C. A. MILLER.

SPRING BOX FOR TIME LOCK MOVEMENTS.

APPLICATION FILED DEC. 21, 1908.

**954,323.** **Patented Apr. 5, 1910.**

Fig. 1.

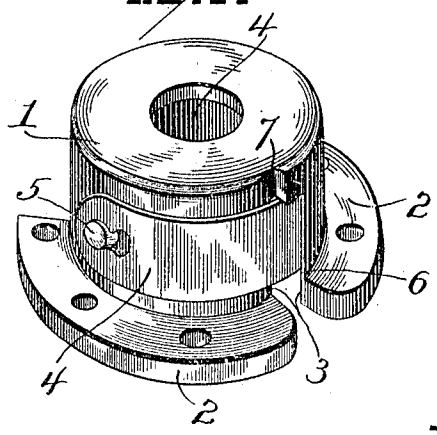



Fig. 2.

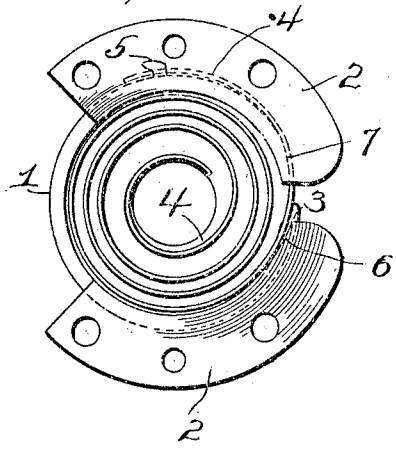
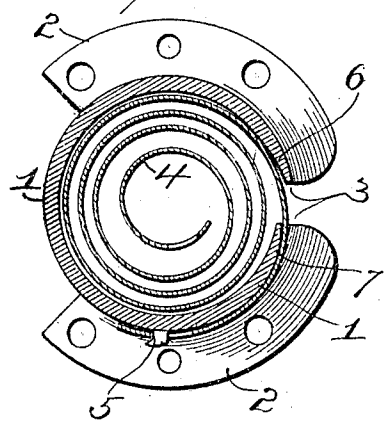



Fig. 3.




WITNESSES

E. L. Nottingham

G. F. Downing

INVENTOR

C. A. Miller

By A. G. Seymour

Attorney

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

CHARLES A. MILLER, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE YALE & TOWNE MANUFACTURING COMPANY, OF STAMFORD, CONNECTICUT.

## SPRING-BOX FOR TIME-LOCK MOVEMENTS.

954,323. Specification of Letters Patent. **Patented Apr. 5, 1910.**

Application filed December 21, 1908. Serial No. 468,549.

*To all whom it may concern:*

Be it known that I, CHARLES A. MILLER, of Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Spring-Boxes for Time-Lock 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.

My invention relates to an improvement in spring boxes for time lock movements.

Heretofore it has been the universal practice to attach one end of the time movement spring, to a lug or pin fixed to the inside of the spring housing, the lug or pin projecting into the housing. This inwardly projecting lug has always been an objectionable feature, as it projects sufficiently to engage the next coil of the spring and bend the latter inwardly, and when wound or under tension, the tendency of the spring is to pull away from the inner surface of the box, thus throwing all the strain on the pin and on the end of the spring weakened by the hole through which the pin or lug passes.

The object of my invention is to provide a box or housing for the spring, with means whereby the tension on the spring forces its attached end into contact with the box, and thus by its frictional contact with the outer surface of the box, relieve the lug or pin and the end of the spring of destructive strains.

A further object is to so connect the spring and box, that the former can be placed within the box and secured thereto without the employment of special tools.

With these ends in view my invention consists in the parts and combinations of parts and in the details of construction, as will be more fully explained and pointed out in the claim.

In the accompanying drawings, Figure 1 is a view in perspective of my improved spring box or barrel. Fig. 2 is a view in elevation of the spring and box looking toward the rear or open end of the box and Fig. 3 is a view in transverse section taken through the spring holding lug or pin.

1 represents the housing open at one end and closed at the other, the closed end having a central opening for the passage of a shaft or spindle. The open end of the box is provided with a flange 2, by which it is secured in its proper position to the frame carrying the time movement of the lock. This box or housing is provided in its side and through its flange 2 with a slot 3 which latter is of ample width to permit the spring 4 to readily pass therethrough. The inner wall of the box, at the side of the slot farthest removed from the spring holding pin or lug 5 is cut away as at 6, and the outer wall of the box at the side of the slot adjacent the pin or lug 5 is also cut away as at 7, so as to permit the outer end of the spring to pass in approximately a straight line from the inside of the box to the outside, and thus avoid any bends in the spring or sharp angles in the box against which the spring bears.

The spring 4 is of the flat type shown and its outer end passes through the slot 3 and bears against the outer face of the box from the edge of the slot, to the lug or pin 5 which latter passes through a hole in the spring and locks the latter in place. The inner end of the spring is secured by means of a slot in the spring, to receive a pin on the spring arbor or winding stem (not shown) of the time movement. By slotting the flange and the side of the housing as shown, the spring can be inserted, while in its coiled position, into the housing through the open end thereof, the outer end of the spring passing through the slot in the flange, into the slot in the side of the housing.

By this construction of spring box, it will be seen that in winding, or when the spring is under tension, it bears against the outer face of the box and by its frictional contact with said box, takes part of the strain from the end of the spring and also from the pin or lug to which the spring is attached. In the old form in which the attaching pin or lug is inside the box, the winding of the springs tends to pull the latter away from the inner wall of the box or housing, and thus throw the entire strain on the pin. Again with the spring attached to the outer face of the box or housing, I am enabled to use a longer and stronger spring than those now in use, and as the lug is on the outside and accessible, the spring can be applied to and removed from the box without the use of any special tools.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without

departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but,

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

In a spring box for time locks, the combination of a housing closed at one end and open at the other and provided at its open end with an outwardly projecting flange for its attachment to the time movement frame, and with a slot extending through its flange and side wall and terminating adjacent the closed end of the housing, a lug projecting outwardly from the outer face of the wall of the housing, and a spring within the housing, the outer end of said spring passing through the slot in the wall of the housing and secured to said lug.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

CHAS. A. MILLER.

Witnesses:
W. H. TAYLOR,
W. E. WESSON.