J. N. RICE.

DEVICE FOR WINDING CLOCKS.

No. 172,499. Patented Jan. 18, 1876.

Fig. 1.

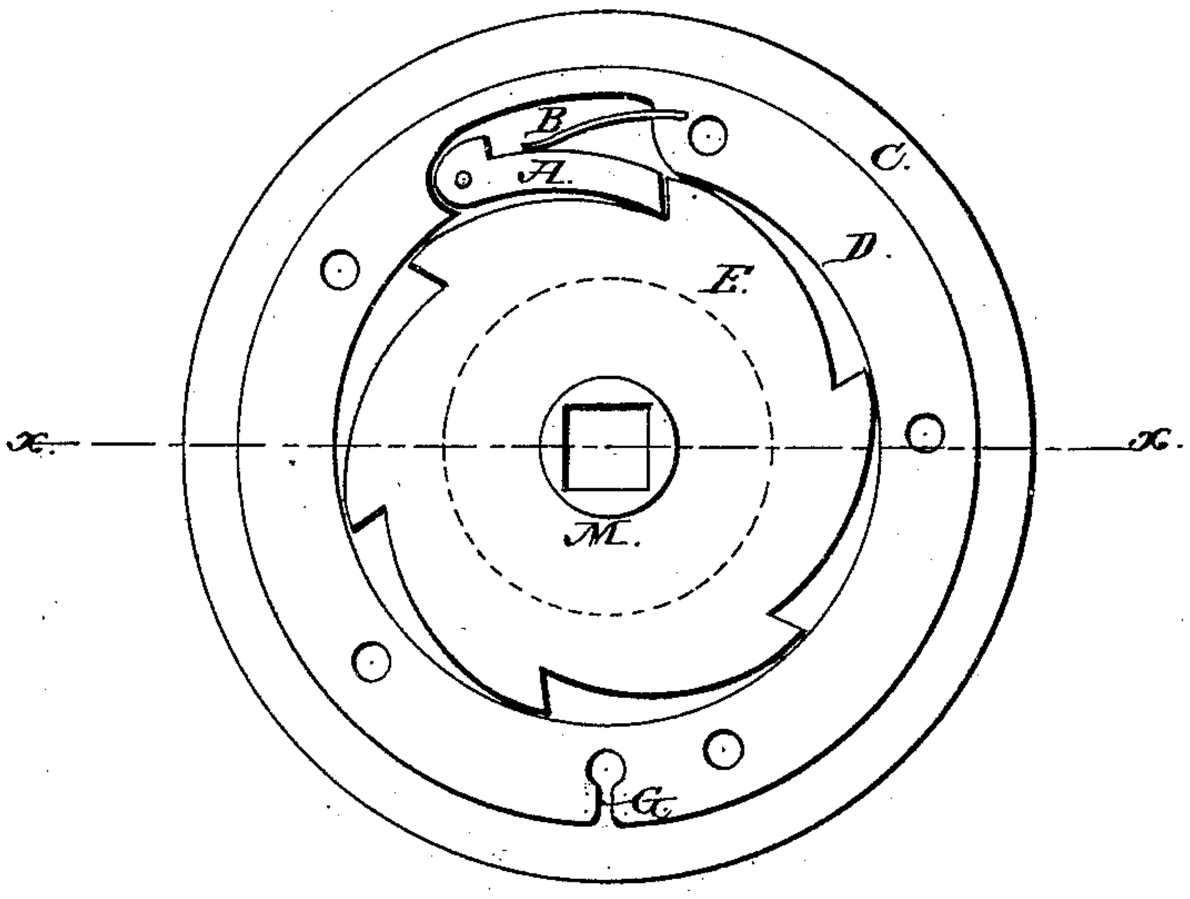


Fig. 2.

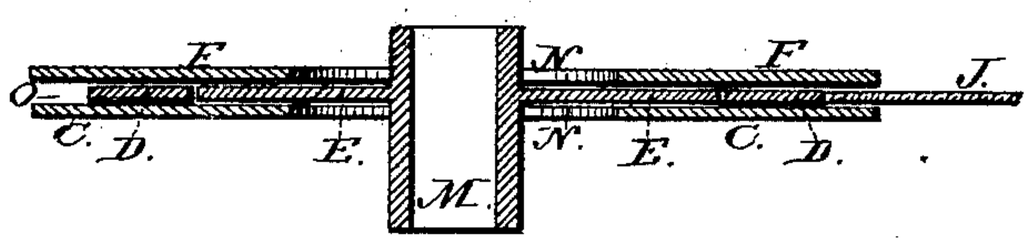
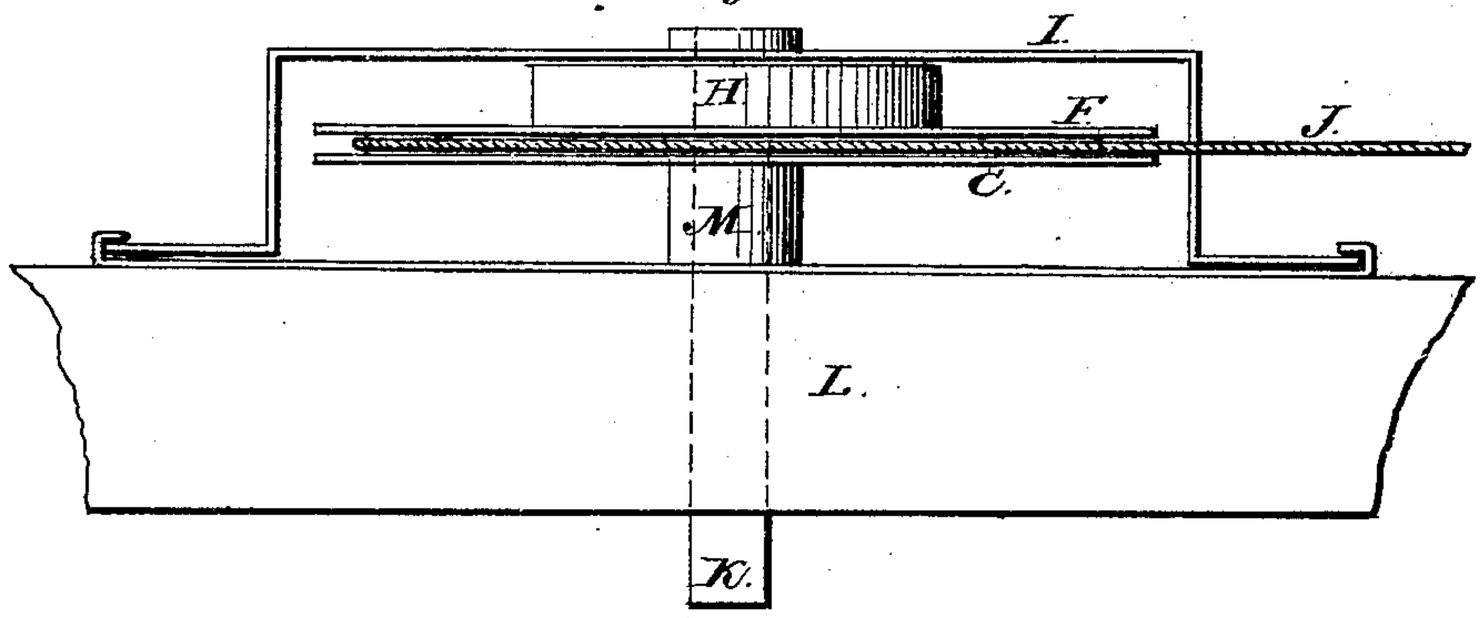


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES N. RICE, OF PITTSTON, PENNSYLVANIA.

IMPROVEMENT IN DEVICES FOR WINDING CLOCKS.

Specification forming part of Letters Patent No. **172,499**, dated January 18, 1876; application filed January 6, 1876.

To all whom it may concern:

Be it known that I, JAMES N. RICE, of Pittston, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Winding Clocks and other Machinery; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates particularly to clocks, but may be applied to other machinery, such as toys, telegraph-machines, or other devices that are run by springs or weights; and the nature of my invention consists in the construction and general arrangement of an attachment for clocks or such other machinery as it may be applied to, for winding up the same with ease and rapidity, and dispensing with the keys generally used for such purposes, as will be hereinafter more fully set forth.

In the annexed drawing, Figure 1 is an interior view of my attachment. Fig. 2 is a longitudinal section of the same through the line *x x*, Fig. 1. Fig. 3 is a side view of my invention complete.

M represents a barrel of suitable dimensions, similar to the barrel of a key for winding clocks, upon which is permanently secured a toothed wheel or ratchet-wheel, E. Around this wheel is placed an annular ring or plate, D, having a suitable recess made in its inner edge to receive a pawl, A, and spring B, acting thereon to engage with the ratchet-wheel. C and F represent circular plates, having central orifices N of larger diameter than the center barrel M, but of smaller diameter than the ratchet-wheel, and said plates are fastened, one on each side of the annular ring D, by bolts, rivets, or any other suitable means, the three plates thus forming a wheel which is free to turn on the ratchet-wheel. Before securing the parts together, as just described, the pawl A and spring B are inserted in the recess in the ring D, and the pawl pivoted to the plates C F, when the same are fastened to the ring. The center apertures N of the plates C and F being of larger diameter than that of the barrel M, it will be seen that said plates have no bearing whatever on the barrel, but turn simply with the annular ring on the ratchet-wheel. These plates are of larger diameter than the ring D, and project beyond the same sufficiently to form, as it were, a groove around the wheel of suitable size to receive three or more coils of a wire-cord, J. The ring D is of the same thickness as the ratchet-wheel and of the cord J, so that the cord will just fill the space between the plates C F, and no two coils of the cord can come alongside of each other, but will fall, one on top of the other. The inner end of this cord J is fastened in a slot, G, in the outer edge of the ring D. Around the front end of the barrel M, next to the plate F, is an ordinary coil-spring, H, the inner end of which is made fast to the surrounding frame I, and the outer end to the plate F. I represents a frame made of two narrow strips of sheet metal suitably bent and fastened together, and having the entire device, constructed as above described, placed between them, the front end of the barrel M, however, being passed into a hole in one side of the frame, so as to properly hold the device in place. This frame I need only be thick enough to simply contain the spring and wheel; or, in other words, one side of the frame lies close to the spring H, and the other side of the frame lies close to the plate C of the wheel; hence the device will take up but very little room.

The main object of this invention is to wind up clocks with ease and rapidity, and the attachment as described is complete in itself, and may be applied to clocks now in use as well as to new ones being made. It is placed on the ordinary winding-arbor between the clock-frame and the dial, and fastened to said clock-frame in any suitable manner. The wire-cord J can then be passed out through an opening in the side or bottom of the clock-case. By pulling out this cord the wheel is rotated, and by means of the ratchet device rotates the barrel M and the winding-arbor on which it is placed. The recoil-spring H at once winds up the cord again, when it may again be pulled out, and so on until the clock is entirely wound up.

In the manufacture of this attachment the plates C F and ring D may be all struck up or stamped out with suitable dies, and the frame I is simply formed, as stated, of two strips of metal—one straight, with its ends turned over to form guides, and the other strip is bent, so that its ends may be slipped under the guides, and the two strips fastened together by the same screws that fasten the frame to the clock. It will be further observed that by the construction of the exterior plates C F they form guides for the ratchet-wheel concealed between them.

This invention may also be used on toys, telegraph-instruments, and other machines that are operated by springs or weights.

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

1. In a winding attachment for clocks and other machinery run by springs or weights, a winding drum or wheel provided with an interior ratchet-wheel, attached to a central spindle, and the drum or wheel having its bearing and turning upon the periphery of the ratchet-wheel, substantially as herein set forth.

2. In a winding attachment for clocks and other machinery, the wheel or winding-drum, constructed of the annular ring D and exterior plates C F, whereby an interior recess is formed to receive the ratchet-wheel, and a circumferential groove to receive the winding-cord, substantially as herein set forth.

3. In combination with the wheel C D F, the interior ratchet-wheel E, pawl A, barrel M, recoil-spring H, and twisted-wire cable J, substantially as and for the purposes herein set forth.

4. As an article of manufacture, an apparatus consisting of a central barrel, a ratchet-wheel and pawl, a winding drum or wheel, a wire-cord, and a recoil-spring, the whole placed in a frame, and forming a complete and independent attachment for clocks and other machinery, for the purpose of winding the same.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

J. N. RICE.

Witnesses:

ABEL BARKER,

C. L. EVERT.