

M. PFAU.
TYPE WRITER KEY LOCK.
APPLICATION FILED APR. 4, 1911.

1,021,627.

Patented Mar. 26, 1912.

Fig. 1.

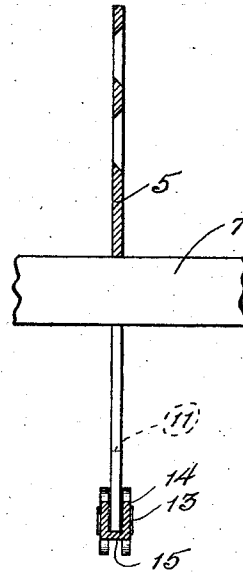
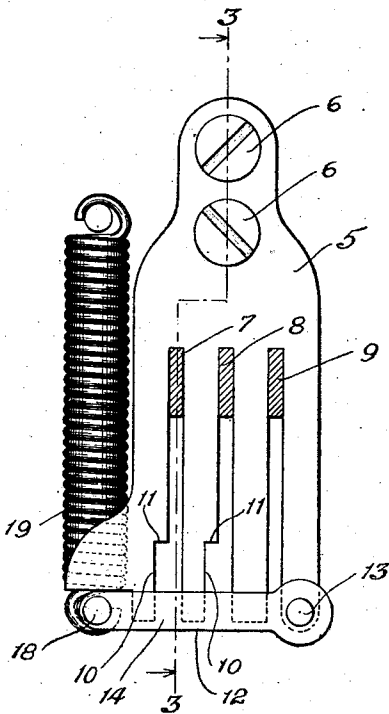


Fig. 3.

Fig. 2.

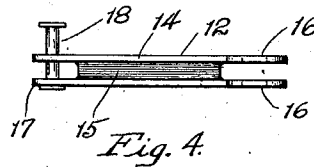
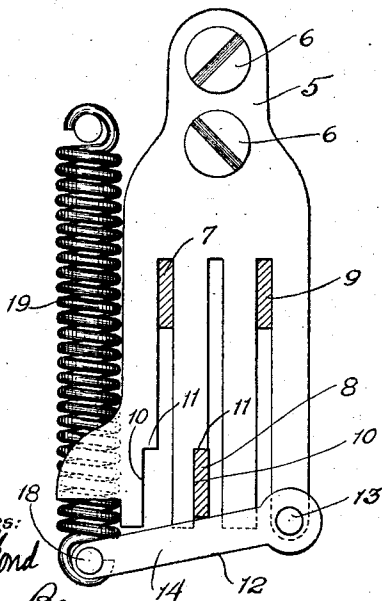


Fig. 4.

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UNITED STATES PATENT OFFICE.

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TYPE-WRITER KEY-LOCK.

1,021,627.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MAX PFAU, a citizen of Saxony, Germany, residing at Woodstock, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Typewriter Key-Locks, of which the following is a specification.

The present invention relates to a device for locking the shifting levers employed with typewriters, whereby when it is desired to utilize capital letters or figures for an extended period of time, the operator may, by locking these shifting levers, utilize such characters without the necessity of keeping his finger continually upon the levers to keep them depressed.

The object of the present invention is to provide a mechanism for accomplishing this locking operation which will be cheap and simple of manufacture, and which will contain no involved parts liable to become displaced and so render the device inoperative.

Another object of the present invention is to provide a mechanism which will be compact in form and easily applicable to the body of the typewriting machine without any change or addition to the construction of the framework of the machine.

A further object of the invention is to provide a mechanism which will permit of the normal movement of the key levers without locking them in thrown position, and to actuate the mechanism so as to permit of their being locked by merely increasing the degree of pressure on the lever and depressing it below its normal line of depression.

A still further object of the invention is to provide means for automatically returning the parts of the locking mechanism to normal position, and which will be of a nature to assist in the locking operation.

The invention also consists in the features of construction and the combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is an elevation of the mechanism of the present invention, showing the parts in normal position; Fig. 2, a view similar to Fig. 1, showing the parts in the position assumed when the key levers are locked; Fig. 3, a section on line 3-3 of Fig. 1, looking in the direction of the arrow; and Fig. 4, a detail showing a plan view of the stop member controlling

the recess in which the key lever is inserted when it is desired to lock the same.

In typewriting machines there are employed a series of levers known as shift-key levers, which are utilized for the purpose of shifting the position of the writing mechanism so as to bring the capital letters or the numerals into proper position to strike the writing line when the type keys are operated. It frequently is desirable to maintain this shifted position of the parts for a considerable period of time, and hence means are employed for locking these shift-key levers in their shifted position, so that a continual usage of the capital letters or numerals may be had. It is undesirable, however, that these locking mechanisms should operate at each actuation of the shift-key lever, since frequently the shifting of the parts is only employed for the printing of a single character, and, obviously, it is not desirable to lock and unlock the lever every time a shifting of the parts is desired.

It is the intention of the present invention to provide a locking member which will be inoperative during the normal actuation of the shift lever, but which, when a degree of movement is given to the shift lever greater than normal, will operate to enable the shift lever to be locked; and the mechanisms are so arranged that this locking operation can all be performed by the movement of the shift lever, and hence the utilization of only one finger of the operator is necessary in order to effect the entire locking and releasing operation.

The invention, as illustrated in the present drawings, consists of a plate 5 of suitable size and formation, which is secured to the body of the typewriter by any suitable means, as, for instance, screws 6. The plate is provided with a series of longitudinally extending slots 7, 8 and 9, two of which slots, 7 and 8, in the form shown are increased in width at their lower end to provide offset portions 10. It is understood that the number of these slots is immaterial to the principle involved in the present invention, and that one or more slots having this increased width may be employed, as desired.

By enlarging the slots 7 and 8 in the manner shown, a shoulder 11 is provided for each slot, under which shoulder the lever is

forced during the locking operation. It is desirable that the length of that portion of the slots which is increased in width should normally be too short to receive the key lever, whereby, in the normal operation of the lever, no positioning of the lever within this increased portion is possible, and hence no locking of the lever will occur during normal operation; and it is further desirable that means should be provided which would act, when a greater than normal pressure is exerted on the shift lever, to remove the obstruction to the slot, so that that portion of the slot which is of increased width will be sufficiently long to permit of the insertion of the lever thereinto and the consequent locking of the lever. The mechanism for performing this obstructing operation in the form shown in the drawings consists of a vibrating or oscillating U-shaped member 12, which is pivoted at 13, and is formed of a single sheet of metal U-shaped in cross-section, and comprising side walls 14 and a bottom wall 15. The bottom wall is cut away adjacent the ends, as shown in Fig. 4, so as to provide ears 16 at one end thereof, which receives the pivot for the member 12 and a pair of ears 17, through which extends a suitable pin 18 adapted to receive one end of a coiled spring 19, the other end of the spring being secured in any suitable manner.

As will be seen from a study of Figs. 1 and 2, the stop member 12 surrounds the lower end of the slotted plate 5, and the side walls 14 of the stop member extend a distance upward so that they cover the lower end of the enlarged portion of the slots and form an obstruction therefor. Thus, with the stop member in the position shown in Fig. 1, the length of the enlarged portion of the slot is decreased by reason of the fact that the side walls of the stop member are overlying the lower end of the plate 5 and cover the lower portion of the slots.

The operation of the device is as follows: Taking the parts as shown in Fig. 1, when one of the levers 20 is depressed normally, that is, when a normal amount of pressure is exerted by the operator upon the lever, the lever will descend in the slot in which it travels until the lower end of the lever contacts, or approximately contacts, the upper edge of the stop member 12. But in such a movement, owing to the fact that the stop member is overlying the lower end of the plate 5, the lower end of the slot, which is of increased width, will not be sufficiently long to permit of the insertion of the key lever thereinto, and hence no locking of the lever will result in this normal operation. When, however, the key lever is depressed into the position shown in Fig. 2, which position is assumed when a greater force than normal is exerted on the lever by the operator, the lever forces the obstructing member 12 into

the position shown in Fig. 2, in which position the member 12 is forced downwardly and away from the plate 5; and thus the obstruction to the increased portion of the slot is removed, so that the length of the increased portion 10 of the slot is increased sufficiently to receive the lever. After the depression of the lever sufficiently to lower the stop member 12 into the position shown in Fig. 2, a slight sidewise movement of the lever will throw it so that it will rest under the shoulder 11, and thus will be locked in position.

As will be seen from a study of Fig. 2, when the lever is in locked position, the upper edge of the lever is engaged by the shoulder 11, and the lower edge of the lever is engaged by the top face of the member 12. Since this member is under spring control, this serves to place the lever in engagement with a spring-controlled member which has a spring pressure exerted thereon, normally tending to hold it in engaged position with the lever; and thus this spring pressure serves to increase the locking efficiency. The upward movement of the members is limited by the bottom wall 15 engaging the lower wall of the plate 5, and the member 12 is returned and maintained in normal position by the spring 19.

I claim:

1. A key-lever lock for typewriters, comprising a member having a recessed slot therein, and means operated by the movements of the key-lever for increasing the normal length of said recessed portion, whereby the lever may be inserted within said recessed portion and locked, substantially as described.

2. A key-lever lock for typewriters, comprising a member having a recessed slot therein, a vibratory member adapted to normally decrease the length of the recessed portion of the slot to prevent entrance of the key-lever thereinto, a movement greater than normal of said key-lever moving said vibrating member to permit the insertion of the lever within said recessed portion, whereby the lever is locked, substantially as described.

3. A key-lever lock for typewriters, comprising a member having a recessed slot therein, means operated by the movements of the key-lever for increasing the normal length of said recessed portion, whereby the lever may be inserted within said recessed portion and locked, and means for automatically returning the parts controlling the length of the recessed portion to normal position, substantially as described.

4. A key-lever lock for typewriters, comprising a member having a recessed slot therein, a vibratory member adapted to normally decrease the length of the recessed portion of the slot to prevent entrance of

the key-lever thereinto, a movement greater than normal of said key-lever moving said vibrating member to permit the insertion of the lever within said recessed portion, whereby the lever is locked, and means for automatically returning the vibrating member to normal position, substantially as described.

5. A key-lever lock for typewriters, comprising a member having a recessed slot therein, a vibrating member serving to normally decrease the length of said recessed portion of the slot, whereby the key-lever is prevented from entering said slot when moved normally, a movement of the lever greater than normal moving said vibrating member into position whereby said lever can be inserted within the recessed portion of the slot and locked, said vibrating member engaging said lever in its locked position and assisting to maintain it in such position, substantially as described.

6. A key-lever lock for typewriters, consisting of a member having a recessed slot therein, said recess being at the lower end of the slot, a vibrating member overlying the lower edge of said slotted member and normally decreasing the length of the recessed portion of the slot to prevent the entrance of the key-lever thereinto, said lever when thrown to its farthest position moving said vibrating member into position whereby the key-lever may be inserted within the recessed portion of the slot and locked, substantially as described.

7. A key-lever lock for typewriters, comprising a member having a recessed slot therein, a vibrating member serving to normally decrease the length of said recessed portion of the slot, whereby the key-lever is prevented from entering said slot when moved normally, a movement of the lever greater than normal moving said vibrating member into position whereby said lever can be inserted within the recessed portion of the slot and locked, said vibrating member engaging said lever in its locked position and assisting to maintain it in such position, and tension mechanism for returning the vibrating member to and maintaining it in normal position, substantially as described.

8. A key-lever lock for typewriters, comprising a member having a recessed slot therein, a vibrating member serving to normally decrease the length of said recessed portion of the slot, whereby the key-lever is prevented from entering said slot when moved normally, a movement of the lever greater than normal moving said vibrating member into position whereby said lever can be inserted within the recessed portion of the slot and locked, said vibrating member

engaging said lever in its locked position and assisting to maintain it in such position, and means for limiting the upward movement of said vibrating member, substantially as described.

9. A key-lever lock for typewriters, comprising a member having a recessed slot therein, said recess being at the lower end of the slot, a U-shaped vibrating member embracing the lower end of the slotted member and serving to decrease the length of the recessed portion of the slot to prevent the entrance of the key-lever thereinto, and adapted when engaged and moved by the key-lever to move into position to increase the length of the recessed portion of the slot, whereby the key-lever may be inserted within the recessed portion of the slot and locked, substantially as described.

10. A key-lever lock for typewriters, comprising a member having a recessed slot therein, said recess being at the lower end of the slot, a U-shaped vibrating member embracing the lower end of the slotted member and serving to decrease the length of the recessed portion of the slot to prevent the entrance of the key-lever thereinto, and adapted when engaged and moved by the key-lever to move into position to increase the length of the recessed portion of the slot, whereby the key-lever may be inserted within the recessed portion of the slot and locked, and tension mechanism for automatically returning the vibrating member to normal position, substantially as described.

11. A key-lever lock for typewriters, comprising a member having a recessed slot therein, said recess being at the lower end of the slot, means actuated by the movement of the key-levers for controlling the length of the recessed portion of the slot, whereby a movement of the lever greater than normal moves the controlling means out of normal position to permit of the insertion of the lever into the recessed portion of the slot, substantially as described.

12. A key-lever lock for typewriters, comprising a slotted member having an offset portion providing a shoulder, and movable means for normally preventing the key-levers from engaging said shoulder, a movement of said lever greater than normal shifting said movable means, whereby the lever can be brought into engagement with said shoulder and locked, substantially as described.

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