

(No Model.)

2 Sheets—Sheet 1.

C. K. COLBY.
WATCH MOVEMENT BOX.

No. 355,509.

Patented Jan. 4, 1887.

Fig. 1.

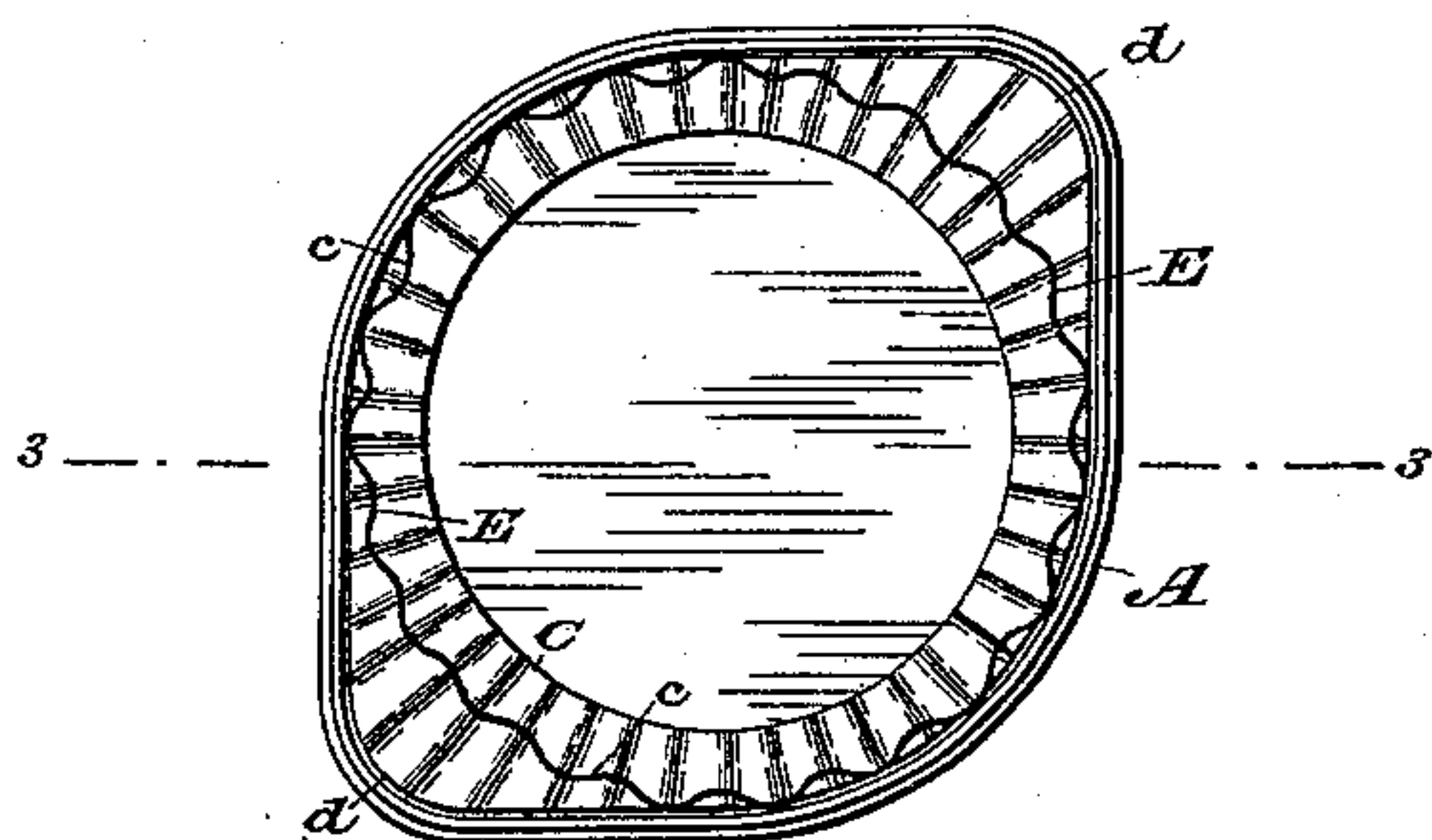


Fig. 2.

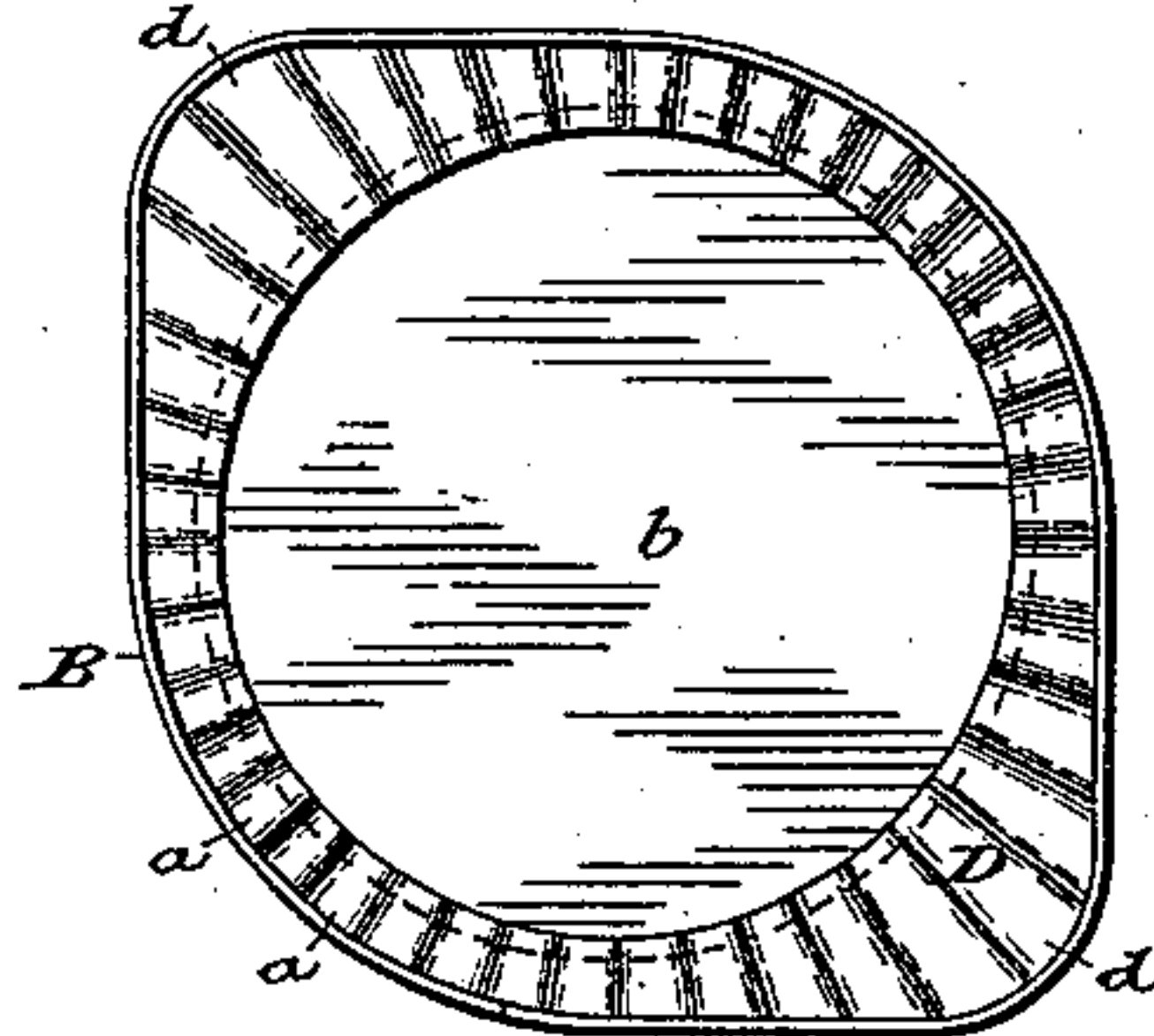


Fig. 3.

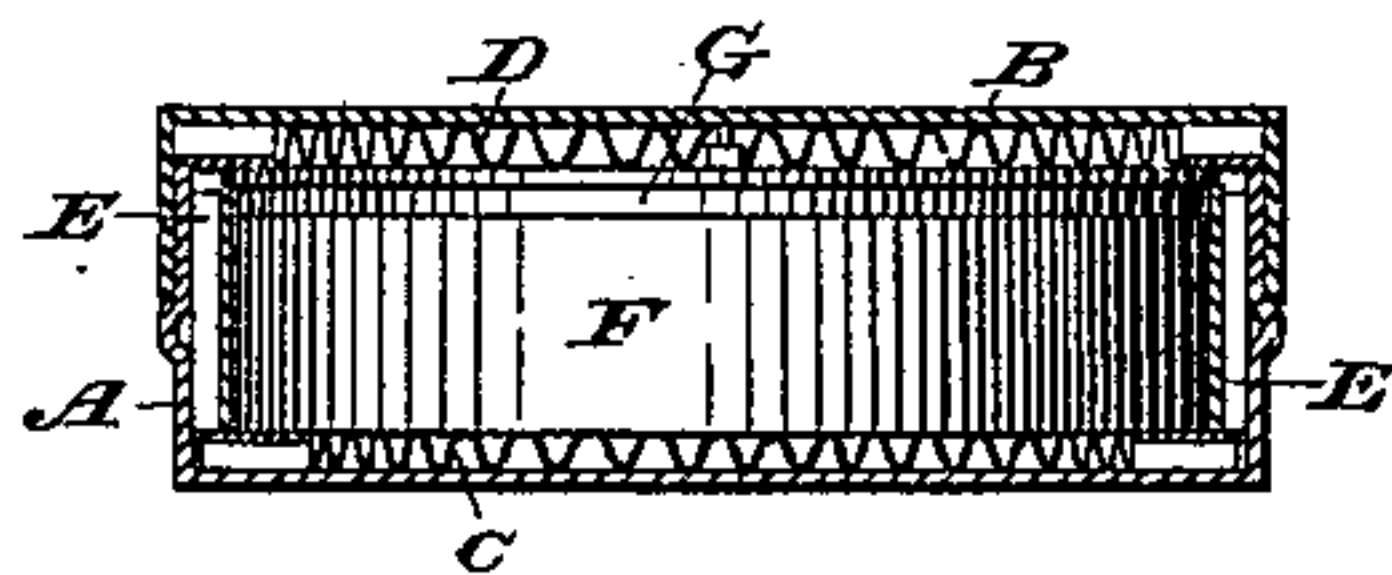


Fig. 4.

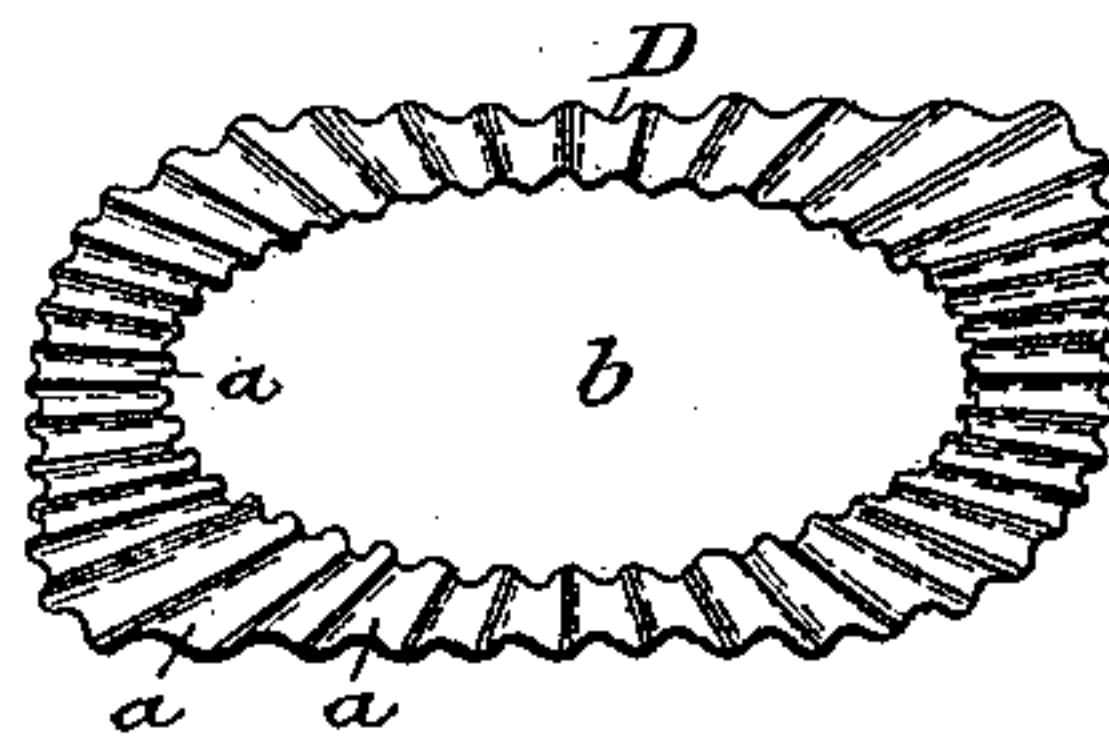
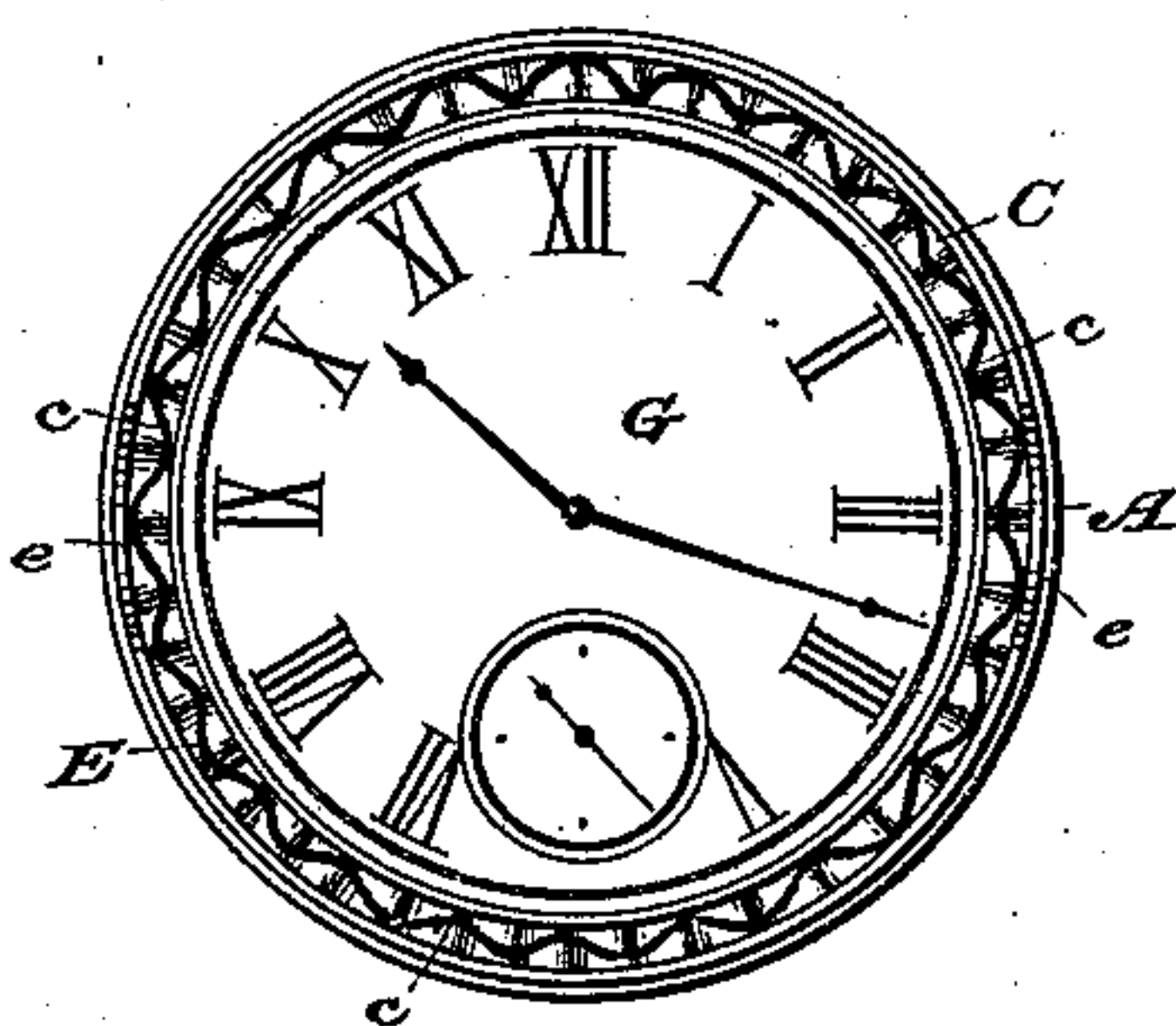


Fig. 5.



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Geo. Bainton

INVENTOR:

Caleb K. Colby

By his Attorneys,

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Fig. 6.

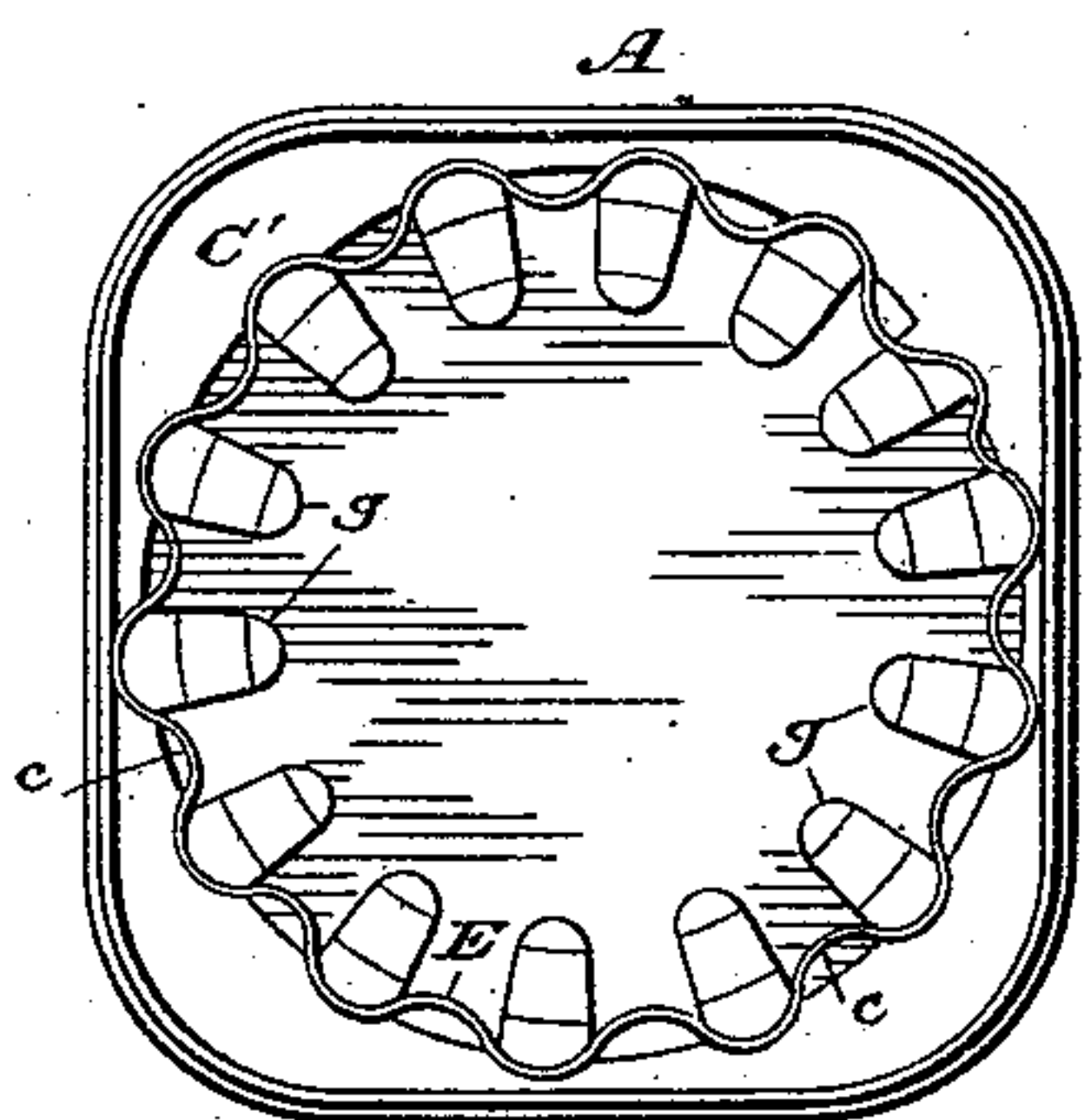


Fig. 7.

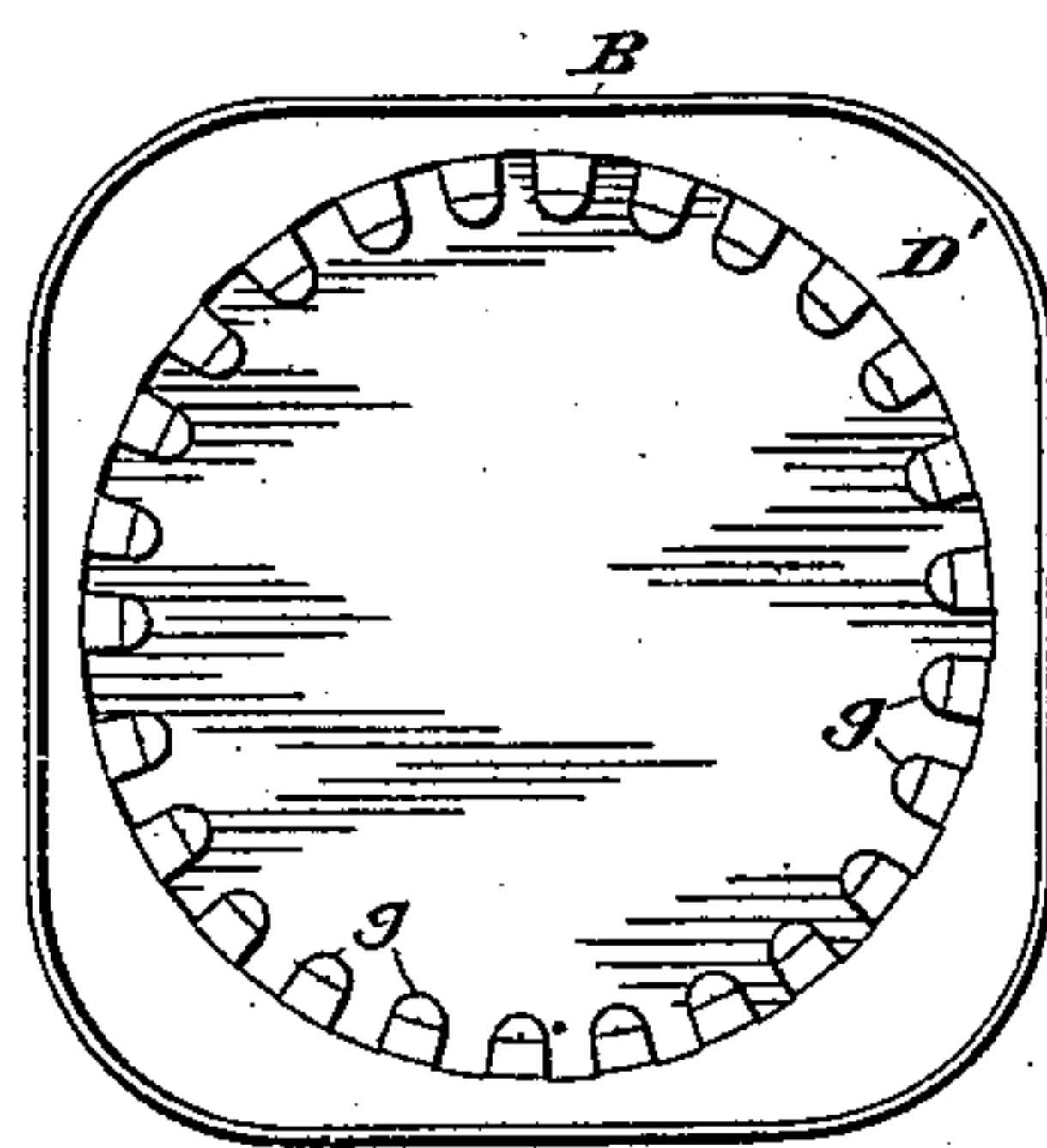
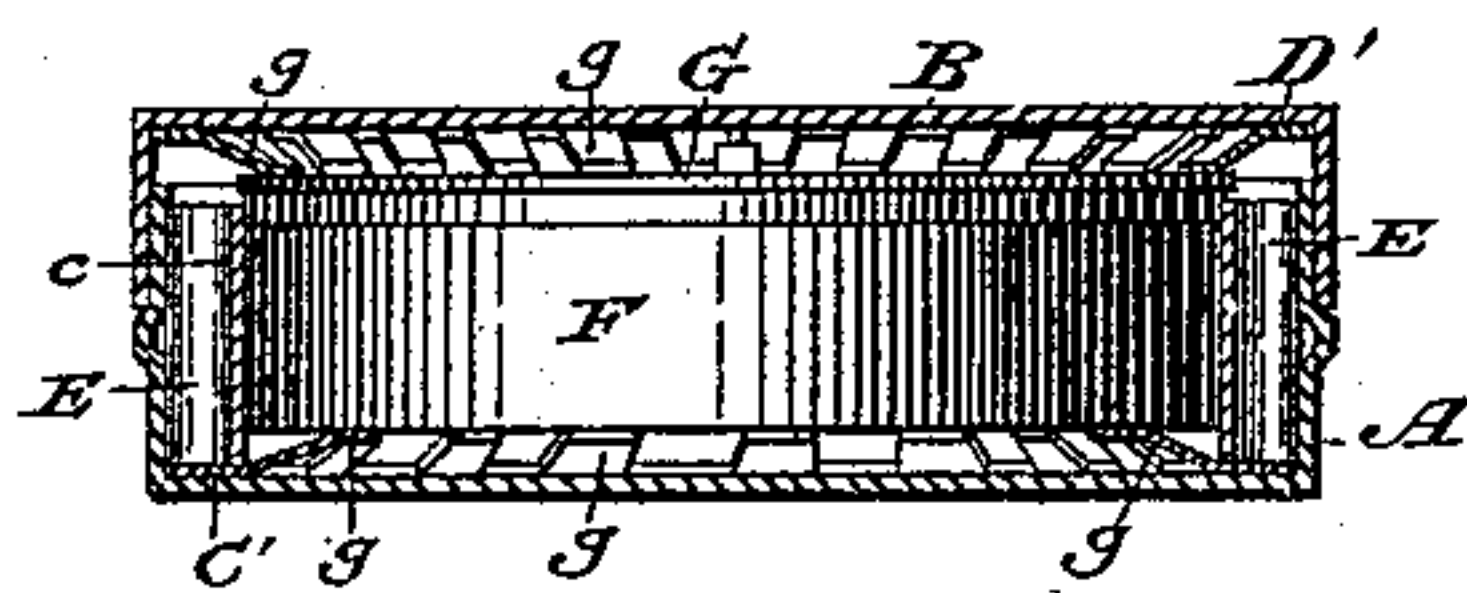


Fig. 8.



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UNITED STATES PATENT OFFICE.

CALEB K. COLBY, OF BROOKLYN, NEW YORK.

WATCH-MOVEMENT BOX.

SPECIFICATION forming part of Letters Patent No. 355,509, dated January 4, 1887.

Application filed February 10, 1886. Serial No. 191,444. (No model.)

To all whom it may concern:

Be it known that I, CALEB K. COLBY, a citizen of the United States, and a resident of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Boxes for Watch-Movements, of which the following is a specification.

My invention relates to that class of boxes commonly employed for holding the movements of watches in order to protect them during transportation and while kept in stock. It is the common practice to set the movement in an open-topped tin case or shell, and to inclose the movement and its case or shell in an outer box having a cover. This outer box, also, is usually made from sheet-tin, and a paper box or some elastic medium has been placed between the movement and the outer box.

The object of my invention is, in part, to provide the box with an improved spring or elastic medium arranged between the outer box and the movement, or its shell, and in part to provide a box of improved form to hold the spring and movement. I here speak of the elastic medium as a spring; but it is composed of three distinct parts, as will be explained, each of which is a spring of itself; but all tend to one end.

My invention will be fully described hereinafter, and its novel features carefully defined in the claims.

In the drawings, which serve to illustrate my invention, Figure 1 represents my improved box with the cover removed and the box-springs in place. Fig. 2 represents the inside of the box-cover, showing also the top spring therein. Fig. 3 is a transverse section of the box with the cover on and the shell holding the movement in the box. The movement and its case are in elevation, and the springs in the box and cover are in section. Fig. 4 is a perspective view showing the top spring, and representing also the form of the bottom spring, these two springs being substantially the same in form and construction. Fig. 5 is a view of a circular box, provided with my improved spring. This view shows the box open and the movement in place. Figs. 6, 7, and 8 are views corresponding to views 1, 2, and 3, respectively, and illustrating modi-

fied forms of the top and bottom springs. This view also shows the box constructed square, with rounded corners.

Referring to the first four figures of the drawings, A represents the box, and B its cover. These are usually stamped up from sheet metal.

C is the bottom spring, arranged in the bottom of the box. D is the top spring, arranged in the cover of the box, and E is the side spring, arranged at the side of the box. These three springs or parts I denominate simply as the "spring," as they act conjointly to protect the movement against injury from sudden jars or shocks.

F in Fig. 3 represents the usual open sheet-metal case or shell, in which the movement G fits snugly. This case F is in common use, and is employed to house and protect the movement at the sides and back, leaving the dial-plate (seen in Fig. 5) exposed.

In constructing the top and bottom springs C and D, I corrugate a thin sheet of some hard elastic material, usually sheet brass, forming the corrugations *a a* in same radially. The exterior contour of these springs is such as will fit into the box and cover, preferably; but it is not absolutely essential that they should fit exactly, so long as they will enter the box and cover, respectively. They may be held in place by a drop of solder or by a rivet. Where the springs fit tightly into the box and cover at opposite sides, this will usually be sufficient to hold them in place, as there is little tendency for them to escape. The top spring, D, has a circular inner contour, and the size of the circular aperture *b* therein is such that the inner margin of the spring, when the cover is in place on the box, takes over the outer margin of the dial of the watch-movement, but does not extend in far enough to reach the hands. The depressed corrugations of the spring rest on the dial all around its margin. The dotted circle in Fig. 2 indicates the marginal line of the movement, and shows to what extent the spring D takes over on it in the construction and proportions herein set forth. The bottom spring, C, is usually made identical with the top spring, and is fairly illustrated detached by Fig. 4. It is not so important, however, that the interior margin of the bot-

tom spring shall extend to so slight an extent onto the movement. In other words, the aperture in this spring may be less in diameter than the aperture *b* in the top spring, D, and in Fig. 1 I have shown it less. The side spring, E, is usually made from the same material as the top and bottom springs, and is in the form of a corrugated band or hoop. This band is circular in plan, as seen in Figs. 1 and 5, and its indented corrugations *c c* bear on the sides of the movement-case F, either all around or at several points, when the movement is in place in the box. I usually attach this side spring to the side wall of the box at one or two points by solder or by a rivet; but the mode of attachment is not important. When the movement is placed in its box, it rests upon the corrugated bottom spring, C, and is pressed upon by the top spring, D, in the cover B. The side spring, E, embraces the movement at the sides, as before stated. Thus the movement is protected on all sides against sudden jars or jolts.

The preferred form or shape of the inclosing box is shown in Figs. 1 and 2. This box has two lateral extensions, *d d*, on opposite sides, which allow of the insertion of the thumb and finger into the box, to grasp the movement in order to lift it from the box, and they also prevent the box from rolling when set on edge—a common objection to circular boxes such as that shown in Fig. 5. Such a box will occupy as little practicable space as a round box when the boxes are packed in large square boxes for shipment.

My side spring, E, may or may not rise high enough to prevent the movement from being grasped by the fingers and lifted out. It will be feasible to let the spring rise nearly to the level of the dial-plate of the movement, and to cut a scallop from its upper edge at opposite sides where the movement is to be grasped. When a round box is employed, as seen in Fig. 5, scallops *e e* are cut out from the upper margin of the box wall in order to allow the movement to be reached and grasped by the fingers.

In Figs. 6, 7, and 8 I show a modified construction of the top spring, D', and the bottom spring, C'. In this construction the corrugations are omitted, and elastic fingers *g g* are formed on the inner margin of the aperture in the spring. These fingers are bent up a little, and their tips rest on the movement to hold

it in place, as clearly shown in Fig. 8. The side spring, E, is constructed the same as that shown in Fig. 1.

The box A, (shown in Figs. 6, 7, and 8,) is square, with its corners rounded.

I am aware that corrugated paper has been used for packing fragile articles—such as bottles, for example—but this will not serve my purpose. Paper boxes have been employed to hold watch-movements; but they are very objectionable, for the reason that the lint and particles from the paper get into the movement. Paper packing would be still more objectionable than paper boxes. Even when the latter are coated with varnish, they are found to yield lint and dust to an injurious extent.

I make my springs of metal, although it would be feasible to make them of some hard elastic material—like celluloid, for example—but I much prefer metal.

I am also aware that leaf springs of metal have been attached at one end to the sides of the shell holding the movement, and at their other ends to a ring slipped into the outer box. This construction I do not claim.

Having thus described my invention, I claim—

1. The combination, with a box for a watch-movement, of a cushion-spring device arranged in said box, said device comprising a corrugated side spring, E, a bottom, substantially as described, for the movement to rest on, and a top spring in the box-cover, having a clear central aperture a little less in diameter than the diameter of the watch-dial, as set forth.

2. The combination, with the box A, provided with a corrugated bottom spring, C, and a corrugated side spring, E, of the box-cover B, provided with a corrugated spring, D, having a circular aperture a little less in diameter than the diameter of the dial-plate of the movement to be contained in the box, substantially as and for the purposes set forth.

3. The combination, with a box for a watch-movement, of the radially-corrugated spring D, having a central opening, *b*, arranged in the cover of said box, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CALEB K. COLBY.

Witnesses:

HENRY CONNETT,
ARTHUR C. FRASER.