

(No Model.)

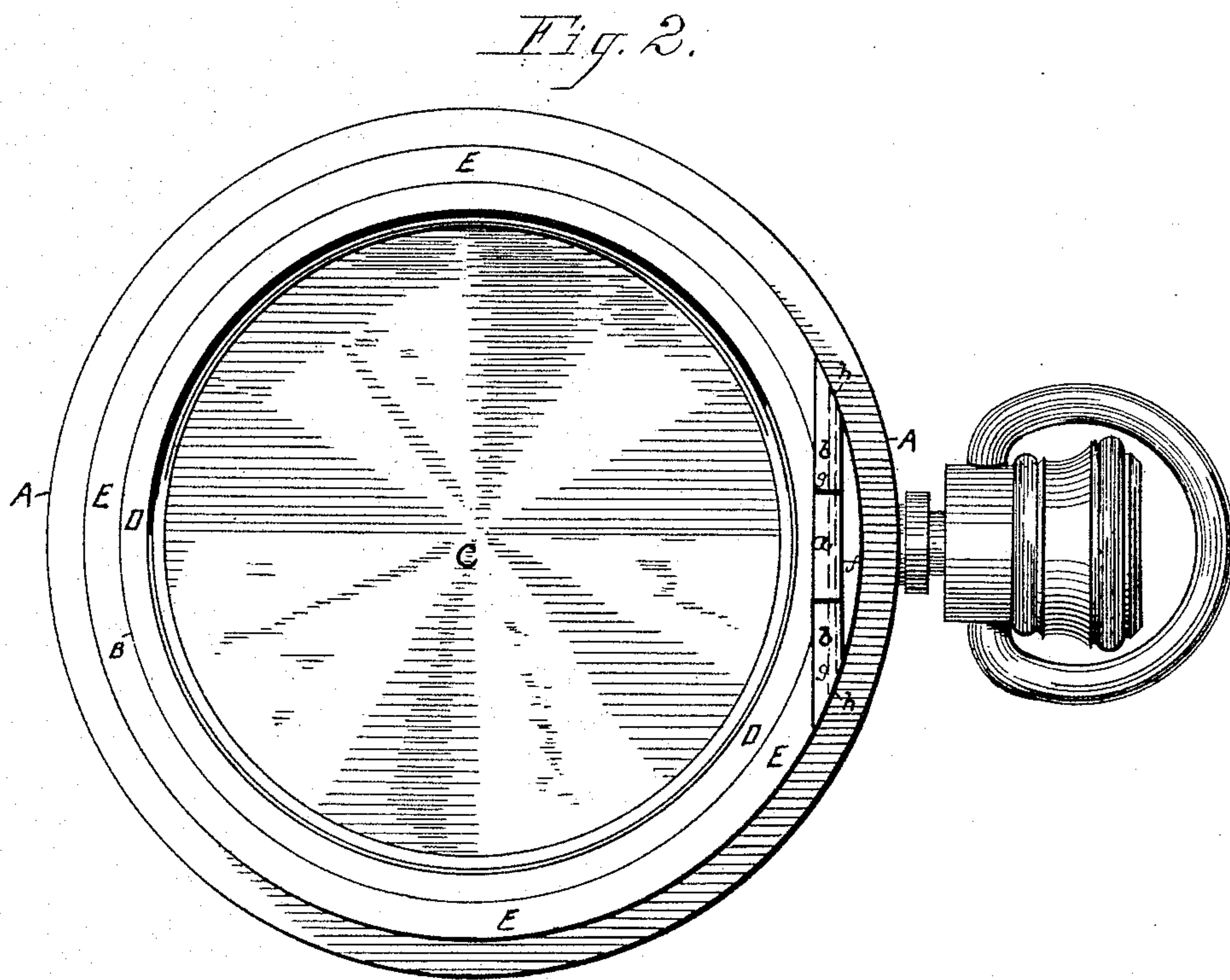
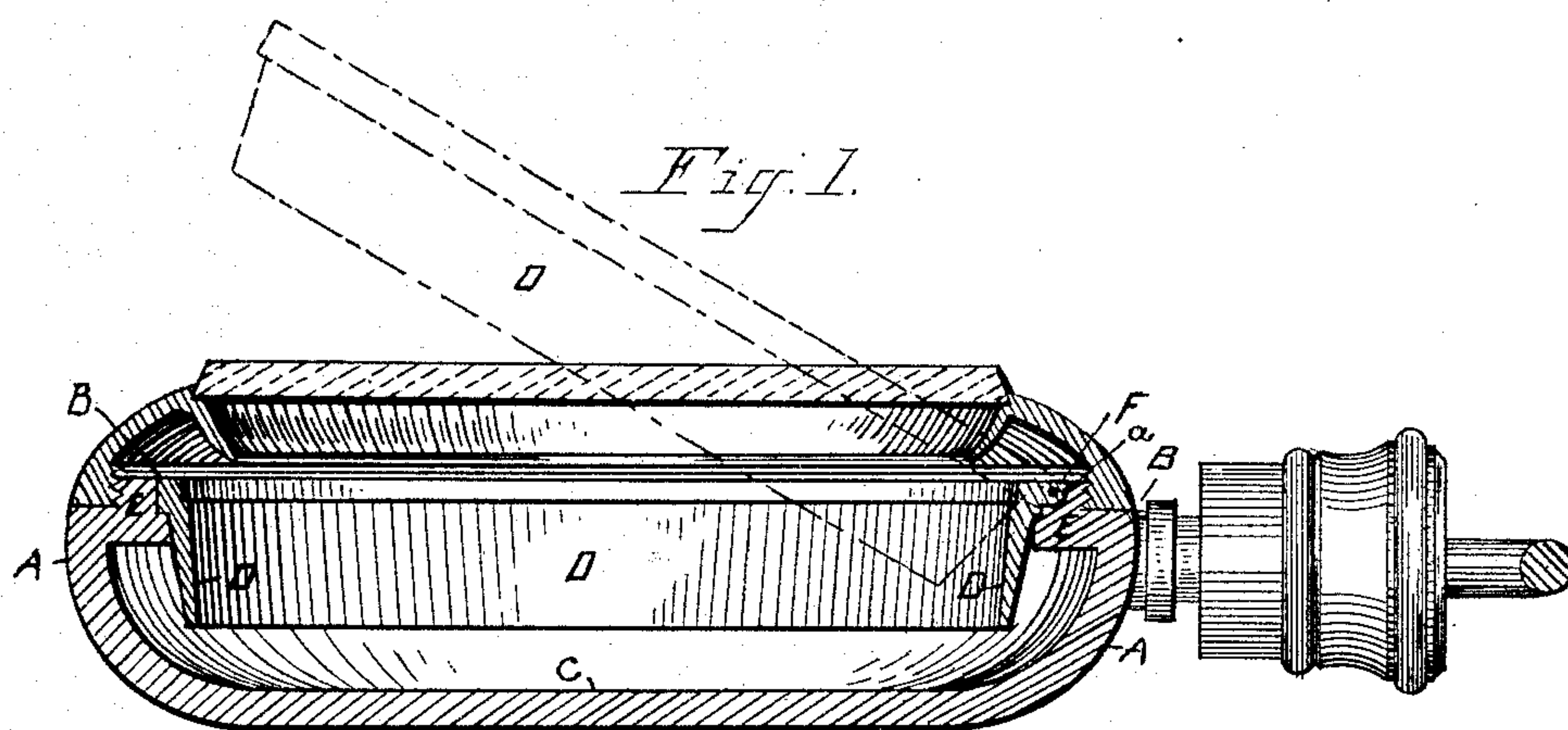
2 Sheets—Sheet 1.

D. O'HARA.

WATCH CASE.

No. 353,706.

Patented Dec. 7, 1886.



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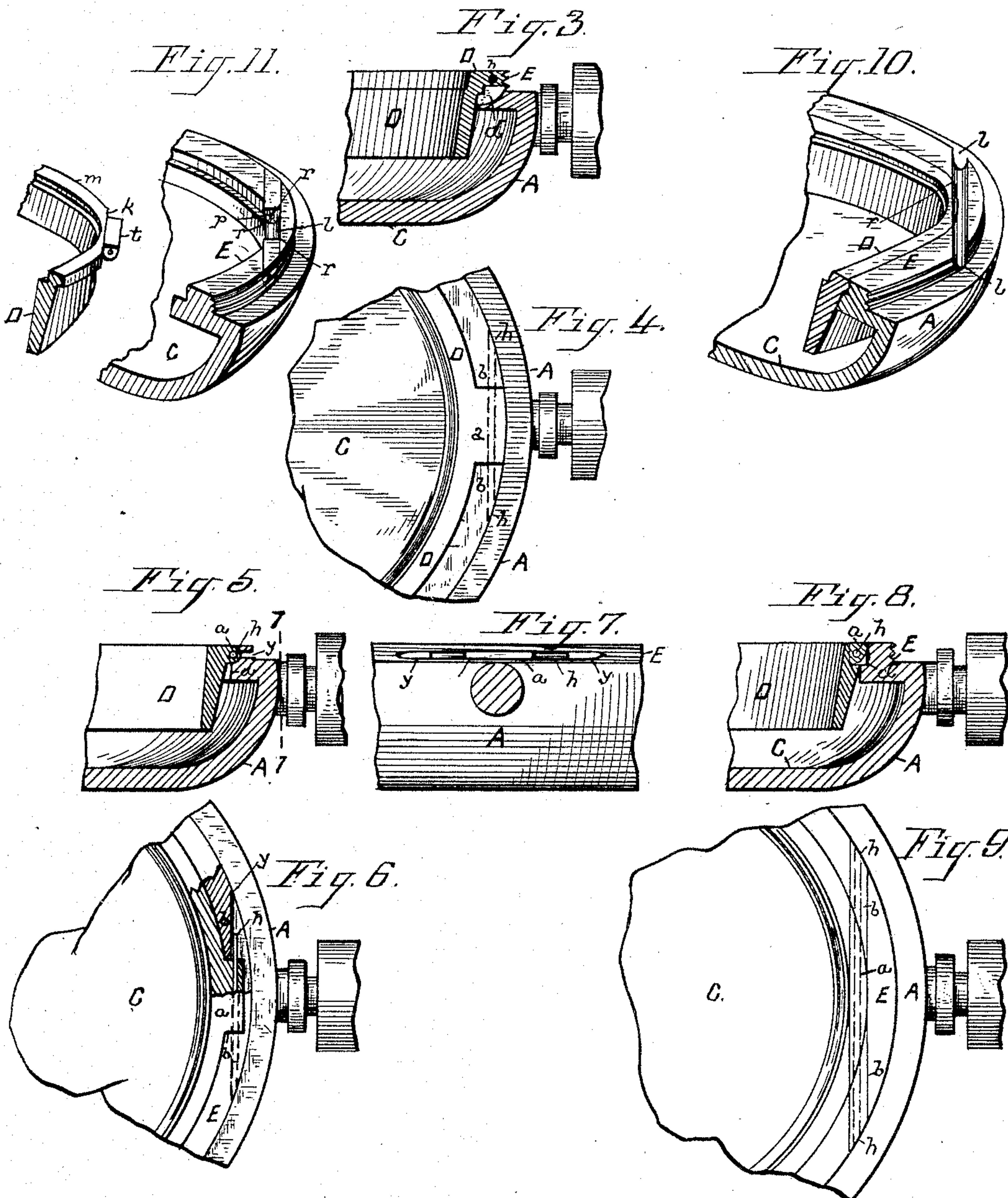
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# UNITED STATES PATENT OFFICE.

DANIEL O'HARA, OF WALTHAM, MASSACHUSETTS.

## WATCH-CASE.

SPECIFICATION forming part of Letters Patent No. 353,706, dated December 7, 1886.

Application filed November 24, 1885. Serial No. 183,887. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL O'HARA, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Watch Cases, of which the following is a full, clear, and exact description.

This invention relates more particularly, although applicable to watch-cases of other construction, to watch-cases in which the movement-ring is hinged or jointed at one side to the case center or shell, and more especially known in the trade as "Fitch watch-cases," and embraced in Letters Patent of the United States issued to Ezra C. Fitch, dated April 22, 1879, No. 214,642.

This invention particularly pertains to the joint or hinge; and it consists, in substance, in the construction of it in two parts, one on the movement-ring and the other on the case center or shell, and either of which parts may be either attached to or in one piece with said movement-ring and said case center or shell, and in such manner that the joint or hinge completed is flush with the upper face at the front of the case center or shell, all substantially as hereinafter described.

In the drawings, all on an enlarged scale, forming a part of this specification, Figure 1 is a central transverse section of a watch-case, showing the movement-ring as jointed or hinged to the case center or shell in accordance with this invention, and showing the pendent knob in side view. Fig. 2 is a face view of the watch-case of Fig. 1, with the crystal and bezel-ring detached. Figs. 3, 5, and 8 are transverse sections, in detail, and at one side of the case center or shell and movement-ring, illustrating modifications in construction of the hinge or joint of this invention. Figs. 4, 6, and 9 are face views of the hinge or joint construction shown in Figs. 3, 5, and 8, respectively, Fig. 6 being also part sectional; and Fig. 7 a cross-section on line 7 7, Fig. 5. Figs. 10 and 11 are views illustrating one method of making the flush hinge or joint of this invention, as hereinafter more particularly described.

In the drawings, A represents the case center or shell, formed as shown, Fig. 1, in one seamless piece of a concave shape, open at one side, the front B, and closed at its other side,

the back C, and all so as to be suitable to receive a watch-movement, carried by a ring, D, which, as shown, is hinged and jointed at one side to a riser, E, surrounding the open front B of the case-center A.

The construction of the case center or shell A, above described, constitutes no part of this invention, and therefore needs no further description herein, it being sufficient to observe that, except as to the features of this invention, the watch-case and movement-ring can be constructed all substantially as described and shown in the Letters Patent before cited, and to which reference is hereby had for a more particular description thereof.

F is the hinge or joint which connects movement-ring D, as shown, to case-center A. This hinge or joint is in two parts, *a* and *b*. The part *a* is on the movement-ring, and the part *b*, Figs. 1 to 9, both inclusive, is on the case-center A, and in either instance they may be made separate from and attached by soldering or in any other suitable manner to the movement-ring or case-center, as the case may be, or made in one piece therewith. The part *a* of hinge on movement-ring B fits in a notch, *f*, of suitable shape to receive it, and which is between the two end portions, *g*, of the part *b* on case-center, and with the part *a* on movement-ring placed in the notch *f* of part *b* on case-center. The two parts *a* and *b* are then connected together by a pintle, *h*, which is passed lengthwise, through the several parts, tangentially to the periphery of the movement-ring, each being bored or otherwise suitably prepared to receive it, and the pintle is made fast or tight in each end portion of the part *b* on case-center, and in the part *a* on movement-ring it is sufficiently free for it (the part *a*) to turn or swing thereon for swinging the movement-ring into and out of the case-center. The case-center in its riser E, and which is the part thereof to which the movement-ring is directly joined, as has been so far particularly described in every instance, is sufficiently cut away—as, for instance, as shown at *d*, Figs. 3 and 8—to permit the movement-ring to be swung on its hinge or joint, as may be desired.

The hinge or joint F, above described, and in every instance as shown in the drawings, and which is the distinguishing feature of this



invention, has its part *a* of the movement-ring and its part *b* of the case center or shell flush and even with the upper face, *x*, of the riser E of case-center, said riser E, Figs. 1 to 9, both inclusive, containing within it and below said upper face both parts *a b* of the hinge or joint F, and also the pintle *h*, joining them.

The flush joint or hinge described may be produced in many ways, as for illustration: in one way, Figs. 10 and 11, by placing the movement-ring in the case-center, and milling a groove, *l*, in the top of the riser E in a line at right angles to a radial line of the movement-ring, but so as to cut away a part of its periphery or edge, *m*, and form a flat portion, *k*, thereon, the whole resulting in a tangential groove in the riser E, preferably with a rounded bottom, and a tangential flat face, *k*, on the movement-ring. The movement-ring is now removed, and the end portions, *p*, of the groove *l* in the riser are each filled with a separate tubular bar, *q*, soldered or otherwise suitably secured therein, and each of these bars at its end within the groove is squared off in lines parallel with each other and with a radial line of the case, and said square ends are inside of each corner or edge *r* of the groove at the inner periphery of the riser, and the movement-ring is provided at its flat face *k* with a corresponding tubular bar, *t*, of suitable length and square ended to fill the space *f* between the ends of said pieces of tubular bar attached to the riser, and to be free to swing therein, turning on the pintle *h*, which is inserted through the bore of the tubular bars secured, as described, to the case-center and the movement-ring, and which bore in all its parts is then coincident. The tubular bar *t*, which is on the movement-ring, is preferably secured by soldering.

For a completed joint or hinge constructed under method just above described see Figs. 1 and 2.

Again, in another way, Figs. 3 and 4, by providing the movement-ring with a tangential and square-ended bar, projecting from it at one side, and cutting a corresponding-shaped notch in the riser E of the watch-case center to receive it, and then with the projection of the movement-ring in the notch of the case, secure the two together, with the pintle *h* passing lengthwise through them, and tangentially, as has been before described.

Again, in another way, by milling, with the movement-ring inserted in the case-center, a groove, *l*, on the face of the riser and a flat face, *k*, on the movement-ring, the same as before described and particularly illustrated, Figs. 10 and 11 of the drawings, then removing the movement-ring and soldering a continuous tubular bar in said groove and across from end to end thereof, and also a corresponding tubular bar on the flat side of the movement-ring and extending its whole length, and then turning the case-shell inside of the riser, making thereby a perfect circle thereof, where the same was crossed by the tubular bar at-

tached, as aforesaid, and also turning off the bar attached to the movement-ring, as stated, so as to make a perfect circle thereof. The two—movement-ring and case-center—thus shaped fit the one within the other, bringing the bore of the tubular bars secured to the movement-ring and case-shell, respectively, in line with each other and in a position to receive the pintle *h* for jointing them, as has been described.

For a completed joint or hinge constructed under the method just above described see Figs. 8 and 9.

Again, in another way, by cutting a notch, *f*, of rectangular shape, partially through the riser E, from the inner toward the outer periphery thereof, and attaching a tubular bar of the same length and width of said notch *f* to the outer periphery of the movement-ring in position to enter and loosely fill said notch, when the movement-ring is placed in position in the case center or shell; and with the movement-ring out of the case-center, a groove, *y*, is milled in the outer upright edge of the riser E, in a direction at right angles to the radius of the case-center and in a line corresponding to the line of direction of the length of the notch *f* to a suitable depth, so that when the movement-ring is placed in the case-center, with its tubular bar in said notch *f*, a pintle, *h*, can be run along said groove and entered into and through the bore of said tubular bar.

For a completed joint or hinge constructed under the method just above described see Figs. 5 and 6.

While this invention has been particularly described and shown in connection with a "Fitch watch-case," as known in the trade—that is, a watch-case having a case center or shell made in one piece with the back—it is to be distinctly understood that this invention is not to be limited thereto.

It is plain to be seen from the description which has been given of this invention that the outward and inward swing of the movement-ring on its hinge or joint enables the watch-movement which is contained therein, in any of the ordinary or other suitable ways, to be swung into and out of position in the watch-case.

As the watch-case is shown in all of the figures of the drawings, the riser E, at the front of the case center or shell, is adapted exteriorly for a bezel-ring, to be screwed thereon; but this bezel-ring, or a cap-plate in place thereof, may be snapped upon the riser, it and the riser being suitably constructed therefor, as well known.

The description of various forms of flush-hinge in this specification has been more for illustration, and not with the intention of making each specifically a part of the invention to be covered hereby. The form specifically selected for this patent is that shown in Figs. 1 and 2, its mode of construction being illustrated in Figs. 10 and 11.

Having thus described my invention, what



I claim, and desire to secure by Letters Patent, is—

1. In a watch-case, in combination, a movement ring or band, D, to receive and surround  
5 and separate from the watch-movement a case center or shell, A, having a riser, E, at its front and bezel or cap attached thereto, and a hinge, F, in parts *a* and *b b*, connected by a pintle, *h*, and the part *a* on movement-ring D,  
10 and the parts *b b* on case-center A, and all the parts flush with front of movement-ring and case-center, substantially as described, for the purpose specified.

2. In a watch-case, in combination, a movement ring or band, D, to receive and surround  
15 and separate from the watch-movement a case

center or shell, A, having a riser, E, at its front and bezel or cap attached thereto, and a hinge, F, in parts *a* and *b b*, each tubular and connected by a pintle, *h*, and the part *a* secured  
20 to a float, *k*, of movement-ring, and the part *b b* in grooves *l* of case-center A, and all the parts flush with front of movement-ring and case-center, substantially as described, for the purpose specified.

25 In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DANIEL O'HARA.

Witnesses:

ALBERT W. BROWN,  
WM. S. BELLOWS.