



# UNITED STATES PATENT OFFICE.

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BOSTON CLOCK COMPANY, OF SAME PLACE.

## CLOCK.

SPECIFICATION forming part of Letters Patent No. 343,629, dated June 15, 1886.

Application filed July 11, 1885. Serial No. 171,302. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH H. EASTMAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Clocks, of which the following is a specification.

This invention has for its object to enable the striking-movement of a clock to be readily separated from the time-movement without affecting or making either movement inoperative; and to this end it consists in a clock having a frame composed of two separable sections, the one holding the time-movement and the other the striking-movement, as I will now proceed to describe.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side view of a clock embodying my invention. Fig. 2 represents a back view of the same. Fig. 3 represents a section on line *x x*, Fig. 2. Fig. 4 represents a section on line *y y*, Fig. 1. Fig. 5 represents a section on line *z z*, Fig. 1.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a b* represent the front and back plates of the striking-mechanism frame, which, with the connecting-posts *c c* and the smaller intermediate plate, *d*, and the posts *e e*, connecting the latter to the plate *b*, constitute the supporting-frame of the time-movement *f*. The arbors of the time-train have their bearings in the plates *b d*, while the plate *a* supports the dial-plate *g* and the outer end of the winding post or arbor *h*.

*i j* represent the front and back plates of the striking-mechanism frame, which, with the connecting-posts *k k*, constitute the frame which supports the striking-movement *l* and the rear portion of the winding-arbor *h'*. The striking-movement may be of any suitable kind—that shown in the present instance being the ordinary French movement, having a snail-wheel, *l'*, which is rotated by a connection with the time-movement, and regulates the number of blows given by the hammer at each hourly operation of the striking-movement in a manner well understood.

The entire mechanism of the striking-movement is supported by the plates *i j*, which are permanently connected by the posts *k k*. The

entire mechanism of the time-movement is in like manner supported by the permanently-connected plates *a b d*, so that each movement will remain in operative condition when removed or disconnected from the other.

*m* represents the drum or casing containing the spring which actuates the time-movement, and *n* represents the drum or casing containing the spring which actuates the striking-movement. The time-movement spring is connected at its inner end to a sleeve, which is free to rotate upon the winding-post *h*, and is coiled, so that it will be wound up by a movement opposite to that required to wind the striking-movement spring. The sleeve of the time-movement spring has a ratchet, *o*, and the arbor of the striking-movement spring has a ratchet, *p*, said ratchets being located between the two frames and having their teeth oppositely cut. Between the two ratchets is a plate, *q*, rigidly attached to the winding-post, and having upon one side a spring-dog, *r*, formed to engage with the teeth of the ratchet *o*, and upon the other side an oppositely-arranged dog, *s*, which engages with the teeth of the ratchet *p*. When the winding-post is rotated in the direction indicated by the arrow in Fig. 5, its dog *r* will engage with and rotate the ratchet *o* and wind up the time-movement spring, the dog *s* at the same time slipping on the ratchet *p*. When the winding-post is rotated in the opposite direction, as indicated in Fig. 4, the dog *s* will engage with and rotate the ratchet *p*, and thus wind up the striking-movement spring, the dog *r* slipping meanwhile on the ratchet *o*. Retaining-dogs *u v*, pivoted, respectively, to the plates *b* and *i*, prevent the backward movement of the ratchets. It will be seen, therefore, that the oscillating or rocking movement of the winding-arbor will wind the two springs alternately, both being wound by the one arbor. This method of and means for winding forms no part of the present invention, but is claimed in another application filed by A. Craig and myself. The two frames are detachably connected by posts *w*, connected to the plate *b*, and screws *a'* passing through the plate *i* and entering the posts *w*. The back plate, *j*, of the striking-movement is provided with orifices *b'*, coinciding with the screws *a'*, so that a screw-driver

can be passed through said holes for the purpose of applying or removing said screws, and thus connecting or disconnecting the two frames. When the frames are disconnected by the removal of said screws, they may be readily separated without any derangement of the mechanism of either frame, the winding-arbor *h* and its plate *q* having no positive connection with the arbors *h'* of the striking-movement, so that the two arbors can be readily separated, the pawl *v* preventing said spring from unwinding. The center arbor, *c'*, of the time-movement is connected to the center arbor, *c*, of the striking-movement, which governs the operation of the latter by a coupling or joint, *w*, which enables the two arbors to be separated, said coupling having squared sockets receiving the squared ends of said arbors.

The chief advantage of making the two movements separable in the manner described is that either movement can be taken apart for repairs without disturbing the other movement, so that in case only one movement needs

repairing the labor of taking apart and setting up is materially reduced.

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I claim—

1. The combination, with the frame-pieces *a b d*, containing the time mechanism, of the frame-pieces *i j*, containing the striking mechanism, and the separable screw-connections between said frame-pieces, substantially as and for the purpose described.

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2. The time-movement having the center arbor and the winding-post, combined with the striking-movement having its frame detachably connected to the frame of the time-movement and its center arbor detachably coupled to the center arbor of the time-movement, as set forth.

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In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 23d day of April, 1885.

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JOSEPH H. EASTMAN.

Witnesses:

C. F. BROWN,  
H. BROWN.