Oct. 16, 1934. A. F. FORNELIUS 1,977,546

SPRING POWER MECHANISM

Filed April 23, 1934

Fig. 1.

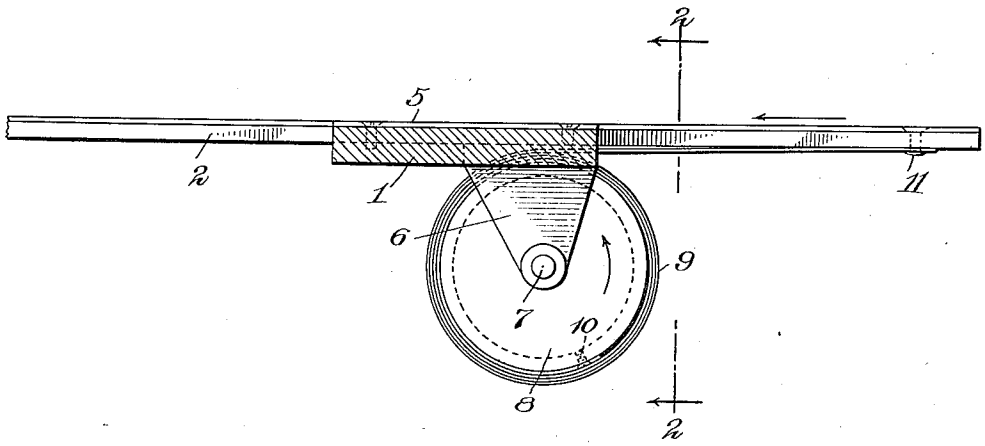


Fig. 2.

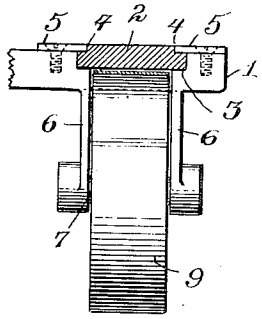
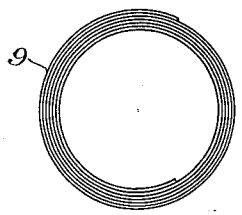


Fig. 3.



WITNESSES

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SPRING POWER MECHANISM

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4 Claims. (Cl. 267—1)

This invention relates to spring power mechanism, an object of the invention being to provide a mechanism utilizing a normally coiled or spiral ribbon spring so that when the spring is unwound, it will tend to wind and will exert a uniform spring tension or pull regardless of how far the spring may be unwound.

A mechanism of this character is adapted for many uses. One important use is in connection with a typewriter carriage in which the mechanism will insure a uniform tension on the carriage regardless of where the carriage may be on the frame.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, all of which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawing—

Figure 1 is a view mainly in elevation, but partially in longitudinal section, illustrating a simple form of my improved spring power mechanism;

Figure 2 is a view in transverse section on the line 2—2 of Figure 1; and

Figure 3 is a side or edge view of the coiled or spiral ribbon spring.

It is to be understood that the drawing illustrates more or less diagrammatically the application of my improved spring mechanism illustrating how the spring functions to exert power and to insure a uniform exertion of power and tension regardless of how much or how little the spring is extended or unwound.

For purposes of illustration, we will assume that the part 1 constitutes a block or support, and the part 2 a sliding bar which is mounted to slide in the block or support 1. The block 1 is shown as being recessed at 3 for the accommodation of the bar 2, and said bar is grooved at its edges, as shown at 4, and plates 5, secured in the block 1 project over the grooved portions 4 and insure a sliding contact between the block and the bar. Bearing brackets 6 are fixed to the block 1 and support an arbor 7 on which a rotary drum 8 is mounted. 9 represents my improved coiled or spiral ribbon spring, which is mounted on the drum 8, and which is secured at one end to the drum by means of pins or screws 10. The outer or free end of the spring 9 is secured to the bar 2, as shown at 11, so that when the bar is moved to the right of Figure 1, assuming that the block 1 is stationary, the spring will be uncoiled, and the drum 8 will be caused to turn, and when permitted, the tendency of the spring 9 to coil, will cause the drum 8 to turn and the bar 2 will be moved to the left of Figure 1.

So-called coiled springs as heretofore used have required some winding mechanism to place them under sufficient tension to work, and the tendency of the spring to unwind is utilized as a power factor. My improved spring operates in exactly the reverse manner to the ordinary coiled spring in that it is normally coiled and when it is drawn out from coiled to uncoiled condition, its tendency is to coil, and by reason of this, the spring will exert a uniform tension regardless of how little or how great it may be uncoiled. Of course, the invention is not limited to any specific manner of making the spring. In order that it might be distinguished from the ordinary spring which is tempered while straight, my improved spring is coiled, and while it is coiled, it is tempered, and I provide no means for winding or coiling the spring on the apparatus when it is in use, but utilize only the tendency of the spring to coil, and by supporting the spring on a rotary drum, such as indicated at 8, it will be readily understood that either the block 1 or the bar 2 may constitute a movable member. As above explained, the drawing is merely an illustration of the spring power mechanism as this mechanism may be utilized in connection with typewriter carriages or sash valances, or for many other uses, and I desire to cover broadly the use of this spring in connection with any apparatus on which it is capable of use.

I claim:—

1. A spring power mechanism, including two members, one member movable relative to the other, a rotary drum carried by one member, a spiral ribbon spring mounted on the drum and secured to the drum and to the other member, said spring normally coiled and when uncoiled by the movement of one member relative to the other, said spring tends to wind and return the members to their former position.

2. A spring power mechanism, including two members, one member mounted to move relative to the other, a normally coiled spiral ribbon spring having rotary mounting on one member and secured at one end to the other member so that when the members are moved relative to each other in one direction the spring will be unwound and when permitted the spring will tend to wind and return the parts to their former position.

3. A spring power mechanism including a support, a drum having rotary mounting on the

support, a normally coiled spiral ribbon spring mounted on the drum, a member movable relative to the support and to which the free end of said spring is connected so that when said last-mentioned member is moved in one direction the drum will be turned and the spring uncoiled and when permitted the spring by its own power will turn the drum in the opposite direction and return the member to its former position, said spring exerting a uniform tension regardless of how far or how great it may be unwound.

4. A spring of the character described comprising a ribbon normally wound in spiral form and adapted when unwound to return to its wound position.

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