

R. T. ANDREWS.

LOCKWORK ATTACHMENT TO CLOCKS.

No. 171,496.

Patented Dec. 28, 1875.

Fig:1.

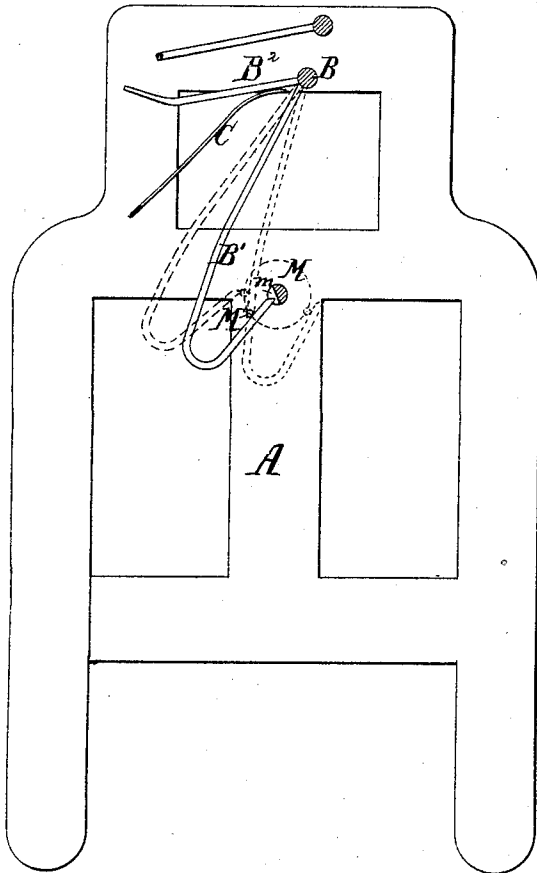
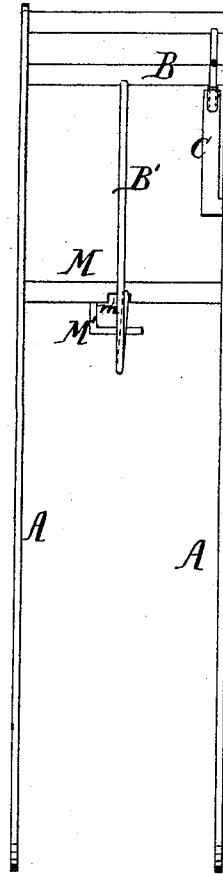
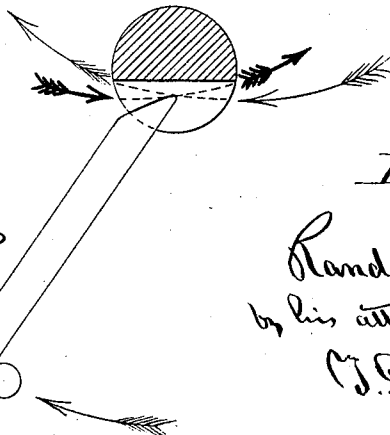


Fig:2.



Digramm.



Witnesses:

Henry Gontner
C. C. Stetson.

Inventor:

Randal T. Andrews
by his attorney
C. C. Stetson.

UNITED STATES PATENT OFFICE

RANDAL T. ANDREWS, OF THOMASTON, CONNECTICUT, ASSIGNOR TO THE
SETH THOMAS CLOCK COMPANY, OF SAME PLACE.

IMPROVEMENT IN LOCK-WORK ATTACHMENTS TO CLOCKS.

Specification forming part of Letters Patent No. **171,496**, dated December 28, 1875; application filed
December 7, 1875.

To all whom it may concern:

Be it known that I, RANDAL T. ANDREWS, of Thomaston, (formerly called Plymouth,) Litchfield county, in the State of Connecticut, have invented certain Improvements Relating to Striking-Clocks, of which the following is a specification:

Many efforts have been made to provide the otherwise ordinary American or Yankee clock with means for allowing the minute-hand to be set backward at any point in its revolution, and to any desired extent, without injury. I provide therefor, by means which are simple and reliable, and which do not require to spring or severely strain any part.

The accompanying figures represent the parts which involve the novelty, with so much of the other parts as is necessary to indicate their relation thereto.

Figure 1 is a cross-section, and Fig. 2 an edge view.

The added diagram on a larger scale shows the motion of the parts in passing each other. The short thick arrows show the motion when the hands are turned backward. The long and narrow arrows show the motion when the parts are moved forward again to attain their original position.

Similar letters of reference indicate like parts in all the figures.

A is the fixed frame-work of brass or other suitable material. B is the rocking-shaft, on which is fixed the lifting-piece B¹ corresponding to the ordinary lifting-piece, and also the lever B², adapted to perform its ordinary function of lifting the counting-pawl, not fully represented, and thereby rocking its shaft and lifting the ordinary stop-pawl, which engages with the ordinary stop-wheel. C is a spring mounted on the fixed frame-work A, and standing in a position to come in contact with the lever or arm B² at the point represented whenever the latter sinks too low. M is the shaft or spindle of the minute-hand. It carries a lifting-hook, N', adapted to perform its ordinary function. All these parts, as also all the other parts not represented, may be of the ordinary construction and arrangement, except in the points now to be described.

One side of the shaft M, toward the lifting-

hook M', is filed or milled away, as indicated at *m*. When for any reason I turn the clock backward at such times and so far as to present the lifting-hook M' on the reverse side of the lifting-piece B¹ in position to press it against the shaft M, the latter permits the hook to move past by gliding through the recess *m*, which is then presented favorably for such motion. Immediately upon its being moved past the shaft the spring C touches the lever B², and commences to resist its further motion. If the turning of the clock backward is carried still further, the lifting-hook M' will disengage from the piece B¹, and the latter will instantly move forward, by the force of the spring C, and assume a position in contact, or nearly in contact, with the spindle M, but on the wrong side thereof. When, by the next forward rotation of the spindle M, the lifting-hook M' comes again in contact with the lifting-piece B¹, the cavity *m* again allows the point of the lifting-piece B¹ to move past with a forward motion, and all the parts are again in their ordinary positions.

The cavity *m* is of no effect in the ordinary working of the clock, except to allow the lifting-piece B¹ and its connections to drop harmlessly a little farther than usual in the ordinary operation of the clock. When the cavity *m* is presented it allows the lifting-piece B¹ and its connections to drop down farther than usual; but it is received and arrested by the lifting-hook M', which takes charge of it, and proceeds to move forward or lift it and initiate the striking again in the ordinary way.

The cavity *m* in the shaft M may be used with some success, without the spring C, by taking care to balance the lifting-piece and its connections, so that the point of the lifting-piece B¹ will always incline to remain near the shaft M. I prefer, however, to allow the weight of the lifting-piece and its connections to bear against the shaft in the ordinary manner, as above provided, and whenever the point has been moved much past the shaft by the turning of the minute-hand backward bring it again to, or near, the shaft M by the force of the spring C. This spring should be so proportioned and adjusted as to be of no effect under ordinary conditions. It should only act on the

arm B² when the lifting-piece B¹ has, by a backward motion of the hands, been carried past the shaft M.

I claim as my invention—

1. The shaft M, formed with a recess, *m*, in combination with the lifting-hook M', and lifting-piece B¹ and its connections, and arranged to serve relatively thereto, as herein specified.

2. The spring C, in combination with the lifting-piece B¹ and its connections, arranged

and operated relatively to the recessed shaft M *m*, and to the lifting-hook M', as and for the purposes herein specified.

In testimony whereof I have hereunto set my hand this 4th day of December, 1875, in the presence of two subscribing witnesses.

RANDAL T. ANDREWS.

Witnesses:

WM. T. WOODRUFF,
A. P. BRADSTREET.