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R. G. THOMPSON

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TYPEWRITER

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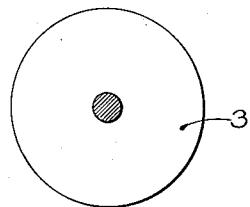


Fig. I

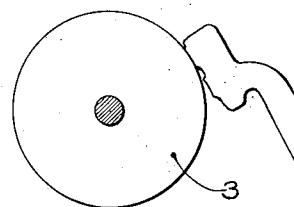
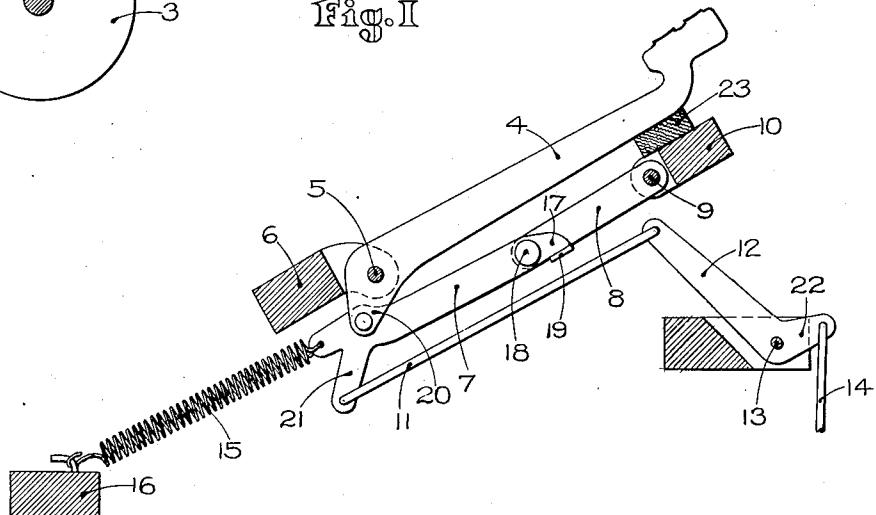
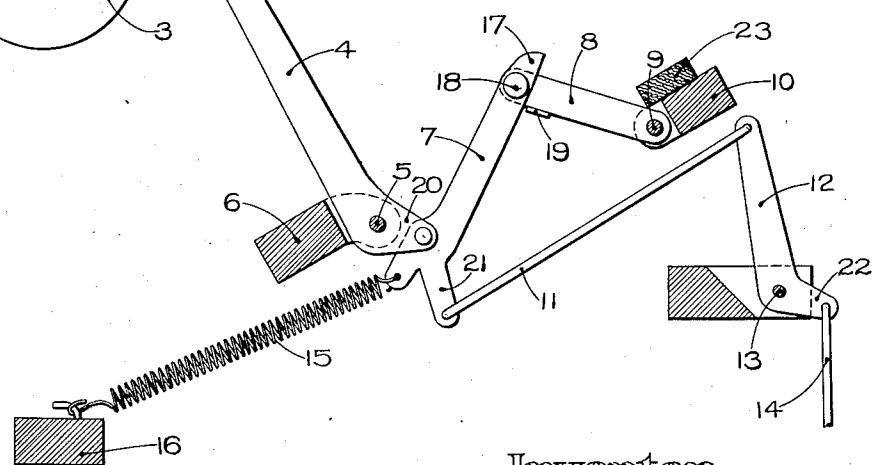


Fig. 2



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TYPEWRITER

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This invention relates to mechanism for actuating the type bars of a typewriting machine.

In certain constructions previously proposed a toggle has been used to actuate the type bar, this toggle being straightened as the bar returns to its normal position, with the result that the bar is locked against rebound. The present invention relates to a machine of this type, and the object of the invention is to produce a type-bar mechanism particularly adapted for use in machines of the basket-shift type, and in machines in which power mechanism is used to actuate the type bars. To this end the mechanism is so arranged that the toggles are actuated by links extending forwardly beneath, and substantially parallel with the toggles, the actuating mechanism for the links being attached at their forward ends. This arrangement permits a more advantageous design and arrangement of the actuating mechanism, and affords other advantages which will be set forth hereinafter or will be obvious to those skilled in the art to which this invention pertains.

In the accompanying drawings Fig. 1 is a side elevation showing a single type-bar action of a machine embodying the present invention, with the parts in the normal or inactive position, while Fig. 2 is a similar view, except that the parts are shown in the position assumed when the type is in engagement with the platen.

The invention is illustrated as embodied in a typewriting machine having the usual platen 3, and a type bar 4 of ordinary form pivoted, at 5, upon a member 6 of the frame of the machine. The type bar has a short depending arm 20, and at the lower end of this arm is pivoted an actuating lever having, in turn, a short depending arm 21 and a long forwardly-extending arm 7. A toggle link 8 is connected at its forward end, by means of a pivot 9, with a frame member 10, while the rear end of the link is connected, by a pivot 18, with the arm 7 near the forward end thereof. A link 11 is pivoted to the depending arm 21 on the actuating lever, while the forward end of the

link is pivoted to one arm 12 of a bell-crank lever, which is pivoted at 13 upon the frame of the machine. The forwardly-extending arm 22 of the bell-crank lever may be connected, by means of a link 14, with means, 55 either manual or power-operated, for moving the type-bar mechanism.

In the normal position of the type bar, as shown in Fig. 1, the toggle comprising the arm 7 and the link 8 is in substantially 60 straight-line position, being drawn to and held in that position by a spring 15 which is attached, at one end, to the actuating lever and, at the other end, to a frame member 16. In this position of the parts the type 65 bar preferably rests upon a cushion 23, in the usual manner, although the use of such cushion is not essential to the operation of the mechanism. The movement of the toggle to locking position is arrested by the 70 engagement of the extended end 17 of the arm 7 with a lug 19, projecting laterally from the link 8. This engagement prevents the toggle members from moving substantially beyond straight-line position on the 75 return movement of the type bar.

When the bell-crank lever is moved to the position of Fig. 2, by a pull upon the link 14, it in turn pulls upon the link 12, and this, by rocking the actuating lever, causes 80 the toggle to be bent. This results not only in unlocking the type bar, but also in pulling forwardly upon its depending arm 20, thus swinging the type bar into engagement with the platen, as shown in Fig. 2. Upon 85 the return of the parts, under the influence of the spring 15, the toggle becomes straightened at the moment when the type bar strikes the cushion 23, and thus prevents any recoil of the bar from the cushion.

In the use of this mechanism in a basket-shift machine, for which it is particularly adapted, the frame members 6 and 10 will be arranged to rise and fall in the ordinary manner of a machine of this type, to cause 95 case shifting in the usual way, and the link 11 will accommodate itself to this motion, thus permitting the pivotal support of the bell-crank lever 12 to remain stationary. The frame member 16 may also be station- 100

ary. The mechanism is shown as in the position for writing capitals and other upper-case characters. In the case of a shift to lower-case characters, which, in a basket-shift machine, involves a raising of the type bar and the toggle mechanism, the change in the angular position of the link 11 will be such as to reduce slightly the length of movement imparted to the type bar in consequence of a given movement of the bell-crank lever, thus causing lower-case characters to be struck with slightly less force than that applied to upper-case characters, and this is a desirable characteristic of the mechanism herein set forth. The possibility of arranging the linkage to produce this result is due to the fact that the point of attachment of the link 11 is at a distance below the type-bar pivot 5 which is substantially greater than where the pull link is attached directly to the depending arm of the type bar, as in the ordinary basket-shift machine. In such ordinary construction it is not practicable to attach the pull link at a point so remote from the type-bar pivot, by reason of the fact that this involves a lever arm so long as to require an inordinate length of movement in the link and the bell-crank lever.

30 The invention claimed is:

1. In a typewriting machine, the combination, with normally stationary frame members, of a type bar pivoted on the frame and having a short depending arm adjacent its pivot, an actuating lever pivoted to said arm and having a depending arm and a forwardly extending arm, a link pivoted to the frame and to said forwardly extending arm and constituting, with the latter, a toggle to lock the type bar against rebound, and means engaging said depending arm of the actuating lever to move the arm forwardly to bend the toggle and actuate the type bar.

2. The combination set forth in claim 1, characterized by the fact that the said means comprises a link pivoted to and extending forwardly from the depending arm of the actuating lever, and means for pulling upon the forward end of said link.

50 3. The combination set forth in claim 1, together with a spring attached to the actuating lever and tending to straighten the toggle and return the type bar to normal position.

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