

(No Model.)

G. E. HART.

WATCH DIAL.

No. 364,109.

Patented May 31, 1887.

Fig. 1.

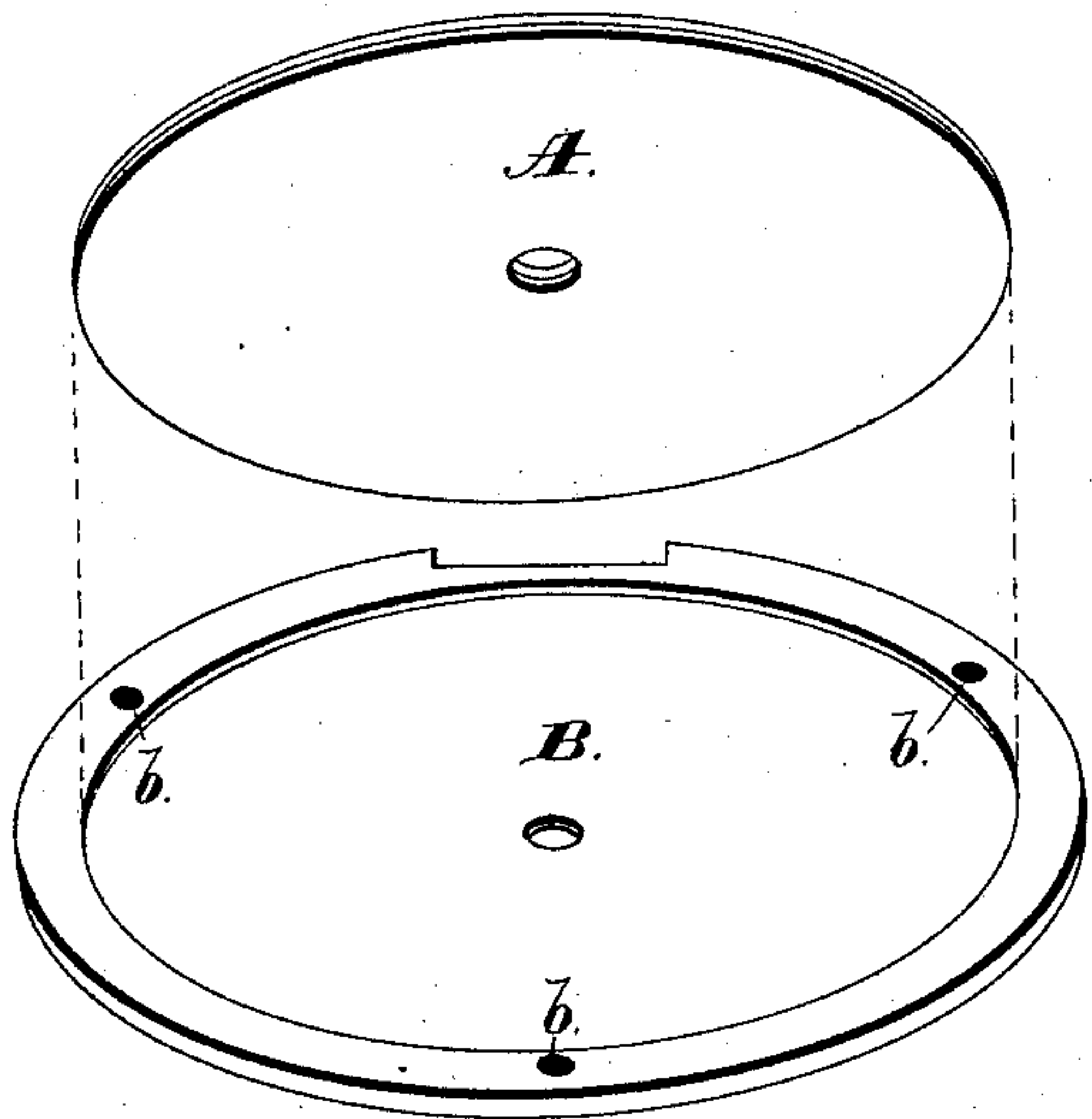


Fig. 2.

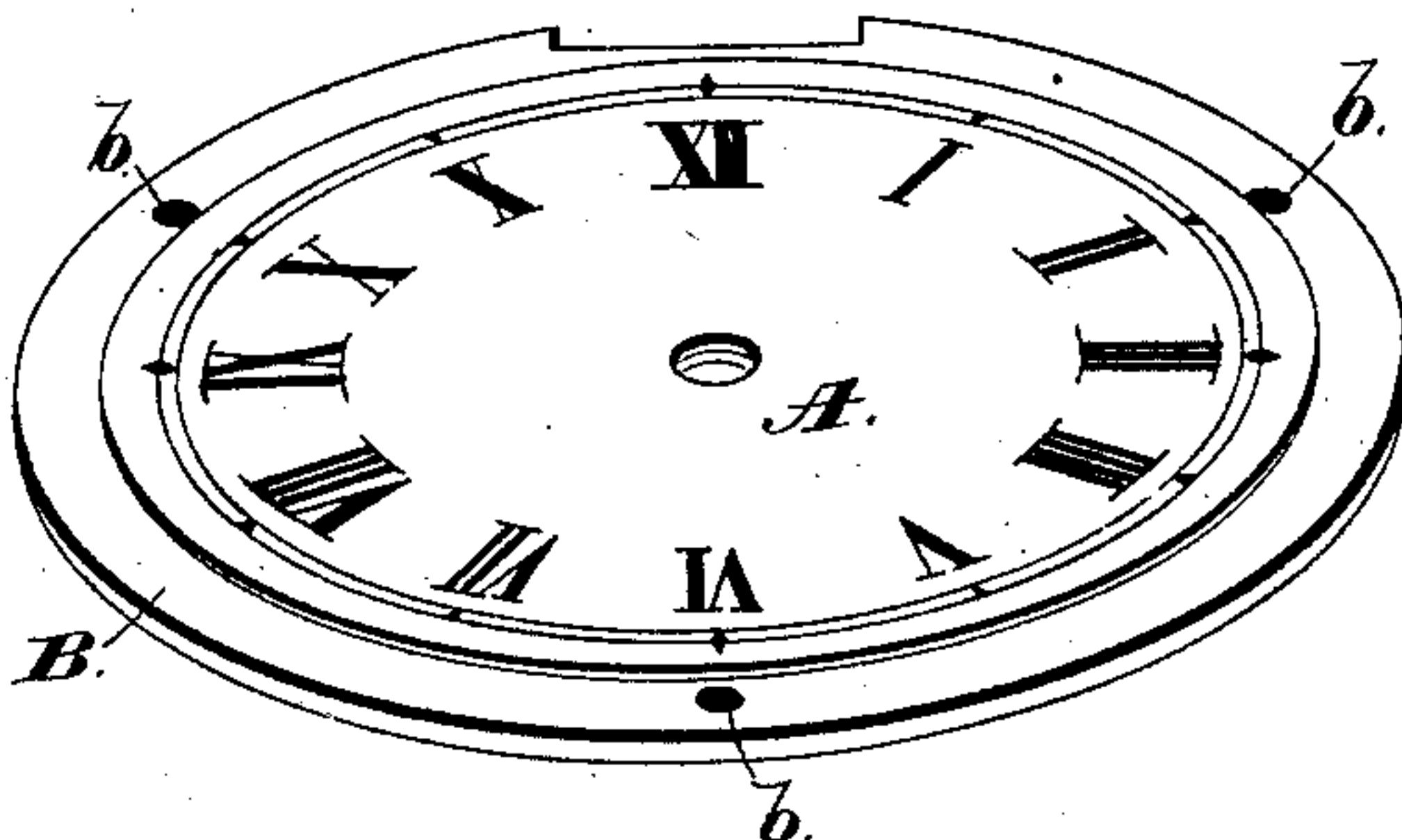


Fig. 3.

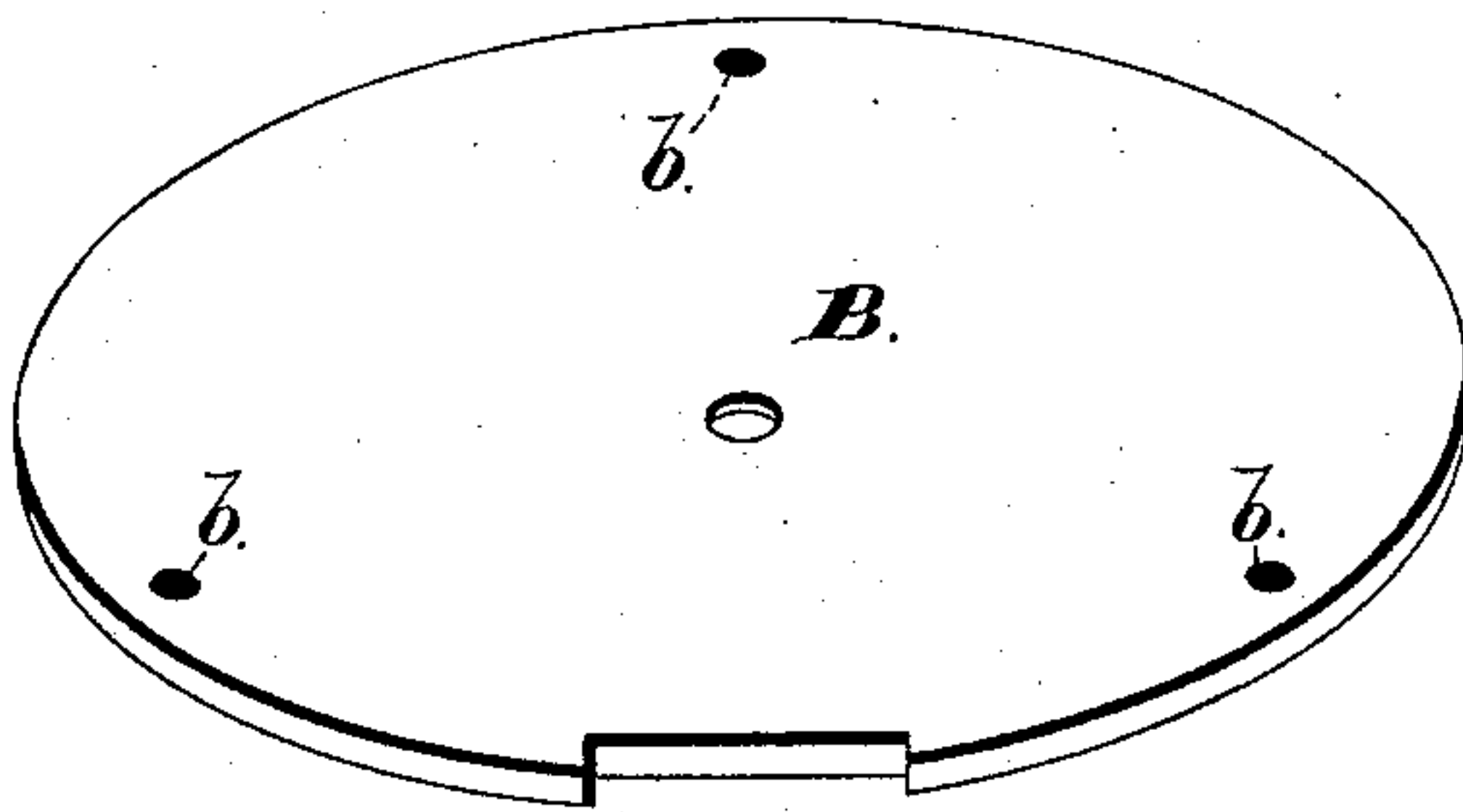


Fig. 4.

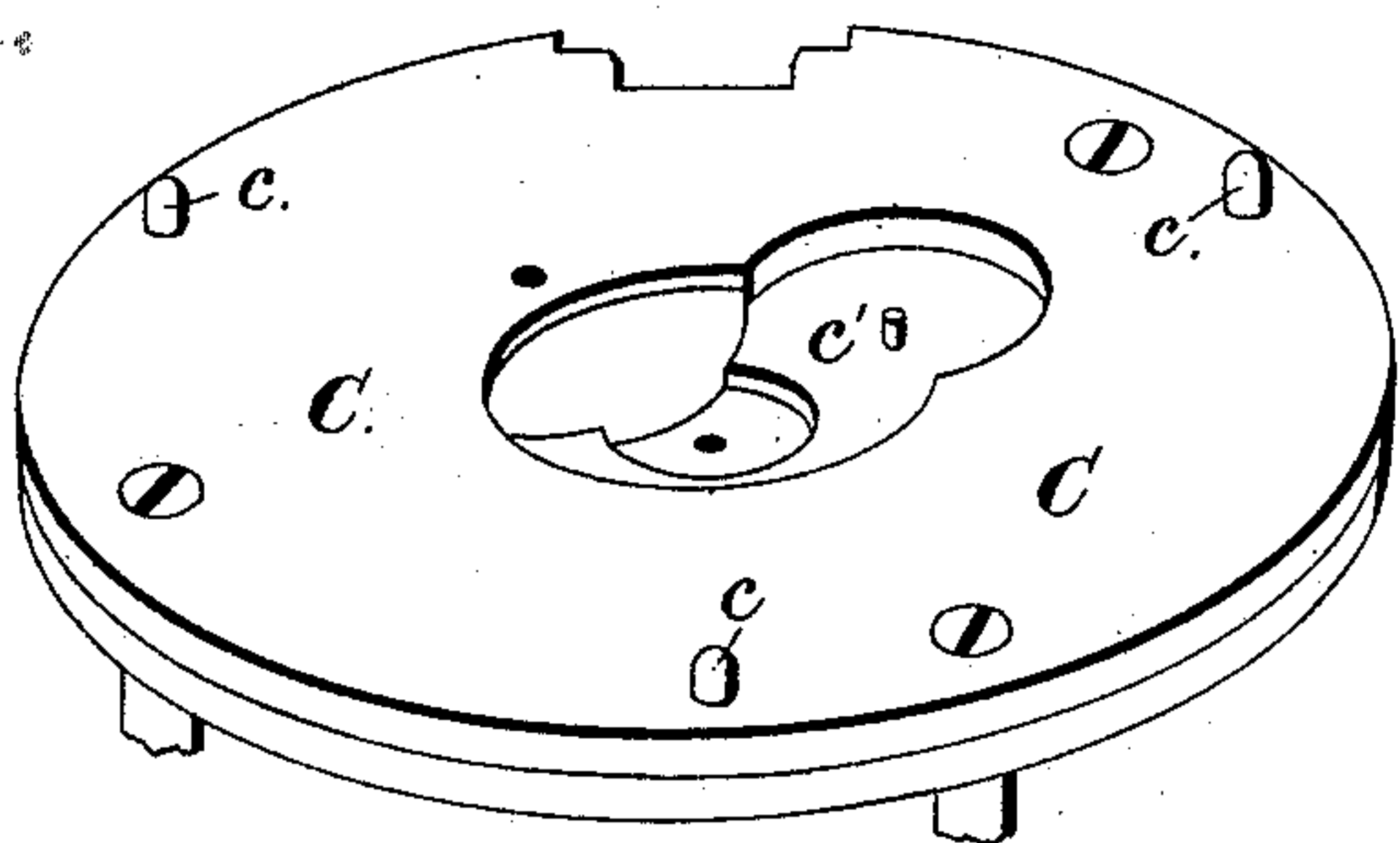


Fig. 5.

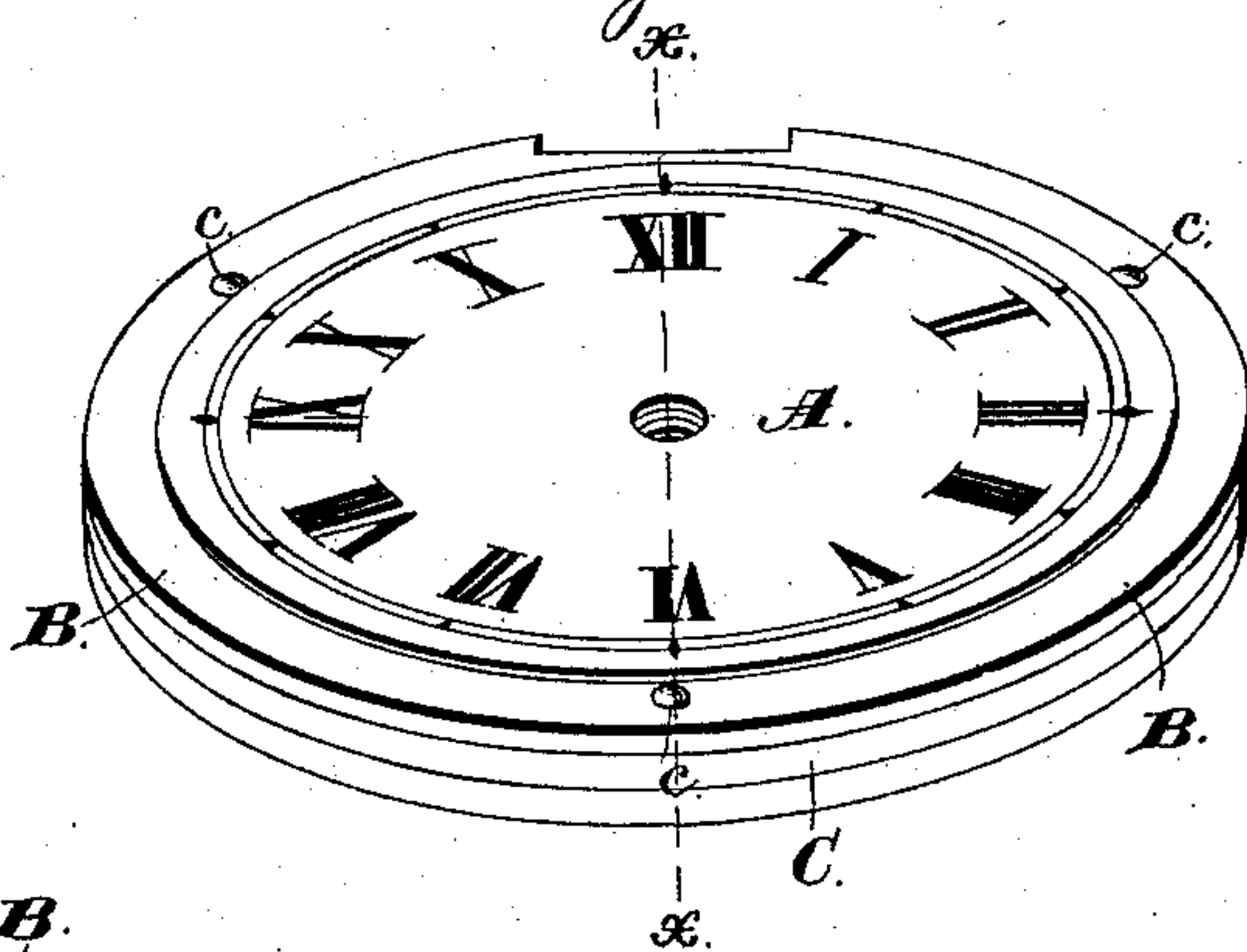
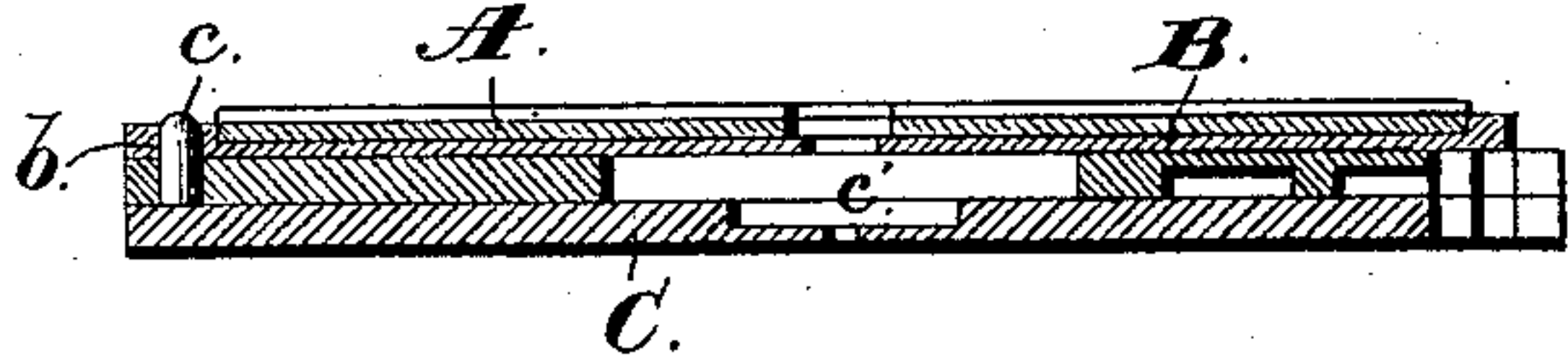


Fig. 6.



Witnesses:

Jas. E. Hutchinson.  
Chas. J. Williamson.

Inventor.

Geo. E. Hart, by  
Erindell Russell, his Attys.



# UNITED STATES PATENT OFFICE.

GEORGE E. HART, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE  
WATERBURY WATCH COMPANY, OF SAME PLACE.

## WATCH-DIAL.

SPECIFICATION forming part of Letters Patent No. 364,109, dated May 31, 1887.

Application filed September 6, 1886. Serial No. 212,832. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE E. HART, of Waterbury, in the county of New Haven, and in the State of Connecticut, have invented certain new and useful Improvements in Watch-Dials; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my dial and dial-plate before the same are united. Figs. 2 and 3 are like views of opposite sides of the same when combined. Fig. 4 is a perspective view of a watch-movement adapted to receive said parts. Fig. 5 is a like view of the same after said dial and its plate have been placed in position, and Fig. 6 is a section upon line *x x* of Fig. 5.

Letters of like name and kind refer to like parts in each of the figures.

In the manufacture of watches it has heretofore been customary to employ enameled dials which are manufactured as a specialty, and are each provided with two or more rearward-projecting studs or "feet" that pass into corresponding openings in the front plate of a watch-movement and serve to secure the dial in place thereon; but in the fitting of such dials to place material differences are ordinarily found in the positions of the feet with relation to each other and to the central opening of the dial, and in such cases it becomes necessary to bend one or all of the feet, in order that they may fit into their openings and that the dial may be centrally located, the result being that frequent breakages occur and the enamel becomes cracked at the point where a foot is secured to the metal base of the dial. Another difficulty arises from the usual irregularity of the rear face of the dial, in consequence of which the distance between the same and the movement-plates varies, so that the dial-wheels must be specially fitted to each dial, in order that they may have the necessary amount of end-shake.

To obviate these difficulties is the design of my invention, which consists, principally, as a means for combining an enameled or porcelain dial with a watch-movement, in a metal plate which is cemented upon the back side of the dial and is fitted to and adapted to be se-

cured upon the movement-plate, substantially as and for the purpose hereinafter specified.

It consists, further, as an improvement in watches, in combining with an enameled or porcelain dial a metal plate which is secured to or upon its rear face and is adapted to be fitted over and attached to the movement-plate of a watch, substantially as and for the purpose hereinafter shown.

It consists, further, as an improvement in watches, in a dial-plate which is fitted over and adapted to be secured upon the movement-plate of a watch, in combination with said movement-plate and with an enameled or porcelain dial that is cemented upon or attached to the front side of said dial-plate, substantially as and for the purpose hereinafter set forth.

It consists, finally, as an improvement in watches, in the combination of an enameled or porcelain dial, a metal plate which is secured upon its rear face, and a front movement-plate that is adapted to receive said dial-plate and to have the same attached thereto, substantially as and for the purpose hereinafter shown and described.

In the carrying of my invention into practice I employ a dial, A, which is preferably made by enameling with porcelain a disk of copper, but may be entirely composed of porcelain, if desired. Said dial is made plain—that is, without the feet that are usually provided upon its rear face, but in other respects resembles the ordinary dial.

Cemented upon or secured to the back of the dial A is a metal plate, B, which, preferably, has a somewhat greater diameter, so that its edge projects beyond the edge of said dial, and has its outer face recessed to receive the latter, as shown. Said plate has a plain rear face, and is fitted over and adapted to be imposed upon the outer face of the front movement-plate, C, of a watch, and is preferably secured in position thereon by means of three pins, *c*, which project from said movement-plate outward through corresponding openings, *b*, in said dial-plate; but, if desired, screws or any other form of fastening may be employed in place of said pins.

The dial-plate B is fitted to the movement-plate C before the dial A is secured in place; but as the last-named operation in no manner



changes the form of said dial-plate the distance between its inner face and the bottom of the recess *c'* for the dial-wheels remains the same, so that dial-wheels made therefor and having  
5 a predetermined amount of end-shake will always fit to place without change.

The hollow arbors of the minute and hour wheels will of course project to a greater or less distance through the dial if the latter is  
10 thinner or thicker than the average; but such variations will be readily compensated by the hubs of the hands, which hubs have sufficient length to enable said hands to be adjusted lengthwise of said hollow arbors as much as  
15 may be required in order to insure the proper position of the former with relation to the face of said dial, precisely as would be the case were a dial of ordinary construction used. This construction also enables the dial to be readily  
20 located so as to bring its axial opening into an absolutely central position—an operation which is very difficult with the ordinary form of dial.

Having thus described my invention, what  
25 I claim is—

1. As a means for combining a vitrified, enameled, or porcelain dial with a watch-movement, a metal plate which is cemented upon the back side of the dial and is fitted to and  
30 adapted to be secured upon the movement-plate, substantially as and for the purpose specified.

2. As an improvement in watches, in combination with a vitrified, enameled, or porcelain dial, a metal plate which is secured to or  
35 upon its rear face and is adapted to be fitted over and attached to the movement-plate of a watch, substantially as and for the purpose shown.

3. As an improvement in watches, a dial-plate which is fitted over and adapted to be  
40 secured upon the movement-plate of a watch, in combination with said movement-plate and with a vitrified, enameled, or porcelain dial that is cemented upon or attached to the front  
45 side of said dial-plate, substantially as and for the purpose set forth.

4. As an improvement in watches, the combination of a vitrified, enameled, or porcelain dial, a metal plate which is secured upon its  
50 rear face, and a front movement-plate that is adapted to receive said dial-plate and to have the same attached thereto, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I  
55 have hereunto set my hand this 11th day of August, 1886.

GEORGE E. HART.

Witnesses:

GEO. S. PRINDLE,  
E. L. BRONSON.