G. R. KNICK.

MECHANICAL MOVEMENT.

APPLICATION FILED FEB. 17, 1920.

1,354,766. **Patented Oct. 5, 1920.**

Fig. 1.

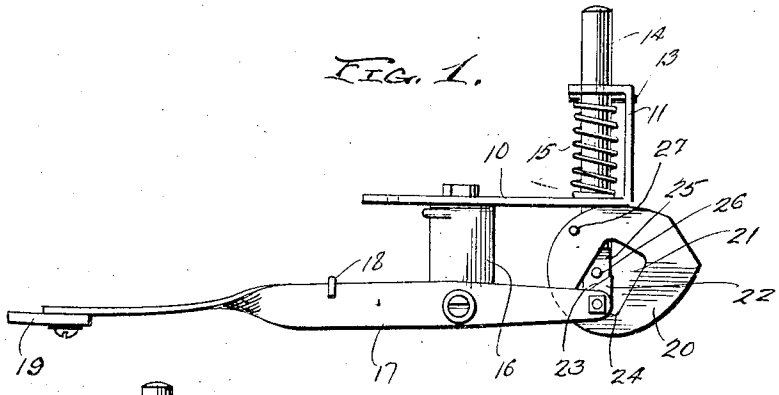


Fig. 2.

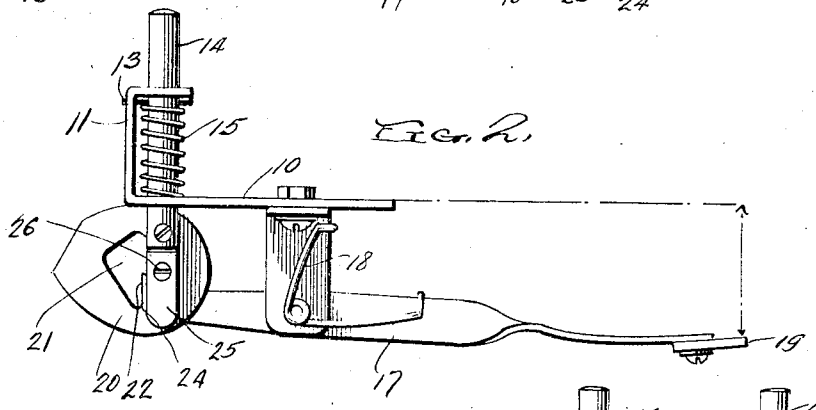


Fig. 3.

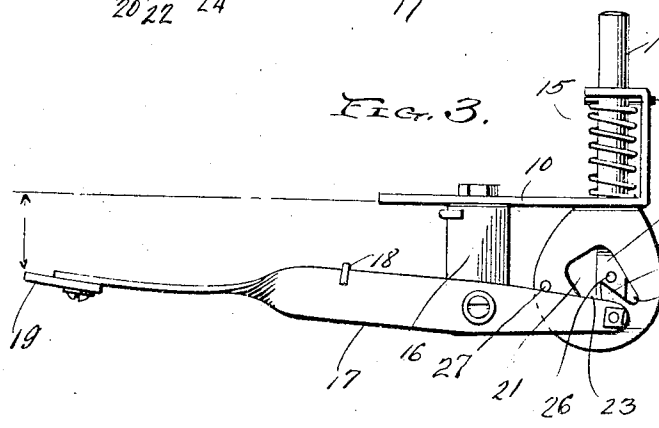
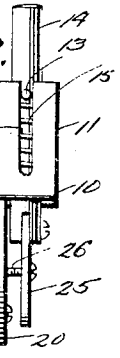


Fig. 4.



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MECHANICAL MOVEMENT.

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To all whom it may concern:

Be it known that I, GLENN R. KNICK, a citizen of the United States, residing at Troy, in the county of Miami, State of Ohio, have invented certain new and useful Improvements in Mechanical Movements; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in mechanical movements.

One object of the invention is to provide a novel and improved device of this character whereby a single means is used to cause a reversal of the device.

Another object is to provide a novel and improved device which can be thrown into or out of operative relation to the machine or appliance to be acted upon by the use of a single actuating means.

Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawing.

In the drawing:

Figure 1 is a side elevation of the device in operative position.

Fig. 2 is a side elevation of the device, as viewed from the opposite side to that of Fig. 1, and in the same position.

Fig. 3 is a side elevation from the same side as that of Fig. 1, but in inoperative position.

Fig. 4 is an end elevation looking toward the shiftable disk.

Referring particularly to the accompanying drawing, 10 represents a support, which, in the form illustrated, is a horizontal flat bar having one end turned upwardly and then horizontally in parallel relation to the main body portion thereof, as shown at 11. In the upturned portion of the support there is formed a longitudinal slot 12, in which plays the laterally projecting pin 13 of the plunger 14. This plunger is disposed to slide through the portion 11 and the body portion of the support. Coiled around the plunger between the pin 13 and the body of the support, is a spring 15 which normally urges the plunger upwardly. Depending from the support is a bracket 16, and pivotally mounted on the lower end of this bracket is a lever 17. A spring 18 is engaged around the pivot of the lever and has its ends engaged respectively with the bracket and the lever to normally urge the lever in one direction. On the outer end of the lever is secured a friction member 19 which is arranged to engage with a portion of the governor of a graphophone motor, in the specific embodiment of the invention, but may be arranged to actuate any mechanism desired.

Pivotally mounted on the inner end of the lever is a vertically disposed disk 20, in which is formed an opening 21. This opening is elongated vertically, and formed in the lower wall thereof is an upwardly extending triangular lug 22 which separates the two notches 23 and 24. Pivotally connected to the lower end of the plunger is a short link 25 having a transverse pin 26 which plays in the opening of the disk and is arranged to ride, first on one side of the lug 22 and then on the other to cause the disk to rock from side to side. One portion of the peripheral edge of the disk 20 is formed with a flat face which is arranged to engage with the lower face of the support 10, when said disk is rocked in one direction by the pin 26 of the link 25.

By an inspection of the drawing it will be seen that the link 25 hangs perpendicularly, so that the pin 26 thereof is in position to engage one or the other of the inclined faces of the lug 22. It will also be noted that the disk is slightly elongated in a direction between the pivotal connection with the lever and the flat face so that when the flat face is engaged with the support the adjacent end of the lever is depressed with the result that the other end of the lever is raised. When the plunger is pushed downwardly the pin 26 will engage with one of the faces of the lug 22 and rock the disk on its pivot so as to disengage the flat face from the support and dispose the disk in such position that its minor axis extends from the pivot to the support, with the result that the adjacent end of the lever will be permitted to rise and allow the spring 18 to swing the lever on its pivot and lower the outer end.

It will be particularly noted that the spring 18 exerts such pressure on the lever as to force the disk firmly against the support, whereby all danger of the disk accidentally moving from one or the other of its positions is prevented.

It will be readily seen that the parts are

so formed, proportioned, and connected together, that the pin 26 and the inclined faces of the lug 22 will at all times be disposed in such relation to each other that said pin will ride on one or the other of said faces, when the plunger is depressed, with the result that the disk will be rocked on its pivot and rock the lever into or out of operative position.

The disk carries a pin 27 which is arranged to engage with one edge of the lever when said disk is swung over into one limit of its movement, which will serve to stop the disk in such position that its flat face is in engagement with the support. In the other limit of its rocking movement the pin 27 engages with the lower portion of the plunger, thereby stopping the disk from further movement in that direction. Thus, upon two successive depressions of the plunger the disk will be rocked first in one direction to rock the lever into operative position, and then in the other direction to rock the lever into inoperative position. When the device is used in connection with a graphophone the manipulation of the plunger serves to apply the brake and release the same, thereby doing away with an extra part.

I wish it understood that I do not intend the limitation of the present showing to brakes, as the device is capable of use for actuating various other devices or appliances, the principle residing in the single means for accomplishing the movement of a part into and out of actuating position by two successive and like movements of said means.

What is claimed is:

1. A mechanical movement including a support, a rockable operating element mounted on the support, an oscillatory member mounted on the operating element and having a longer and a shorter side and inclined portions, a plunger mounted for successive and like movements in the same direction, and a link movably mounted on the plunger and engageable successively with the inclined portions to move the oscillatory member to engage its longer and shorter sides successively into engagement with the support.

2. A mechanical movement including a rocking arm, a disk pivotally mounted on one end of the arm and having an aperture therethrough, one portion of the wall of the aperture being formed with a tapering projection extending toward the center of the aperture, a plunger arranged for successive depressions, a link pivotally mounted on the plunger, and a pin on the link engaging the opposite sides of the projection to rock the disk first in one direction and then in the other to rock the rocking arm.

3. A mechanical movement including a support, a rock arm mounted on the support, resilient means for normally urging the arm in one direction, a disk pivotally supported on one end of the arm and engaging with the support, said disk having an opening therethrough with a tapering projection extending inwardly from one wall thereof, the peripheral edge of the disk having a flat portion, a plunger, a link pivotally carried by the plunger, a pin on the link engageable first with one side of the projection and then the other to rock the disk to move the flat portion of its periphery into and out of engagement with the support and the consequent rocking of the arm, and means for holding the plunger in such position that the link and pin will be in position to engage one or the other of the faces of the projection at all times.

4. A mechanical movement including a support, a rockable operating element pivotally mounted on the support, an oscillatory member carried by one end of the operating element, and a single means arranged for successive and like manipulations into engagement with the oscillatory member to move the oscillatory member successively in opposite directions into engagement with the support and the operating element into and out of operative position.

5. A mechanical movement including a support, a rockable operating element mounted on the support, an elongated oscillatory member connected with one end of the operating element, and a single means arranged to be moved into successive engagements with the oscillatory member to move the oscillatory member in opposite directions and successively engage one end and one side with the support and the rockable element into and out of operative position.

In testimony whereof, I affix my signature, in the presence of two witnesses.

GLENN R. KNICK.

Witnesses:
S. R. FERGUS,
R. H. CODY.