W. LINDON.

Striking Mechanism for Clocks.

No. 212,240. Patented Feb. 11, 1879.

Fig. 1

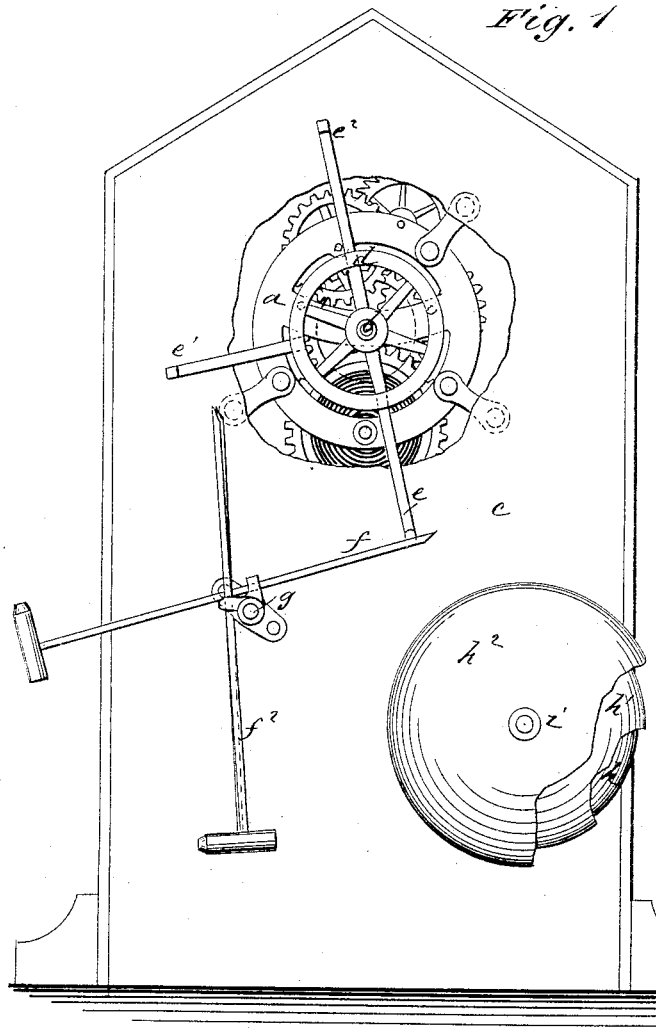


Fig. 2

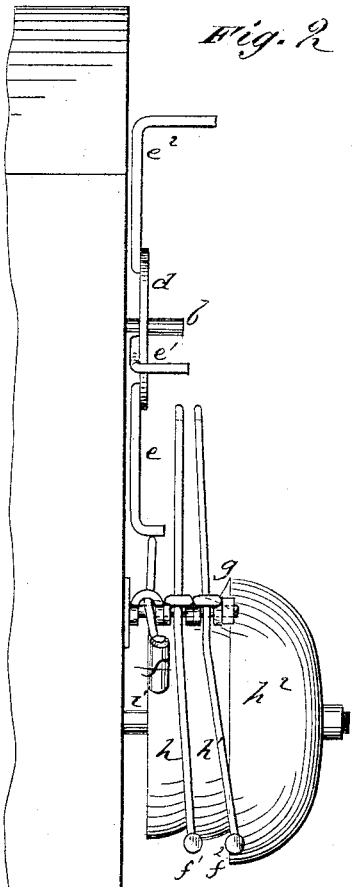
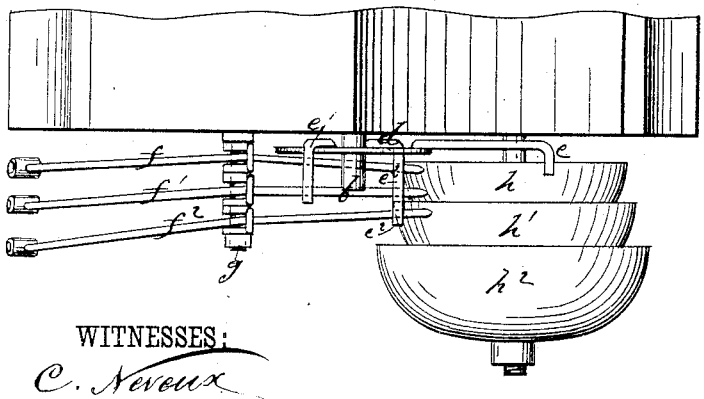


Fig. 3



WITNESSES:

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WILLIAM LINDON, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN STRIKING MECHANISMS FOR CLOCKS.

Specification forming part of Letters Patent No. **212,240**, dated February 11, 1879; application filed November 19, 1878.

To all whom it may concern:

Be it known that I, WILLIAM LINDON, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Clocks, of which the following is a specification:

This invention relates to an improvement in the time-movement, whereby the quarter-hours are struck or chimed, and the striking mechanism operated by the power which operates the time-movement.

The devices for moving the bell-hammer are attached to the arbor of the minute hand, and operate at every quarter-revolution of the same. For a single stroke at every quarter a single bell and hammer could be used; but for chiming there are three or more hammers, with a corresponding number of bells, that are struck singly or successively at each quarter-revolution of the shaft.

In the accompanying drawings, Figure 1 is an elevation, showing my improved mechanism applied at the back of a clock. Fig. 2 is a side elevation of the same. Fig. 3 is a top view.

Similar letters of reference indicate corresponding parts.

a is the rear plate of a clock-movement of common construction, the arbor *b* of which is extended at the back beyond the clock-case *c*. This arbor *b* carries the minute-hand and revolves once an hour. Upon the extension of arbor *b* is fitted a wheel or hub, *d*, provided with three radial arms, $e\ e^1\ e^2$, the outer ends of which are bent at right angles.

$f\ f^1\ f^2$ are hammers, hung upon a gudgeon or arm, *g*, that is attached to clock-case *c*. The hammers are fitted to swing freely upon arm *g* independently of each other, and hang by their own weight, so that the hammer-tails are in the path of the bent ends of arms $e\ e^1\ e^2$, as the hub *d* turns with arbor *b*.

$h\ h^1\ h^2$ are bells fitted upon a stud, *i*, attached to case *c*, in such position that each bell will be struck by its respective hammer when they are moved by the arms $e\ e^1\ e^2$, as hereinafter described.

The hub *d* is fitted on arbor *b*, so that it may be adjusted with reference to the minute-hand of the clock to cause the arms to operate at the quarter-hours. As each arm *e*, e^1, or e^2 comes around it takes against the hammer-tails, and by its continued movement raises the hammer, as shown in connection with one in Fig. 1, finally clearing the end and permitting the hammer to fall and strike its bell.

The bent ends of the arms $e\ e^1\ e^2$ are of different lengths, as illustrated in Fig. 2, so that the first arm, *e*, acts only upon one hammer; the next arm, e^1, having a longer projection, will operate two hammers, while e^2 will raise all the hammers and cause all three bells to be struck. In case there is a fourth arm and bell, the same principle will be extended for its operation; but with a striking-clock having independent spring and striking mechanism the fourth-quarter bell is not essential.

To cause the bells to be struck in succession or chimed, when two or three hammers are raised at once, I make a slight variation in the length of the hammer-tails, the shorter one being thereby freed a moment in advance of the other one. The same effect will be produced by having the bent ends of the arms e^1 e^2 inclined. The fulcrum of the hammers should be placed far enough at one side to permit of the arms $e\ e^1\ e^2$ being turned back past the quarters.

It is evident that the mechanism shown may be arranged somewhat differently for producing the same effects. A slight addition or modification of any clock-movement will adapt it for the application of my improvements. The chiming mechanism is operated by the driving-spring of the time-movement, and consequently requires no separate winding or attention, but is operative as long as the clock goes.

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

1. In a clock-movement, the combination and arrangement, substantially as described and shown, of the hammers $f\ f^1\ f^2$, wheel *d*, having radial arms $e\ e^1\ e^2$, and a bell that is struck by the hammers, for the purposes set forth.

2. In a clock-movement, the bells $h\ h^1\ h^2$ and their respective hammers $f\ f^1\ f^2$, in combination with the wheel *d*, fitted upon the arbor of the minute-hand and provided with radial arms $c\ e^1\ e^2$, substantially as and for the purposes set forth.

WILLIAM LINDON.

Witnesses:

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