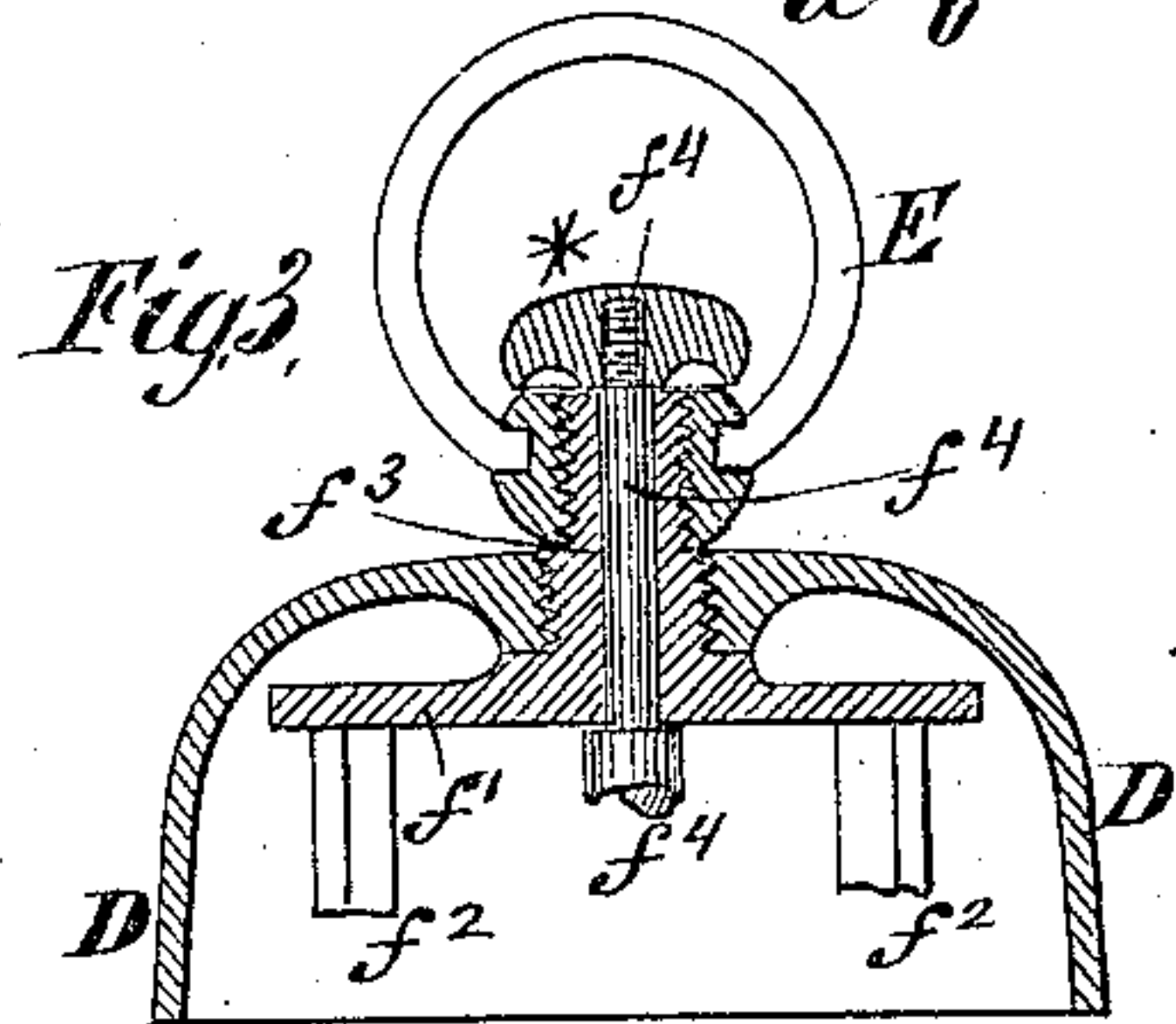
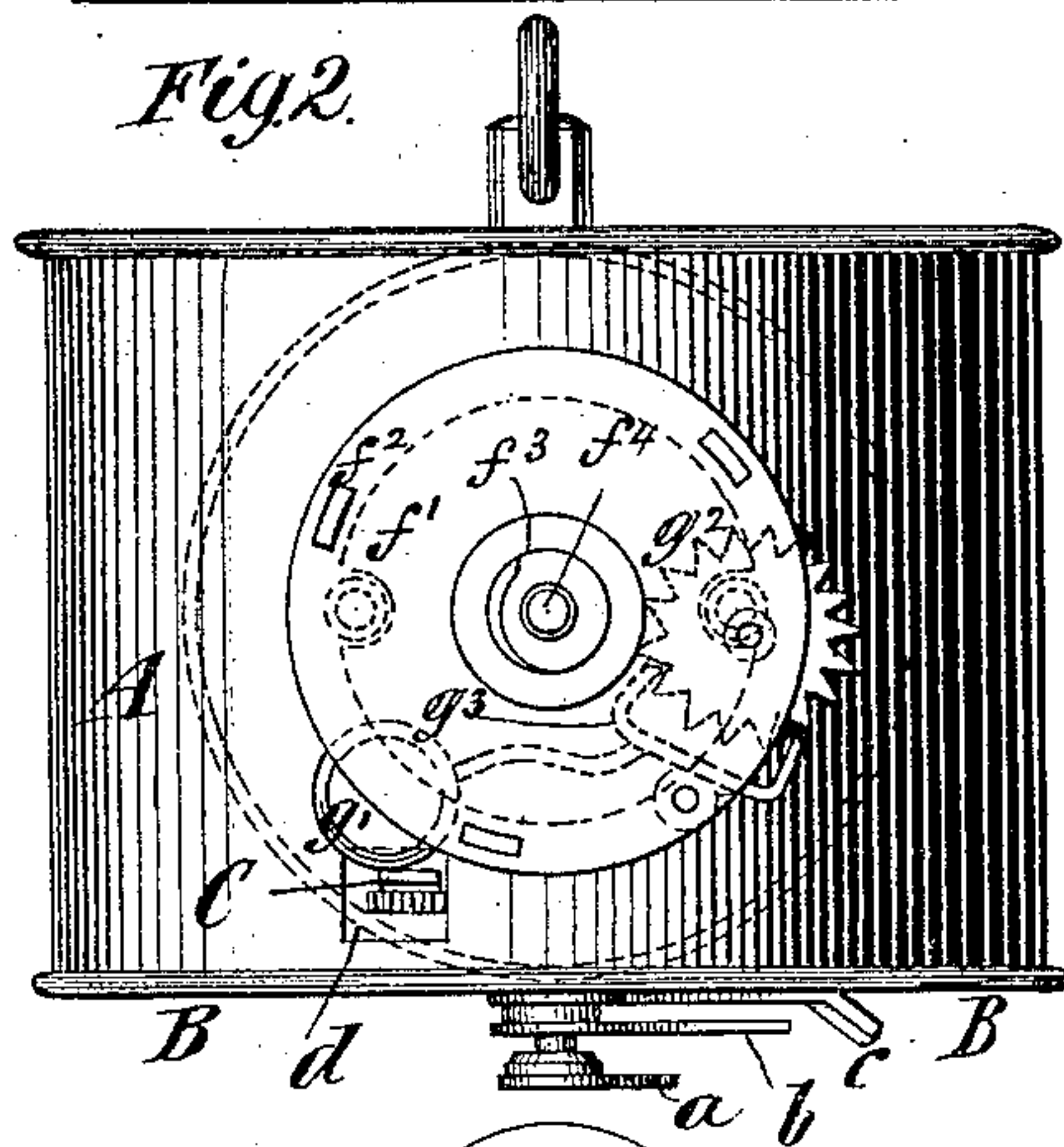
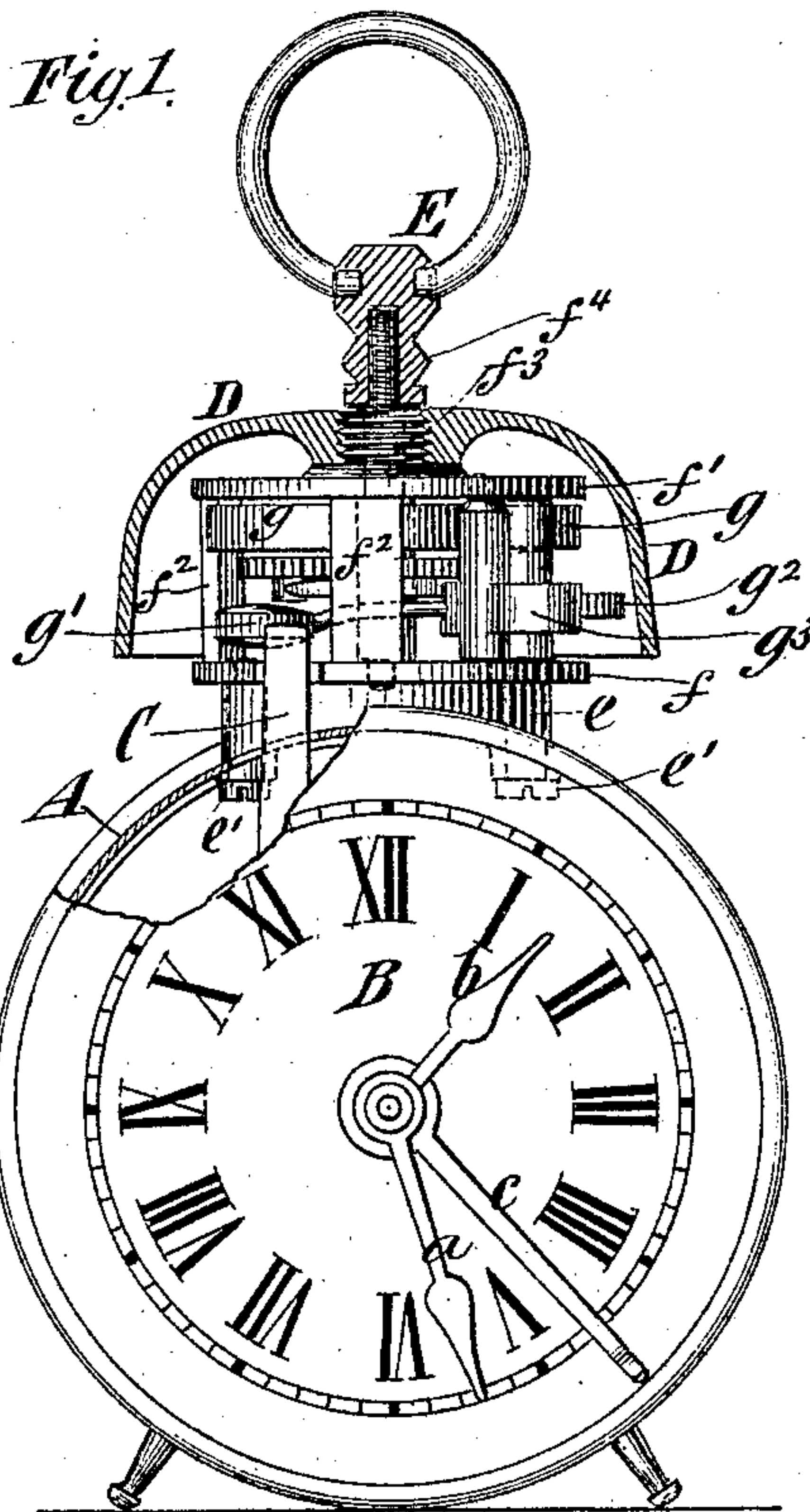


(No Model.)

W. D. DAVIES.
ALARM CLOCK.

No. 307,022.

Patented Oct. 21, 1884.



Witnesses
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UNITED STATES PATENT OFFICE.

WALTER D. DAVIES, OF BROOKLYN, ASSIGNOR TO THE ANSONIA CLOCK COMPANY, OF NEW YORK, N. Y.

ALARM-CLOCK.

SPECIFICATION forming part of Letters Patent No. 307,022, dated October 21, 1884.

Application filed February 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, WALTER D. DAVIES, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Alarm-Clocks, of which the following is a specification.

My invention relates particularly to small clocks having cases which are now commonly made of metal, and of circular or nearly circular form, and which have an alarm-bell on the top of and external to the case, the axis of the bell usually being vertical.

As heretofore made alarm-clocks of the kind above described have had the alarm-movement within the case, and the alarm-hammer has been extended upward through an opening in the top of the case and into the bell. The size of the clock-case is necessarily increased by the arrangement of the alarm-movement therein; and the object of my invention is to make the clock-case as small as possible, or, in other words, to provide an alarm-clock having the bell arranged as above described, and the case of which shall be no larger than the smallest clock without an alarm.

In carrying out my invention I arrange the whole alarm mechanism, including the alarm-hammer, on the exterior of the case and entirely within the alarm-bell, at the top thereof, the alarm-movement being arranged horizontally, so that the alarm-hammer will have movement in an approximately horizontal plane, and will operate on the interior of the bell. I also arrange or employ a trip-lever to be operated by the time-movement of the clock, and which is extended upward through an opening in the top of the clock-case, and serves to directly block the alarm-hammer.

My invention consists in novel combinations of parts, hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a partly-sectional front view of a clock embodying my invention. Fig. 2 is a plan thereof, the bell being removed; and Fig. 3 is a sectional view of an alarm-bell and a part of the alarm-movement arranged therein, illustrating a modification of my invention.

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

A designates the clock-case, which may be of any suitable construction and material. Usually the case will be of sheet metal, and will consist of a cylindric or polygonal body, in the front of which is the dial B and at the back of which is a removable disk or head.

a b designate the hands, and *c* designates the alarm-index, which may be set by turning it on the dial to any predetermined hour. By turning the index *c* the alarm-cam will be adjusted or moved to release the trip-lever C at the desired time.

The alarm-trip forms no part of my invention, and may be of any suitable or well-known character which will release the trip-lever at the desired time. The trip-lever C projects or extends upward through an opening, *d*, in the body of the case A, as shown in Figs. 1 and 2. On the exterior of the case, and, as here shown, on the top thereof, is a projection, *e*, on which rests the lower plate, *f*, of the alarm-movement. The upper and lower plates, *f' f*, are rigidly connected by posts *f²*, and by means of screws *e'* the frame of the alarm-movement is secured on the exterior of the case.

On the upper plate, *f'*, of the alarm-movement is formed or attached a hub or stem, *f³*, which is or may be screw-threaded, and on which the bell D is secured. Through the stem *f³* passes the winding-arbor *f⁴* of the alarm-movement. The stem *f³* may terminate at the top of the bell D, as shown in Fig. 1, and the arbor *f⁴* may be prolonged considerably above the said stem and have the pendant E screwed upon it; or the said stem *f³* may be prolonged above the bell, as shown in Fig. 3, and have the pendant E screwed upon it. In the latter case the arbor *f⁴* will be prolonged above the stem *f³* and into the pendant-ring, and will have a head, *, secured upon it.

In Fig. 1 the arbor *f⁴* is to be turned by turning the pendant E itself; but in Fig. 3 the said arbor is turned by the head *, like a stem-winding watch.

g designates the actuating-spring of the alarm-movement, and *g'* designates the alarm-hammer, which is operated by the alarm-escapement, of which *g² g³* designate the escape-wheel and anchor. The hammer *g'* is blocked by the trip-lever C, before described, and when

said lever is released the hammer operates on the bell D in a well-understood manner. The bell D has an approximately vertical axis, and the entire alarm-movement, including the alarm-hammer g' , is arranged within the bell, the hammer being arranged to operate on the interior of the bell and in an approximately horizontal plane. The trip-lever C also serves to block the hammer g' directly. The winding-arbor f^1 of the alarm-movement not only extends through the stem f^3 , but has an amply long bearing formed therein, as shown most clearly in Fig. 3.

By arranging the entire alarm mechanism or movement external to the case and within the bell D, I am enabled to make the case A smaller than would otherwise be possible, and the whole produces a very ornamental alarm-clock, which is small and may be sold at a small price.

The invention is applicable to one and eight day clocks.

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

1. The combination, with a clock-case and the alarm-bell D, having an approximately vertical axis, and secured to a fixed support on the top of the case, of an alarm-movement arranged on the top of the case within the said bell, and having its hammer, g' , movable in a horizontal plane, and its winding-arbor, f^1 , extending through the fixed support of the bell and projecting above the bell, to afford provision for turning it, and a trip-lever, C, extending upward through an opening in the case and serving to block the alarm-hammer, substantially as and for the purpose described.

2. The combination, with a clock-case having an upward external projection, e , of an

alarm-movement secured upon said projection, a bell, D, containing the alarm-movement, and a trip-lever, C, extending upward through an opening, d , in said case, substantially as herein described.

3. The combination, with a clock-case, of an alarm-movement secured on the top thereof, and having an alarm-hammer movable in a horizontal plane, a trip-lever, C, extending upward through an opening, d , in the case and serving to directly block said hammer, and an alarm-bell, D, containing and inclosing within it said alarm movement and hammer and supported by said movement, substantially as herein described.

4. The combination of the case A, the alarm-movement secured thereon, having the hammer g' , movable in a horizontal plane, and having on its upper plate, f' , the stem f^3 , the winding-arbor f^1 , passing through and having a bearing in said stem, and the alarm-bell D, supported on said stem and inclosing within it the alarm-movement with its alarm-hammer, substantially as and for the purpose herein described.

5. The combination of the case A, the alarm-movement secured thereon, and having on its upper plate, f' , the stem f^3 , the bell D, containing the said alarm-movement and supported by the said stem f^3 , the pendant E, also secured upon the said stem, and the winding-arbor f^1 , extending through said stem into the pendant-ring, substantially as herein described.

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