G. H. BLAKESLEY.

Clock-Striking Mechanism.

No. 162,018. Patented April 13, 1875.

Fig 1.

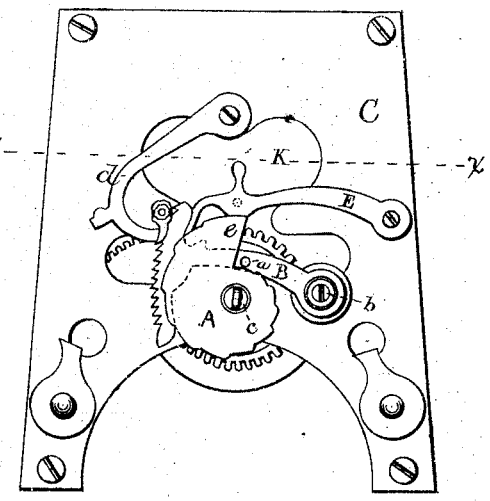


Fig 2.

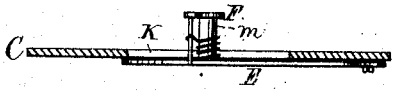
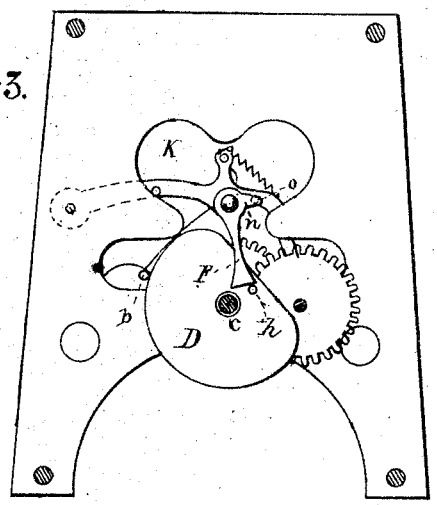


Fig 3.



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UNITED STATES PATENT OFFICE.

GILBERT H. BLAKESLEY, OF BRISTOL, CONNECTICUT.

IMPROVEMENT IN CLOCK-STRIKING MECHANISMS.

Specification forming part of Letters Patent No. **162,018**, dated April 13, 1875; application filed May 28, 1874.

To all whom it may concern:

Be it known that I, GILBERT H. BLAKESLEY, of Bristol, county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Striking Mechanism for Clocks, of which the following is a specification:

My invention consists in certain combinations and arrangements of devices and appliances, as hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a front elevation of parts of a clock mechanism which embodies my invention. Fig. 2 is a sectional view of parts of the same, taken on the line *x x* of Fig. 1; and Fig. 3 is a vertical section of the front portion of a partial clock mechanism, showing the rear of parts shown in Fig. 1.

This improvement is designed to be applied to that class of clock-striking mechanisms known as "rack and snail strikes," the same being old, whereby it is deemed necessary to represent only such parts of the clock-striking mechanism as are new with the applicant, and those acting in immediate connection therewith, as the remaining parts may be of any ordinary construction.

The first part of the invention relates to the peculiar manner of making the long step in the snail clear the stop-pin which regulates the dropping of the rack.

A designates the snail, rigidly secured by a set-screw, or other device, to the socket which carries the hour-hand. In Fig. 1 it is shown in the position it assumes when the clock is about to strike twelve. In the rack B is a fixed pin, *a*, termed the stop-pin. As the parts allow the rack to fall, this stop-pin *a* stops the rack B by contact with one of the various steps upon the snail A, which steps regulate the distance that the rack B falls, and thereby the number of blows the clock will strike, substantially as in other rack and snail strikes. Upon the rack B, and near its fulcrum or pivot, is a cam-pin, *b*, which extends inward through an opening in the front plate C. Upon the center shaft *c* (which carries the minute-hand, and revolves within the socket which carries the hour-hand, as in ordinary time-pieces) is a cam, D, rigidly secured thereto, whereby it revolves twelve times to every revolution of the snail A, and in case the rack, from any cause, is not thrown up at the proper time for striking, this cam will engage with the cam-pin *b*, and throw up the rack into its proper position, when the catch *d* will engage with the teeth of the rack, and retain it in its place. In case the strike-side of the clock is run down, and the rack is dropped, as the hour approaches, the rack, without this cam D and pin *b*, would not regain its elevated position, and as the long step *e* in the snail A approached the stop-pin *a*, either by the running of the time-side or by turning the hands, the clock is brought to a stand-still, or broken. Various devices and arrangements have been employed to avoid this result, most of which cause the stop-pin *a* to spring back and pass under the snail A, but this impairs the working of the counting arrangements, and makes them uncertain. In my device the cam-pin and cam lift the stop-pin wholly out of the way of the snail once each hour, so that, whether the strike-side is operated regularly or not, the turning forward of the clock-hands, or allowing it to run, will in no case bring the snail and stop-pin together in such manner as to interfere with the running of the clock.

The second part of my invention relates to the peculiar arrangement and construction of the lift-lever, whereby I am enabled to place the dial-wheels between the plates, instead of in front of the front plate, and thereby I make more room for the working of the other parts upon the front of the front plate C.

E designates the lift lever pivoted to the front of the plate C, and with one end in the rear of the rack A, and under the end of the catch *d*, so that on raising the lift-lever E its end will engage with the catch *d*, and release it from the teeth of the rack A, substantially as in the ordinary rack and snail strike. The dial-wheels are placed between the cam D and front plate C, and secured to the rear of the cam D is the lift-pin *h*, Fig. 3. An opening, *k*, is made in the front plate C, and upon the rear of the lift-lever E, (see Fig. 2,) is a dog, F, pivoted thereon by a screw, which passes through a hollow shaft, *m*. The hollow shaft *m*, which connects the dog F and lift-lever E,

works within the opening *k* of the front plate C, and is of such length that the dog reaches the rear of the cam D.

In Fig. 3 a short arm, *n*, of the dog F is shown, which arm has a stop-pin, *o*, resting on the lever E, so that the said dog can turn only a given distance in one direction, but is free to turn so far as may be desired in the opposite direction, and it is held with the stop-pin *o* resting upon the lever E by means of a small spring. (Not shown.) When the wheels or the center shaft move forward the lift-pin *h* strikes against the end of the dog F, and as the dog cannot move farther upon its joint in that direction, the dog F, lever E, and catch *d* are thereby raised, and the rack A dropped ready for the operation of striking, as in ordinary rack and snail mechanisms. If the center shaft is moved backward the dog yields, and allows the lift-pin to pass the dog without lifting the lever E and catch *d*.

I am aware that a yielding dog, whereby the clock-pointers may be turned backward, is not new, but so far as I know they have been placed upon the front of the front plate C, whereby the parts are so crowded together as to seriously interfere with the proper working of the parts.

I claim as my invention—

1. In a rack and snail striking mechanism, the combination of the snail A, stop-pin *a*, rack B, cam-pin *b*, and cam D, all operating together substantially as described, and for the purpose set forth.

2. The combination of lift-lever E, hollow shaft *m*, dog F, and lift-pin *h*, the lever E being arranged upon the front or exterior of a front plate, C, provided with opening *k*, the dog F and lift-pin *h* being upon the inside or interior of said plate, the dial-wheels being thereby removed from out of the way of the rack and snail, substantially as described.

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