H. D. NORTHROP.
Clock-Striking Movement.

No. 200,564. Patented Feb. 19, 1878.

fig. 1.

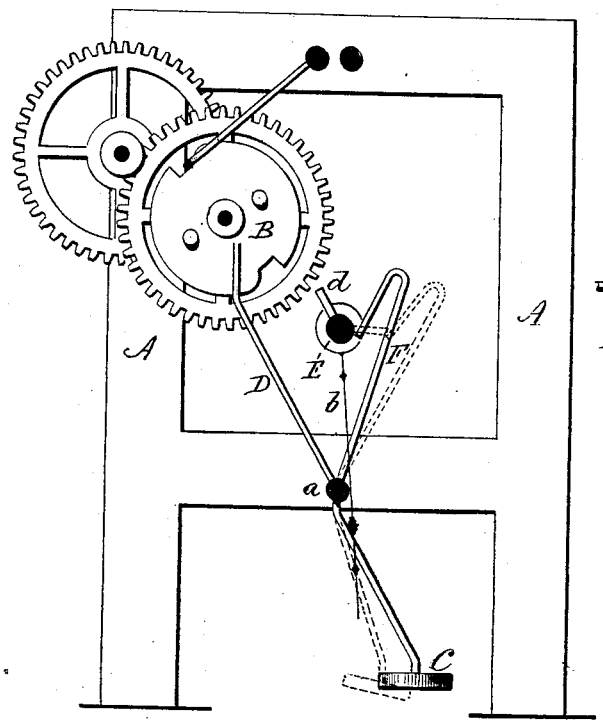
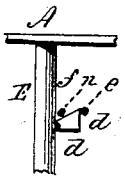


fig. 2



Witnesses:

J. A. Chumrau

Ed Nelson

Hiram D. Northrop
Inventor

By Attys

Thos. Earle

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HIRAM D. NORTHROP, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE WATERBURY CLOCK COMPANY, OF SAME PLACE.

IMPROVEMENT IN CLOCK STRIKING-MOVEMENTS.

Specification forming part of Letters Patent No. **200,564**, dated February 19, 1878; application filed January 3, 1878.

To all whom it may concern:

Be it known that I, HIRAM D. NORTHROP, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Clock-Movements; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, sectional front view; Fig. 2, the minute-pointer shaft detached.

This invention relates to an improvement in that class of clock-movements in which are combined both time and striking parts, the object being a simple device whereby the half-hour may be struck without the assistance of the machinery of the striking part; and it consists in providing the hammer with a second arm, and combining therewith a cam on the minute-pointer shaft, so that at the half-hour, or other predetermined time, the said cam will have raised the hammer so as to allow it to escape at such predetermined time, as more fully hereinafter described.

A is the rear part of the frame of an ordinary clock-movement, the front part removed for convenience of illustration. B is the usual strike wheel or cam, which actuates the hammer C, the hammer being hung on a pivot, *a*, with an arm, D, extending up to the strike-wheel B, so that when the strike-wheel B revolves the hammer will be actuated in the usual manner; E, the pointer-shaft, which is arranged to revolve once in each hour, and carries the minute-pointer *b*, in the usual manner. On this shaft E a cam, *d*, is placed, and from the hammer-shaft a second arm, F, extends up to the right of the shaft E, so that the cam *d* will strike the said arm as the shaft revolves, and force the arm F away from the shaft and turn the hammer accordingly, as indicated in broken lines, until the cam has so far turned that the arm F will escape from it. This escapement is certain, and occurs at the time when the pointer reaches the half-hour, so that at that instant the hammer will strike one blow without the aid of the striking mechanism of the clock.

In Fig. 2 *e* represents the lever as at the point of escaping.

In order to prevent the cam striking the lever F when the pointers are turned backward, the side of the cam is beveled or cut back, as seen in Fig. 2, so that when the lever F lies against or near the shaft, as indicated at *n* of Fig. 2, a reverse or backward movement of the pointers will bring the inclined side *f* of the cam against the arm F, and that arm, being elastic, will be forced back or away from the side of the cam, so that the cam may pass without interference.

I claim—

In combination with the time and striking parts of a clock-movement, the second arm F from the hammer, and cam *d* on the minute-pointer shaft, substantially as and for the purpose described.

HIRAM D. NORTHROP.

Witnesses:

T. R. TAYLOR,

H. L. WADE.