

No. 691,887.

Patented Jan. 28, 1902.

G. W. ADAMS.  
CLOCK.

(Application filed June 27, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

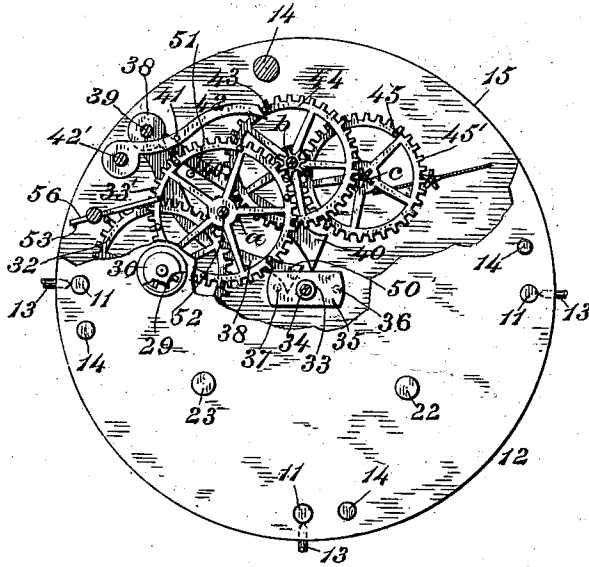


Fig. 2.

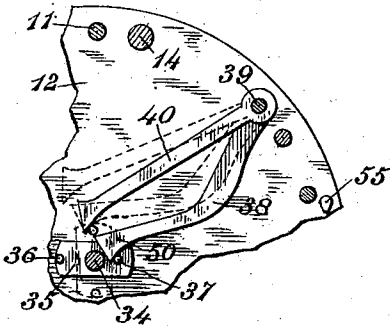
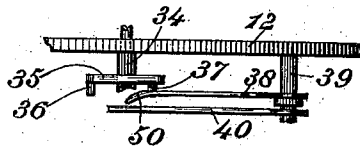


Fig. 3.



WITNESSES

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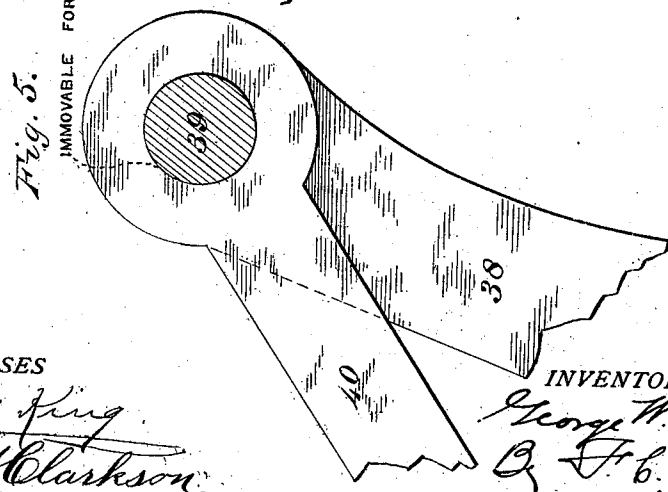
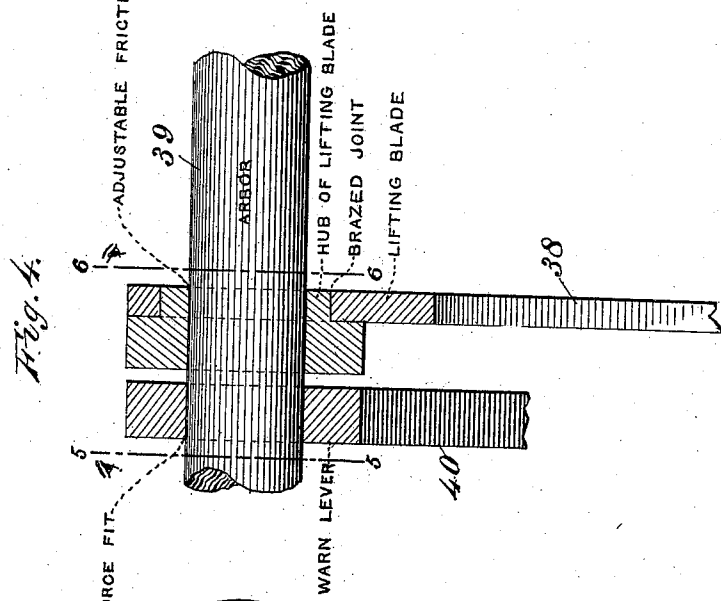
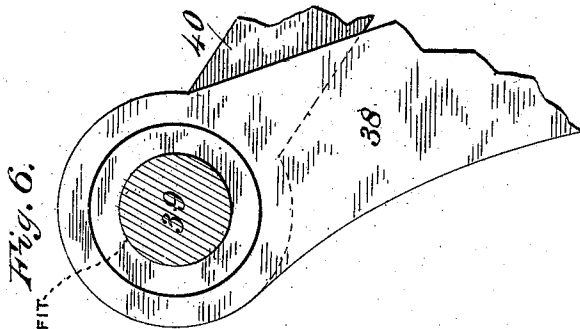
INVENTOR

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(No Model.)

(Application filed June 27, 1901.)

2 Sheets—Sheet 2.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

GEORGE W. ADAMS, OF STOUGHTON, MASSACHUSETTS.

## CLOCK.

SPECIFICATION forming part of Letters Patent No. 691,887, dated January 28, 1902.

Application filed June 27, 1901. Serial No. 66,294. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. ADAMS, a citizen of the United States, residing in Stoughton, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Clocks, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention is principally designed for clocks in which the time and striking mechanisms are bodily separable from each other to facilitate assembling of the parts in the manufacture and the separation thereof for repairs; but it is also applicable to other clocks.

The object of the invention is to provide a striking mechanism which can be readily adjusted after the clock is set up to insure accuracy in the striking of the clock at the proper instant of time.

This invention comprises the combination, in a striking mechanism, of a warn-lever and a lifting-lever therefor, one of said parts being adjustable in relation to the other part.

In the accompanying drawings, Figure 1 represents an elevation of the striking-train of a clock embodying this improvement. Fig. 2 represents an elevation of the warn-lever, its lifting-lever, and the device for actuating the latter. Fig. 3 represents a top view thereof. Fig. 4 represents an enlarged elevation of the arbor for the warn and lifting levers and sections of the hubs of said levers on the arbor. Fig. 5 represents a transverse section of said arbor, taken in front of its warn-lever, and fragments of said levers thereon. Fig. 6 represents a transverse section of said arbor, taken in front of the lifting-lever, and fragments of said levers thereon.

The same reference characters indicate the same parts in all the figures.

This improvement may be embodied in a clock having a striking mechanism of any ordinary general construction. The striking-train herein shown comprises an intermediate pinion 29, which is engaged and driven by the great wheel of the striking-motor, a first wheel 32 on the arbor of said pinion, a pinion *a* on the arbor 52 and engaged by said first wheel, a second wheel 33', also on the arbor 52, a pinion *b*, engaged by the second wheel, a third wheel 44 on the arbor of the

pinion *b*, a pinion *c*, engaged by the third wheel, and a fourth or warn wheel 45' on the arbor of the pinion *c*. The third wheel 44 has a stop-pin 43, and the warn-wheel 45' has a stop-pin 45. A locking-lever 42, provided with a pin 41, is pivoted at its outer end on the arbor 42', and its free end is adapted to engage the stop-pin 43 on the third wheel 44.

A warn-lever 40 on the arbor 39 is adapted to engage by its shank the pin 41 on the locking-lever 42 for lifting the latter out of engagement with the pin 43 on the wheel 44, and when the warn-lever is lifted its outer end is in position to be engaged by the stop-pin 45 on the warn-wheel 45'. A lifting-blade 38 on the arbor 39 of the warn-lever extends toward the center arbor 34 and is lifted by an actuating device thereon.

The center arbor 34 may constitute a detachable extension of a corresponding center arbor of the time mechanism in cases where the time and striking mechanisms are separable, as heretofore indicated. This center arbor, whether or not composed of separable sections, is driven by the driving-spring of the time mechanism in the ordinary manner.

The device on the center arbor for actuating the lifting-lever when constructed as herein shown comprises a lifting-block 35, having hour and half-hour lifting-pins 36 and 37, which engage the inner end of the lifting-blade 38.

In this improvement the warn-lever consists of a rigid bar provided with a hub of appreciable thickness on the arbor 39. This construction avoids lateral vibration of the warn-lever, which might interfere with the third wheel or the warn-wheel. The lifting-blade 38 is composed of thin sheet-steel, united by brazing or otherwise to a composition hub of considerable thickness. The outer end of this blade is bent at one corner, forming a curved lip 50, which is engaged by the pins 36 and 37 when the hands of the clock are turned backward. When the hands are turned forward, these pins engage the lower edge of the blade and cause it to lift the warn-lever.

The lifting-blade is located apart from the fast-moving wheels and, in fact, can touch only the lifting-pins, if set correctly, or the warn-lever, if improperly adjusted, and in the

latter instance the error would be observable to the clockmaker before putting the mechanism in the case. The blade thus occupies little space in the line of the arbors and is only slightly moved out of its plane by the pins, and being light and long it does not jar the continuous parts by its slight vibrations. Excessive motion of the warn-lever is prevented in one direction by the pin 51 in the rear plate and in the other by the lifting-blade striking the arbor 52 of the second wheel, which is stiff and under sufficient pressure from the motor not to be injuriously affected.

The hub of the warn-lever 40 is fast on the arbor by a forcing fit, which prevents motion about the arbor, and the lifting-blade 38 is adjustable on the same arbor by a friction fit which is sufficiently tight to prevent accidental turning of the blade on the arbor and to cause the arbor to turn on its bearings. The warn-lever may have the friction fit and the lifting-blade the force fit, or the arbor may be integral with one of these parts. Owing to this adjustable connection between the warn-lever and the lifting-blade the warn-lever

may be adjusted after the parts of the clock are assembled, so as to control the striking-train with the least motion and so as to insure the accurate striking of the clock.

I claim as my invention—

1. In a clock, the combination of a striking mechanism and means for controlling said mechanism, comprising a warn-lever arbor a warn-lever thereon and a lifting-lever also on said warn-lever arbor, one of said levers being fast on said arbor and the other being frictionally connected therewith.

2. In a clock, the combination of a striking mechanism and means for controlling said mechanism, comprising a warn-lever arbor a warn-lever fixed to said arbor for engaging the striking mechanism and a lifting-lever frictionally connected with said arbor.

In testimony whereof I have hereunto subscribed my name this 20th day of June, A. D. 1901.

GEORGE W. ADAMS.

Witnesses:

GEORGE CLARENDON HODGES,  
E. T. DENHAM.