H. LORIOT.

Alarm-Clock.

No. 220,540. Patented Oct. 14, 1879.

Fig. 1.

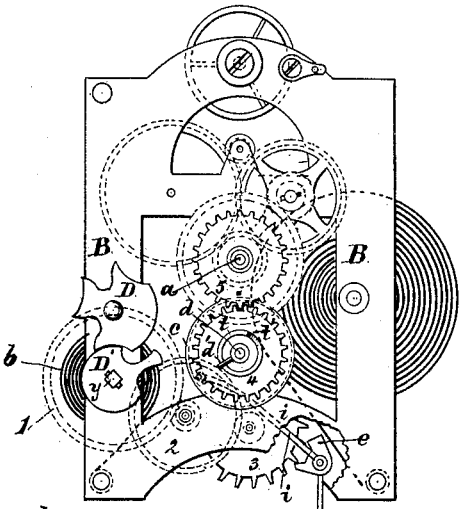


Fig. 3.

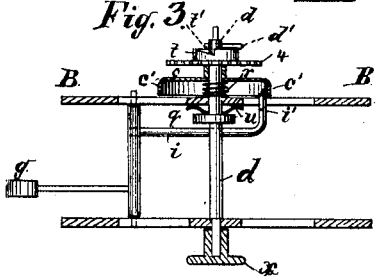
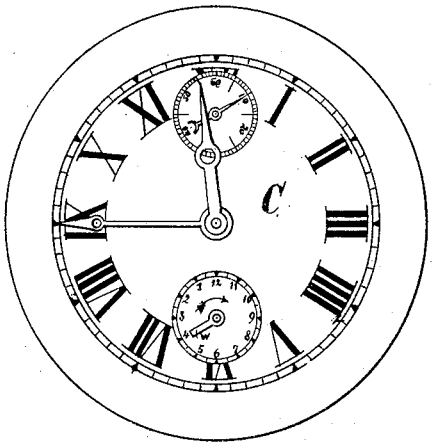


Fig. 2.



Witnesses:

Henry Eichling

B. E. Clark

Inventor.

Henry Loriot

By F. F. Fitch

his Atty

UNITED STATES PATENT OFFICE.

HENRY LORIOT, OF NEW YORK, N. Y., ASSIGNOR TO CHARLES OSTROM, OF NEWARK, N. J.

IMPROVEMENT IN ALARM-CLOCKS.

Specification forming part of Letters Patent No. **220,540**, dated October 14, 1879; application filed June 16, 1879.

To all whom it may concern:

Be it known that I, HENRY LORIOT, of city and State of New York, have invented a new and useful Improvement in Alarm-Clocks, of which the following is a specification, reference being had to the accompanying drawings, forming part of the same.

Figure 1 is a front elevation of a clock and alarm movement containing my invention. Fig. 2 represents a face or dial adapted to such movement; and Fig. 3 is a view, partly in section, of a detached part of the alarm mechanism, the construction and office of which are particularly described below.

My invention relates to a clock-movement with which is connected an alarm mechanism designed to be brought into action by the clock-movement to strike an alarm on a bell at any desired hour or minute, and consists in the devices and combination of devices hereinafter described and claimed.

The clock-movement represented in Fig. 1 is the usual time mechanism, consisting of a train of wheels driven by the recoil of a spring and controlled by an escapement, and need not be particularly described.

The central arbor, *a*, carries the hour-hand, and of course makes a revolution once in twelve hours.

The alarm-movement connected with the clock consists of the train of wheels 1, 2, and 3 and pinions 4 and 5, driven by an independent spring, *b*. These are so connected and arranged that, when free to move, a rapid motion is given to the ratchet-wheel 3, whereby a correspondingly rapid vibration is given to the pallet *e*, to which is connected an arm, *f*, carrying the hammer-head *g*, for striking alarms on a bell, *h*.

d is an independent arbor, on which are the spur-wheel 4, the disk *c*, having a flange, *c'*, around its periphery, projecting inward, the collar *q*, and the small spiral spring *r*. The wheel 4 and disk *c* are loose on the said arbor outside of and in front of the frame B, and the collar *q* is in the rear of the front part of said frame. The said wheel 4 gears into and is driven by the spur-wheel 5 on the arbor *a* of the hour-hand. On the outer face of the said wheel 4 is an annular flange, *t*, in which is a notch, *t'*, cut away so as to form an incline on one side, as shown, thus constituting it, in effect, a cam. Fixed in the arbor *d* is a pin or short arm, *d'*, against which the said cam impinges when the wheel 4 and the disk *c'* are forced outward on the arbor *d* by the spring *r*.

i is an arm fixed in the pallet *e*, which extends upward behind the disk *c*. The upper end of this arm is bent outward, forming a hook, *i'*, and so arranged that when the disk *c* is forced back toward the collar *q* the flange *c'* on the said disk will cross the track of said hook *i'*, thus preventing the arm *i* from vibrating, and holding the alarm-movement at rest. The arrangement of the cam *t* and pin *d'* is such that when the said pin is in the notch *t'* the wheel 4, and with it the disk *c*, will be forced outward so far that the flange *c'* is disengaged from the hook *i'*, leaving the arm *i* free to vibrate, thus liberating and setting in motion the alarm-movement; but when said pin *d'* is impinging against any other part of said cam *t* than in said notch *t'* the flange *c'* will be thereby thrown into engagement with said hook *i'*.

u is a friction-spring on the arbor *d*, to prevent the latter being rotated by the action of the cam *t* on the pin *d'*, but permitting the said arbor to be rotated by hand at pleasure to set the said pin in any desired position.

Now, it is evident that the said alarm will be let off whenever the pin *d'* drops into the notch *t'*, and that thus to let it off at any given hour or minute it is only necessary to turn the arbor *d* and set the pin *d'* so that it will drop into the notch at that hour or minute.

The arbor *d* may project beyond the frame at the rear of the movement, and be provided with a finger-piece or head, *x*, as shown, so that the alarm may be set without opening the case.

w, Fig. 2, is a hand or pointer fixed on the end of the arbor *d*, outside of the clock-dial C, immediately over the pin *d'*, by which the alarm is to be set.

D and D' are well-known stop devices, by

which the rotation of the arbor *y* of the wheel 1 is limited.

As is apparent, the alarm-movement is independent of the clock-movement, being driven by a separate motor-spring, the clock-movement acting only to let it off, which it does directly from the arbor of the hour-hand. Thus the freedom of the clock-movement is not interfered with, nor its accuracy made liable to be disturbed by the alarm.

I have represented a train of three wheels in the alarm-movement; but a greater or less number may be employed, as the maker may choose; and, if desired, for convenience or other reason, a wheel or wheels may be interposed between the spur-wheels 4 and 5.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a clock-movement and independent alarm-movement, as described, of the flanged disk *c*, hooked arm *i*, cam *t*, and pin *d'*, constructed and arranged to operate substantially as and for the purpose specified.

2. The combination, with the clock and alarm movements described, of the spur-wheels 4 and 5, the disk *c*, provided with the flange *c'*, the hooked arm *i*, pin *d'*, and spring *r*, all as and for the purpose described.

3. The combination of the arbor *d*, wheel 4, provided with the notched flange *t*, the disk *c*, provided with the flange *c'*, the pin *d'*, the spring *r*, and the hooked arm *i*, substantially as for the purpose described.

HENRY LORIOT.

Witnesses:
B. S. CLARK,
M. F. CLIFTON.