed, it is hereby declared that what is claimed is as follows:—

1. In a typewriter of the sliding type bar class, the combination with the escapement wheel, a dog rocker having the rearwardly projecting loose escapement dog pivoted thereon in engaging relation with the wheel, of a forwardly projecting arm upon such dog rocker and having a cross piece the end of which is in line with the dog, and a coiled retractile spring extending on the same vertical plane as the dog and connected at one end to the dog and at its other to the end of the said cross-arm.

2. In a typewriting machine, the combination with a carriage and means tending to move the same toward one end of the machine, of escapement mechanism comprising a dog rocker, a forwardly and diagonally upwardly extending arm upon the dog rocker, a bell-crank-lever, a retractile spring connecting the said arm to one arm of the bell-crank-lever, an adjusting screw

carried by the frame of the machine and engaging the other arm of such bell-crank-lever for the purpose of enabling the resistance to the action of the machine to be varied.

3. In a typewriting machine, the combination with a carriage and means tending to move the same toward one end of the machine, of escapement mechanism comprising a dog rocker, a forwardly and diagonally upwardly extending arm upon the dog rocker, a bell-crank-lever, a retractile spring connecting the said arm to one arm of the bell-crank-lever, an adjusting screw carried by the frame of the machine and engaging the other arm of such bell-crank-lever for the purpose of enabling the resistance to the action of the machine to be varied, and a pin carried by the screw and engaging a groove in the frame of the machine for preventing accidental rotation of the screw.

4. In a typewriting machine, the combination with a carriage and means for tending to move the same toward one end of the machine, of escapement mechanism comprising a dog rocker, a forwardly and diagonally upwardly extending arm of T-form upon the dog rocker, a bell-crank-lever, a retractile spring connecting one end of the cross-piece of the said arm to one arm of the bell-crank-lever, an adjusting screw carried by the frame of the machine and engaging the other arm of such bell-crank-lever for the purpose of enabling the resistance to the action of the machine to be varied, loose and fixed escapement dogs carried by the dog rocker, a sprocket wheel carried by the frame of the machine, a rack carried by the carriage, a retractile spring connected to the other end of the said cross-bar and to the loose escapement dog retaining the latter with its end away from the end of the fixed dog, and the sprocket wheel normally retaining the said end of the loose dog in juxtaposition with the fixed dog.

5. In a typewriter, a dog rocker, an arm projecting rearwardly from such rocker and having a pair of separate horizontal recesses, a dog fixedly secured in one of the said recesses, a dog pivotally mounted in the other recess, and an adjusting screw with a lock nut for determining the position of the said pivoted pawl relatively to the fixed pawl.

6. In a typewriting machine of the sliding type-bar class, the combination of the frame of the machine rotatably supporting a horizontal pinion, a carriage, a pair of bell-crank-levers fulcrumed at their angles to the ends of the carriage, a toothed rack carried by the rear arms of such levers and having its teeth arranged vertically, springs connected between the other arms of the levers and the carriage, a bent arm ful-

crumed to the rear arm of one of the bell-crank-levers and its opposite end being provided with a cam slot engaging a projection upon the carriage, for the purpose of releasing the carriage.

7. In a typewriting machine of the class utilizing a space bar supported by the ends of a pair of levers, the combination with the said space bar, of means distinct from the connection between such space bar and its levers for causing both ends thereof to move in unison upon the depression of one end.

8. In a typewriting machine of the class utilizing a space-bar supported by the ends of a pair of levers, the combination with the said space-bar, of a rocking bar rotatably mounted upon the frame of the machine and pivotally connected at its opposite ends to the levers, and means normally yieldingly retaining the space-bar in its elevated position.

9. In a typewriting machine of the class utilizing a space-bar supported by the ends of a pair of levers, the combination with the said space-bar, of a rocking bar rotatably mounted upon the frame of the machine and having its ends provided with arms pivotally connected to the levers, and means normally yieldingly retaining the space-bar in its elevated position.

10. In a typewriting machine of the class utilizing a space-bar supported by the ends of a pair of levers, the combination with the said space-bar, of a rocking bar rotatably mounted upon the frame of the machine and having its ends provided with longitudinally slotted arms and the levers having pins engaging the slots in the said arms, and means normally yieldingly retaining the space-bar in its elevated position.

11. In a typewriting machine, the combination with a space bar, of a member movably mounted on the machine and provided with a device coacting with a stationary part of the machine to limit the movement of said member in both directions, and means operatively connecting the said member to the space bar, for the purpose set forth.

12. In a typewriting machine of the class utilizing a space-bar supported by the ends of a pair of levers, the combination with the said space-bar, a rocking bar rotatably mounted upon the frame of the machine and pivotally connected at its opposite ends to the levers, means normally yieldingly retaining the space-bar in its elevated position, and a two armed stop mounted rigidly upon the said rocking bar and coacting with the frame of the machine for limiting the movement of the space-bar in both directions.

13. In a typewriting machine of the class utilizing a space-bar supported by the ends of a pair of levers, the combination with

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the said space-bar, a rocking bar rotatably mounted upon the frame of the machine and pivotally connected at its opposite ends to the levers, means normally yieldingly retaining the space-bar in its elevated position, and a two armed stop mounted rigidly upon the said rocking bar and coacting with the frame of the machine for limiting the movement of the space-bar in both directions, the said stop consisting of a strip of

metal bent to receive the rocking bar and presenting padded ends projecting toward the front of the machine and the cover-plate.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

GEORGE WILLIAM DAVIS.

Witnesses:

WILLIAM P. McFEAT,
FRED J. SEARS.