R. SAYER.

CLOCK-ALARMS.

No. 190,518. Patented May 8, 1877.

Fig: 1

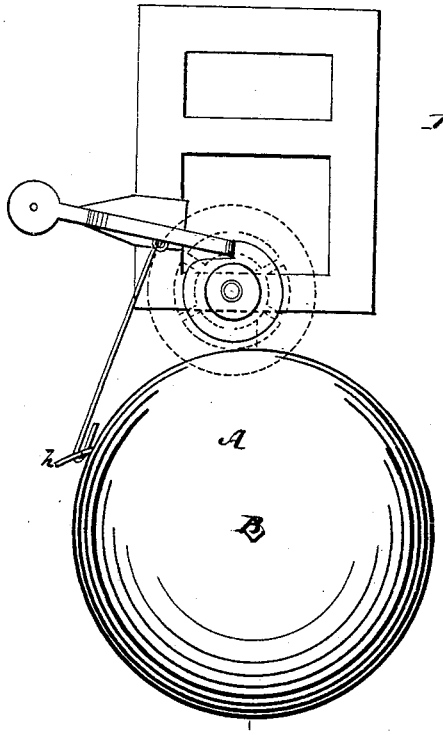


Fig: 2

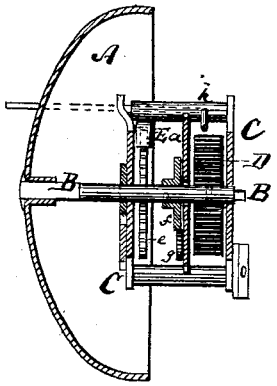
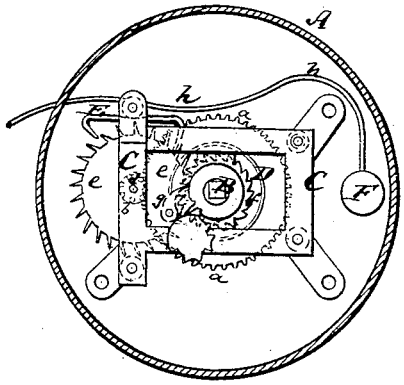


Fig: 3



Witnesses:
John C. Tunbridge
D. V. Briesen

Inventor:
Rudolph Sayer
by his attorney
A. V. Briesen

UNITED STATES PATENT OFFICE.

RUDOLF SAYER, OF NEW YORK, N. Y.

IMPROVEMENT IN CLOCK-ALARMS.

Specification forming part of Letters Patent No. **190,518**, dated May 8, 1877; application filed April 5, 1877.

To all whom it may concern:

Be it known that I, RUDOLF SAYER, of New York city, in the county and State of New York, have invented a new and Improved Clock-Alarm, of which the following is a specification:

Figure 1 represents an outer face view of my improved clock-alarm. Fig. 2 is a vertical cross-section of the same; Fig. 3, an outer face view of same, showing the gong partly cut away.

Similar letters of reference indicate corresponding parts in all the figures.

This invention has for its object to produce an alarm attachment for all kinds of time-pieces, clocks, and for other analogous purposes, which attachment shall be very compact and convenient of application; and the invention consists, first, in placing the entire alarm mechanism within the gong, so that said gong shall embrace and protect the spring, the escapement, and the toothed wheels of the mechanism; and it consists, secondly, in placing the gong upon the spring-arbor of the alarm attachment; and, thirdly, in so affixing the gong to such arbor that the attachment may be wound up by merely turning the gong.

In the drawing, the letter A represents the gong of the alarm. This gong is mounted upon a shaft or arbor, B, which has its bearings in a small frame, C. The frame C is of such size that it is covered by the gong, as shown in Fig. 3.

For use this frame is to be attached to the frame or casing of a clock, or to any other suitable support.

D is the coiled spring for operating the alarm. One end of this spring is fast to the shaft B, the other to the frame C.

By turning the shaft B the spring is wound up. Now, I propose to rigidly fasten the gong to the shaft B, so that by revolving such gong the shaft will be properly turned, and I thereby dispense with the necessity of using a separate winding-key; but, if desired, a key may be applied to the free end of the arbor for winding purposes; or the arbor may be extended beyond the gong to admit the application of a key at that end, which connects with said gong. Upon the arbor B is also hung a toothed wheel, *a*, which turns loose thereon and gears into a pinion, *b*, which is mounted upon another arbor, *d*, that has its bearings in the frame C. Upon the arbor *d* is also mounted an escapement-wheel, *e*, whose teeth engage the flukes of an escapement-anchor, E, that is also hung in the frame C, all as shown in Fig. 3.

A ratchet-wheel, *f*, is rigidly secured upon the arbor B, and receives a click or pawl, *g*, that hangs on the toothed wheel *a*, so that by revolving the arbor B in one direction, in winding up the spring, the click will slip on the revolving ratchet-wheel, and leave the toothed wheel *a* and the arbor *d* and anchor unmoved; but, when the spring unwinds, the consequent rotation of the shaft, in opposite direction, causes the pawl *g* to rotate the wheel *a*, and with it the pinion *b*, arbor *d*, wheel *e*, and vibrate the anchor E. This anchor connects with the wire or shank *h* of the clapper F and vibrates the latter.

It will be seen, particularly by reference to Fig. 3, that the gong shields and protects the entire mechanism that moves the clapper, and that the said mechanism will, therefore, be guarded against injury from contact with foreign substances, and kept free from dust.

Moreover, the device is exceedingly compact, convenient for transportation, and for application to a suitable support. The gong, when rigidly fastened to the arbor B in manner stated, will rotate with said arbor whenever the alarm operates, and will therefore constantly present a new surface to the action of the clapper. This preserves the gong, as it is not always struck at the same point, and the sound is also maintained purer than when the vibrations are invariably started from the same part. The means of starting the alarm into action, after it has been wound up, is not part of this invention, as any device which will impart one vibration to the anchor will answer the purpose. In Fig. 1 of the drawing I have shown the wire *h* properly connected with a lever, as usually employed on alarm attachments to time-pieces.

I claim as my invention—

1. An alarm apparatus composed of the frame C, arbors B *d*, wheels *a b e*, anchor E, spring D, and clapper-wire *h*, all combined

with the gong A, and embraced by said gong to be protected and covered by the same, substantially as herein shown and described.

2. The gong A, placed upon the arbor B of a clock-alarm, which arbor connects with the winding-spring, substantially as herein shown and described.

3. The rotary gong A firmly mounted upon the spring-arbor B of an alarm mechanism, so that the gong is revolved in winding and unwinding the spring, substantially as specified.

RUDOLF SAYER.

Witnesses:
ERNEST C. WEBB,
JAMES TURK.