

No. 775,331.

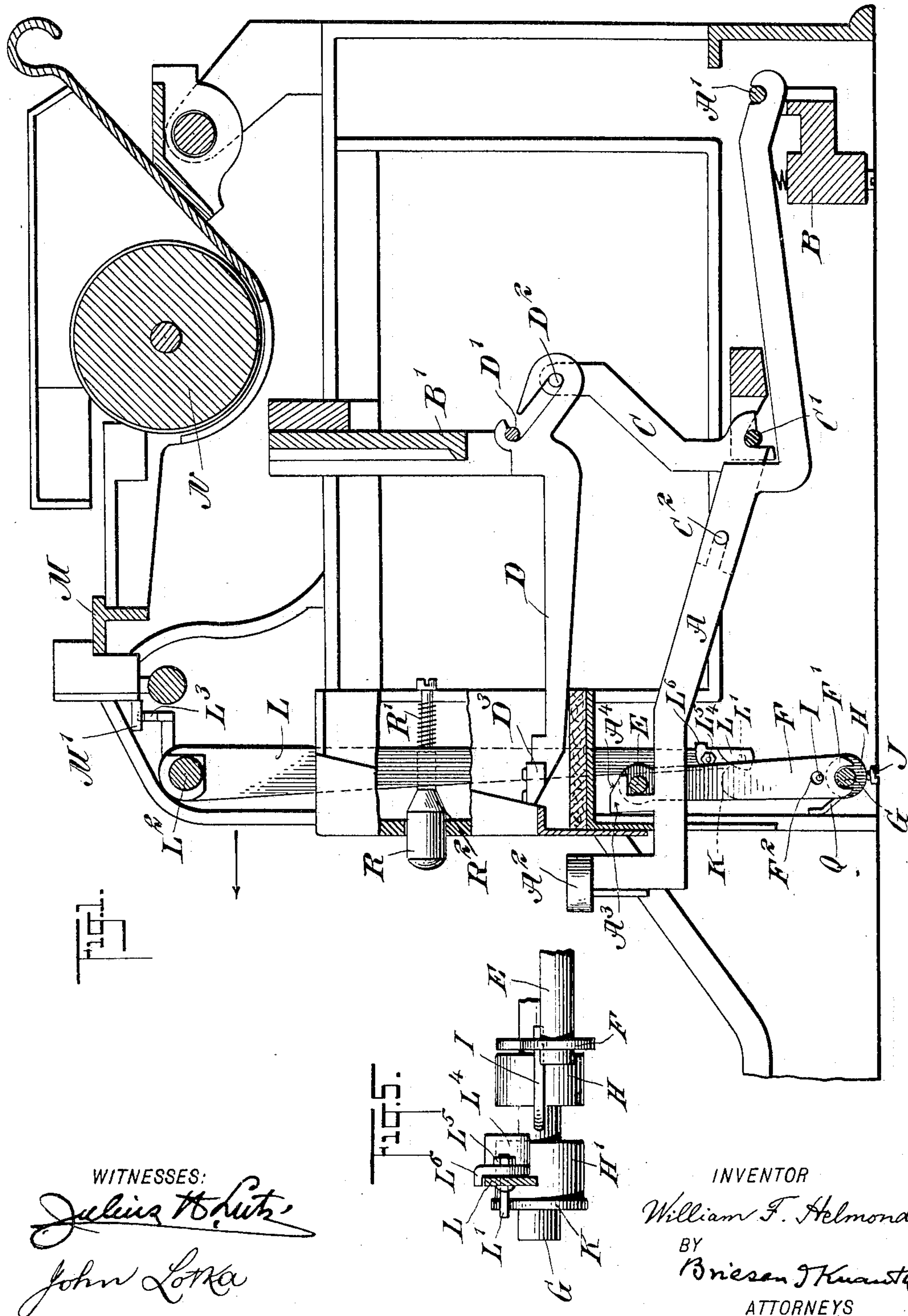
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W. F. HELMOND.  
MECHANISM FOR LOCKING THE KEY LEVERS OF TYPE WRITERS  
OR OTHER MACHINES.

APPLICATION FILED OCT. 8, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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MECHANISM FOR LOCKING THE KEY-LEVERS OF TYPE-WRITERS OR OTHER MACHINES.

SPECIFICATION forming part of Letters Patent No. 775,331, dated November 22, 1904.

Application filed October 8, 1903. Serial No. 176,243. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. HELMOND, a citizen of the United States, residing in Hartford, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Mechanism for Locking the Key-Levers of Type-Writers or other Machines, of which the following is a specification.

My invention relates to type-writers and other machines in which key-levers are employed, and has particular reference to mechanism used for the purpose of locking the key-levers at a predetermined point—for instance, when the end of a line is reached.

The object of my present invention is to improve devices of the above-indicated class, so as to reduce their weight, while at the same time securing a more rigid and therefore more reliable construction.

The invention will be fully described hereinafter and the features of novelty pointed in the appended claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of a typewriter provided with my improvement. Fig. 2 is a detail front elevation of the locking mechanism proper. Figs. 3 and 4 are sectional elevations on lines 3 3 and 4 4, respectively, of Fig. 2. Fig. 5 is a detail sectional plan on line 5 5 of Fig. 2. Fig. 6 is a detail sectional view illustrating certain parts shown in Fig. 1 in a different position, and Fig. 7 is a detail sectional view showing the same parts in still another position.

A indicates one of the key-levers, which is pivoted to the frame B at A' and which is provided with a key A<sup>2</sup>. This key-lever is connected with the printing mechanism in any approved manner. I have shown an elbow-lever C pivoted at C' and having a pin-and-slot connection with the key-lever at C<sup>2</sup>. This elbow-lever has a pin-and-slot connection at D<sup>2</sup> with a type-bar D, pivoted at D' upon the segment B' and provided with type D<sup>3</sup>. All of the key-levers A, or sundry of them, if preferred, are provided with hooks A<sup>3</sup>. Under certain circumstances, as more fully described

hereinafter, a locking-rod E is adapted to come under these hooks A<sup>3</sup>, as shown in Fig. 1, so as to prevent a downward movement of the key-levers. The locking-rod is carried by two arms F, which at their lower ends have forks F', adapted to loosely embrace a supporting-rod G. Upon this rod are arranged collars H, provided with longitudinally-extending pins I, which project through openings F<sup>2</sup> in the arms F. These openings are sufficiently large to allow of a limited oscillation of the arms F upon the supporting-rod G. The arms F are sufficiently yielding to enable them to be sprung inward so as to disengage them from the pins I. The collars H are secured upon the rod by means of set-screws J. Upon the rod G, I also mount suitable mechanism for throwing the said rod forward by the movement of the carriage when the end of a line is approached. The rod G is mounted to oscillate in suitable bearings on the frame of the machine and has secured to it a collar H', for instance, by means of a set-screw J', with which collar is connected an arm K. This arm is adapted to be engaged by a pin L', projected from a dog L<sup>4</sup>, pivoted at L<sup>5</sup> to a lever L. This lever is fulcrumed at L<sup>2</sup> and provided with a projection L<sup>3</sup>. When the end of the line is reached, the projection L<sup>3</sup> will be engaged by a lug M', projected from the carriage M, on which the platen N is mounted. Normally the arms K and the locking-rod E are held in the rearward position by a spring Q. (Indicated in Fig. 1.) When, however, the lug M' engages the projection L<sup>3</sup>, the lever L is swung forward, so as to bring the locking-rod E under the hooks A<sup>3</sup>. During this forward movement the dog L<sup>4</sup> is practically rigid with the lever L, owing to the provision of a lug L<sup>6</sup>, which projects laterally from the upper portion of the dog L<sup>4</sup> in the rear of the lever L.

In some cases it may be desired to release the key-levers from the locking-rod after the latter has been swung to the position shown in Fig. 1 by the action of the carriage. For this purpose I provide a sliding push-button R, normally held forward by a spring R' and



provided with a wedge  $R^2$  to force the lever  $L$  laterally, so that the pin  $L'$  will clear the arm  $K$ , allowing the spring  $Q$  to throw the arms  $F$  and the locking-rod  $E$  backward, thus releasing the key-levers. When the lever  $L$  swings back from the position shown in Fig. 7 after the projection  $L^3$  has been disengaged from the lug  $M'$ , the dog  $L^4$  swings on its pivot  $L^5$ , so as to enable the pin  $L'$  to ride over the upper end of the arm  $K$  and to again come to the rear of said arm, as shown in Fig 1.

When an operator depresses the keys very rapidly, it may happen that a key will be in its lower position when the locking-rod  $E$  swings forward, so that this locking-rod will come over the hook  $A^3$  instead of under the same. The key in this case would not only be prevented from returning to its normal position, but would be free to be operated again, whereas the intention is to lock the key. To meet this contingency, I have provided each hook  $A^3$  with a bevel  $A^4$  on its upper surface, so that it will have a tendency to throw the locking-rod out of its path in a rearward direction should the locking-rod be in the way of the hook  $A^3$  at the time of the upward or return movement of the key. For this purpose also the openings  $F^2$  are large enough to allow of a limited oscillation of the arms  $F$  and the rod  $E$  carried thereby upon the supporting-rod  $G$ . This movement is limited by a device consisting of an arm  $O$ , rigidly secured to the supporting-rod  $G$  by means of a sleeve  $H^2$  and a set-screw  $J^2$ . This arm is provided at its upper end with pins  $O'$ , between which the locking-rod is adapted to move. Normally the locking-rod is held forward by a spring  $P$ , secured to the arm  $O$  at  $P'$ . While the frame formed by the locking-rod  $E$  and the arms  $F$  is capable of a limited oscillating movement, it is rigidly held in all other directions; and particularly the distance of the locking-rod  $E$  from the supporting-rod  $G$  is always constant. Owing to the rigid construction employed two arms  $F$  are quite sufficient for properly holding the locking-rod  $E$ .

I claim as my invention and desire to secure by Letters Patent—

1. The combination, with key-levers, of a locking-rod arranged to prevent movement of said levers, arms projected from said locking-rod and provided with forks at their ends, a supporting-rod embraced by said forks, pins carried by said supporting-rod and extending

longitudinally thereof, and arranged for detachable engagement with the said arms, and means for moving the locking-rod.

2. The combination, with key-levers, of a locking-rod adapted to prevent the movement of said levers, arms projected from said rod and having forks at their free ends, an oscillating supporting-rod embraced by said forks, pins rigidly carried by said supporting-rod and extending longitudinally thereof and engaging said arms, yet allowing them to have a limited oscillating movement relatively to the supporting-rod, a spring for throwing the locking-rod in one direction relatively to the supporting-rod, means for throwing the locking-rod in the opposite direction by the return movement of a key, and means for moving the supporting-rod.

3. The combination, with key-levers and a locking-rod adapted to prevent the operation of the said levers, of a lever having a projection for transmitting motion to said locking-rod, and means for throwing said lever sideways so as to release the locking-rod from the action of said projection.

4. The combination, with key-levers and a locking-rod adapted to prevent their operation, of an oscillating supporting-rod connected with said locking-rod, an arm on said supporting-rod, an operating-lever having a projection arranged to normally engage said arm, and means for throwing said lever sideways so as to release said arm from the action of said projection.

5. The combination, with key-levers and a locking-rod adapted to prevent their operation, of a spring-pressed arm connected with said rod to oscillate therewith, an operating-lever, a dog pivotally mounted on said lever and limited in its movement in one direction, said dog being provided with a projection which normally engages the operating-lever, and a release device for throwing the said lever and the projection on said dog out of the path of the arm, so as to enable the locking-rod to be brought to an inactive position by the influence of the spring.

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

WILLIAM F. HELMOND.

Witnesses:

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