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POWER MECHANISM

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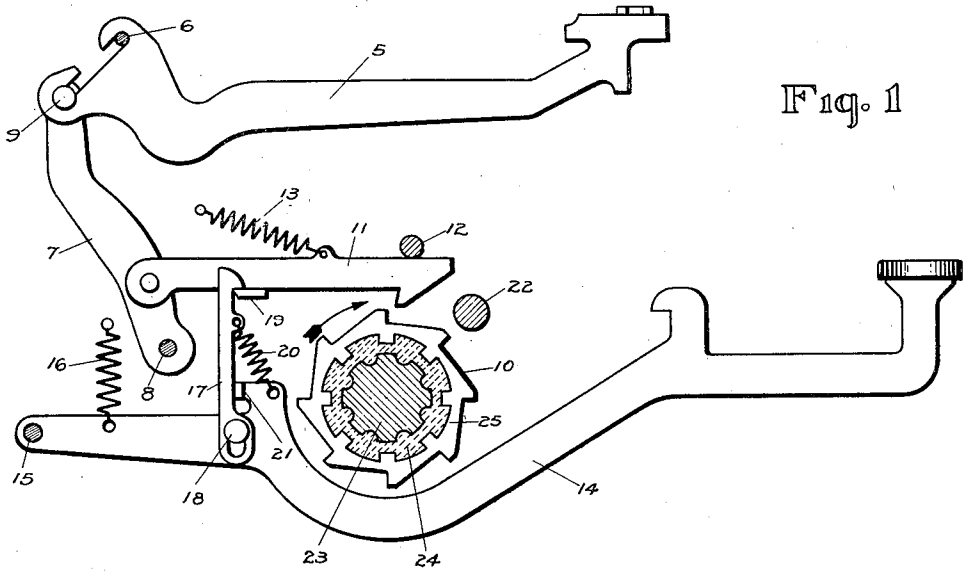


Fig. 1

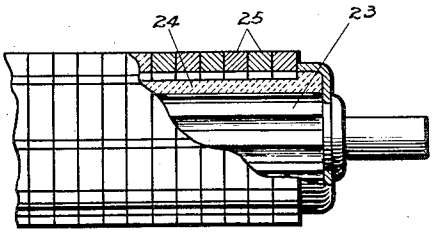


Fig. 2

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POWER MECHANISM.

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This invention relates to mechanism through which a typewriter, or similar machine, may be actuated by power derived from an electric motor, or other suitable source.

In some machines, of the kind in question, a constantly rotating shaft or power-member is used, this member being provided with shoulders or abutments adapted to cooperate with any one of a series of followers, or actuating members, connected respectively with the several type-bars, or other elements of the machine, which are to be actuated. To cause the actuation of a type-bar, the corresponding actuator is moved, through the depression of an appropriate key, into engagement with the rotary power-member, and is pulled thereby through the space necessary to actuate the type-bar, being then automatically released and permitted to return. A machine of this type is shown, for example, in United States Letters Patent No. 1,199,824 to Schlüns.

In machines having the described mode of operation, the several elements above referred to have heretofore been made rigid in their structure, so that to avoid injury to the mechanism, it has been found necessary to provide interlocking means to prevent the simultaneous depression of two keys, since injury would result if the two type-bars were to be actuated simultaneously and to interfere in their movements.

The object of the present invention is to provide, in a simple and effective manner, for a sufficient degree of elasticity in the power mechanism to prevent injury in the case of simultaneous operation of two type-bars, or other parts, which are to be actuated; and also to free the mechanism from the strain and wear incidental to the rapid operation of rigid parts.

To the foregoing end it is proposed to interpose a yielding element in the rotary power-member. This is accomplished by making the toothed or fluted peripheral portion separate from the rigid central part, or shaft, and interposing between these parts a body of rubber, or other suitable yielding but resilient material, so that a slight relative rotary motion of the outer and inner parts of the power-member may occur, in consequence of the reaction of the actuator against the power-member. The invention will be more fully set forth in the description of the illustrated embodiment thereof.

In the accompanying drawings, Fig. 1 is a side-elevation of a power mechanism embodying the present invention, showing one assembly of type-bar, key and actuating mechanism, together with a sectional view of the rotary power-member. Fig. 2 is a front-elevation, partly in section, of one end of the rotary power-member.

The invention illustrated is embodied in a typewriter, having a type-bar 5 pivoted at 6 and actuated, in a well known manner, by means of an upright lever 7. The lever is mounted on a stationary pivot 8, and is connected with the type-bar by a sliding pin 9.

The rotary power-member 10 has the usual toothed or fluted form, and turns constantly in a clockwise direction. The actuator 11 is in the form of a bar pivoted at its rear end to the lever 7, and provided with a hook-like forward end. This actuator is normally held in its upper position, resting against a stop-bar 12, by means of a spring 13.

The key-lever 14 is mounted on a pivot 15 at its rear end, and held normally in raised position by a spring 16. A trip 17, connected with the key-lever at its lower end by means of a pin 18, has a hooked upper end which bears against a lateral lug 19 on the actuator 11; and a spring 20, connecting the trip with the key-lever, holds the trip normally in its forward position, resting against a stop-lug 21 on the key-lever. When the key is depressed the trip pulls the actuator downwardly, so that its hooked end engages one of the abutments on the power-member, whereupon the actuator is pulled forwardly, thus swinging the lever 7 and actuating the type-bar. This forward movement of the actuator is limited by means of a bar 22, which is engaged by the beveled forward end of the actuator, thus causing the latter to rise out of engagement with the power-member. During the same forward movement, the lug 19 is moved out of engagement with the trip 17, so that the spring 13 holds the actuator up against the rod 12 while the actuator returns to its original position. When the key is released, the trip 17 snaps back into engagement with the lug 19, ready for a renewed operation

The mechanism just described is not novel, and is not essential, in the particular form set forth, to the present invention, but is described merely as an example of mechanism which may be actuated by the improved rotary power-member in which the invention resides. This power-member comprises a central metal core or shaft 23, upon which a body 24, of soft or semi-soft rubber is mounted. To cause the rubber to rotate with the shaft, the latter is fluted, or otherwise roughened, and the rubber is preferably moulded upon the shaft. The fluted or toothed periphery of the power-member, instead of consisting of a single continuous body, is made of a series of toothed rings 25, placed close together along the length of the power-member. These consist preferably of hardened steel, and should be of a thickness such as to correspond with the lateral spacing of the actuators, so that there is a ring corresponding to each actuator. On their inner surfaces the rings are toothed or roughened, to give a secure grip on the rubber 24. Preferably, the rings and the shaft are held in correct relation in a suitable mould, and the rubber 24 is moulded and vulcanized in place between them.

When any one of the actuators 11 is engaged with the corresponding ring 25, the latter is free to yield angularly, owing to the interposition of the rubber, but the elasticity of the rubber restores the parts to the correct relative position during the actuating movement, thus causing the movement to be fully performed, unless some interference occurs in the mechanism, which prevents the type-bar from making a full stroke.

The invention claimed is:

1. A rotary power member, for cooperation with type-bar actuators or the like, comprising: a rigid central shaft, a series of toothed rings concentric with said shaft, and a body of yielding resilient material interposed between and rotatively connecting said shaft and rings.

2. A rotary power member, for cooperation with type-bar actuators or the like, comprising: a fluted metal shaft, a series of contiguous metal rings provided with both inner and outer teeth, said rings being concentric with said shaft, and a body of soft rubber interposed between the shaft and the rings and interlocked therewith.

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