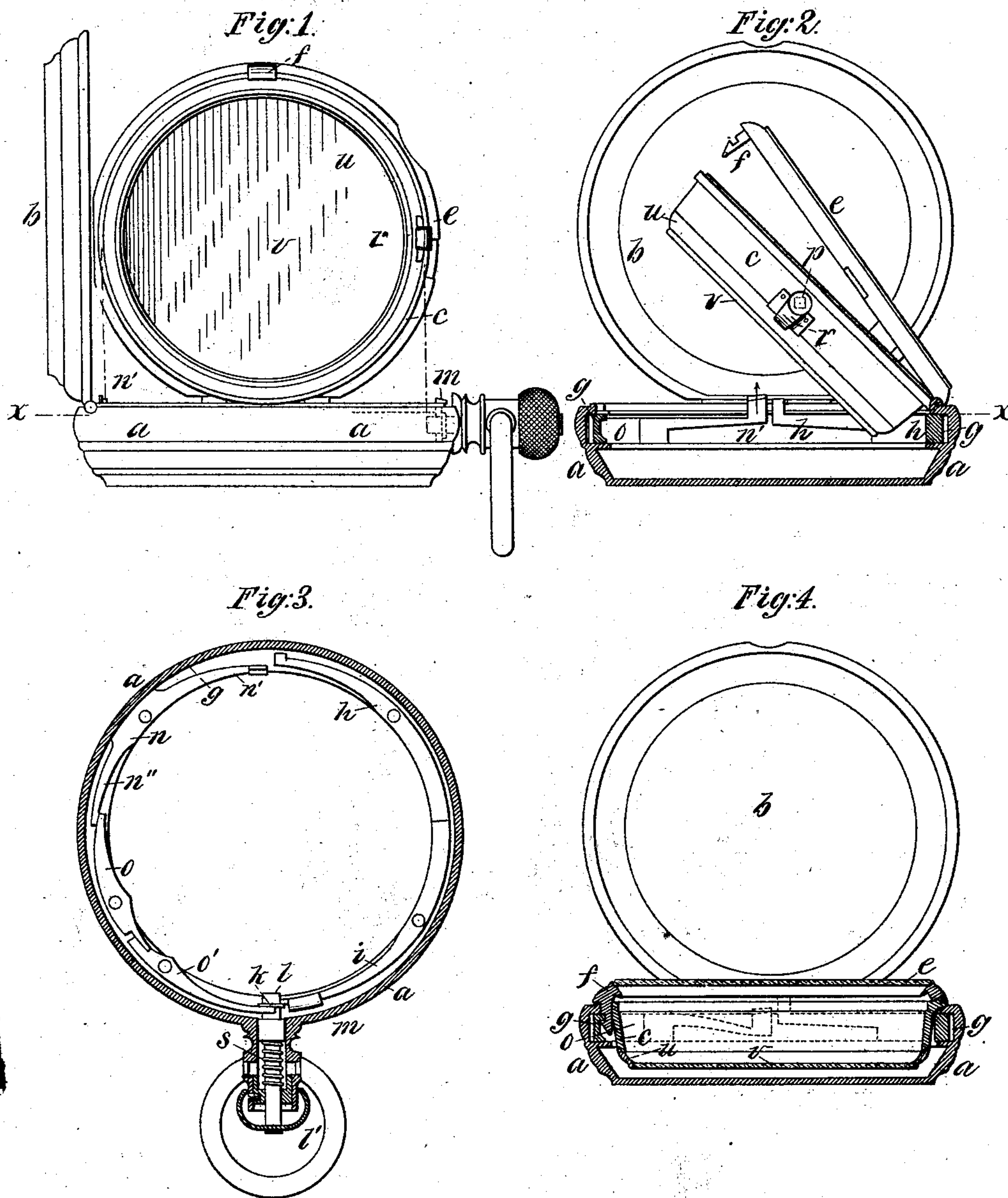


(No Model.)

E. C. FITCH.
WATCH CASE.

No. 277,865.

Patented May 15, 1883.



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UNITED STATES PATENT OFFICE.

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WATCH-CASE.

SPECIFICATION forming part of Letters Patent No. 277,865, dated May 15, 1883.

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To all whom it may concern:

Be it known that I, EZRA C. FITCH, of New York city, New York, have invented certain new and useful Improvements in Watch-Cases, of which the following is a specification.

My present invention relates more especially to that improved type of hunting-case watch patented to me February 17, 1880, No. 224,670, in which the main or back portion of the case is made in one seamless shell without caps or joints, while the movement is accessible from the front only, being held in an outswinging ring, which is hinged in the front opening of the case, over which the usual front cap closes. This form of hunting-case, as fully shown and claimed in the said patent, has the important advantage of being much lighter, cheaper, and simpler than the old constructions, and better protects the movement from exposure to air or to dust or moisture on account of the absence of all caps, openings, or joints at the back of the case, and yet the movement is readily accessible from the front when access to it is desired. Now, my present invention aims to further improve this type of watch-case by rendering the dial and the movement still more accessible and yet better protected, and also to enable the bezel and its crystal to be raised from the dial and the hinged movement-holding ring swung out of the case in a more facile manner than heretofore.

To these ends one feature of my invention consists in employing, in connection with the outswinging movement or movement-holding ring, an ejecting-spring and a retaining-catch, similar to that commonly employed to act on the front cap, so arranged that when the catch is released the spring causes the movement to swing out of the case automatically; and, in connection with the foregoing, another feature consists in arranging the operating-knob on the stem so that when pressed in one way it shall release the usual catch of the lid and allow its spring to throw the lid open, and when pressed in the opposite way shall release the catch of the outswinging movement and allow its spring to swing the same out into its accessible position, whereby the same operating-knob controls both parts. A third feature consists in hinging the bezel to the movement-holding ring or to the case, so that the

bezel and crystal may be easily raised from the dial, when desired, without ever being actually detached from the case.

My improvement also embodies a crystal-holding ring, affixed to the inner or under edge of the movement-holding ring, to cover and protect the under side of the movement, yet render it visible when swung out without exposing it to air, dust, or moisture, and also includes some further minor details, as herein-after fully set forth.

Figure 1 of the drawings herewith presents a side elevation of my improved watch-case with the lid raised and the movement-holding ring swung fully up or out of the case, the under side of the ring being turned toward the observer in full elevation. Fig. 2 is an elevation at right angles to Fig. 1, looking from the stem end of the case, the body of the case being shown in diametrical section, while the movement-holding ring is swung partly out, and the hinged bezel shown raised slightly from the ring. Fig. 3 is a sectional plan on lines *xx*. Fig. 4 is a sectional elevation in the same direction as Fig. 2, but with the movement-ring and its hinged bezel swung into the case, the same being shown in diametrical section.

In the drawings, *a* indicates the main or back portion or body of the case, or, rather, the case proper, which is made, according to my aforesaid Patent 224,670 and my previous Patent No. 214,642, in one continuous simple shell without joints, caps, or perforations, as illustrated. This shell or case is of course open on the front or top to receive the movement, and over this open front the top cap or lid, *b*, closes coincident with the edges of the seamless shell in the usual manner of hunting-watches, as will be understood, and as illustrated in the drawings.

c indicates the movement-holding ring, in which the movement is to be inserted and held in the same manner in which the American movements are held in their cases. This ring is hinged to the margin or edge of the lid *b*, and at a point on its circumference which is at right angles from the stem *d*, as illustrated in the drawings, and claimed in the Patent 224,670, so that the ring, with its contained movement and its attached bezel and

crystal, may be swung into or out of the case, as occasion requires, as illustrated in Figs. 1, 2, and 4. The bezel *e* is not affixed to the movement-ring by snapping thereon, as shown in my former patent, but is hinged to the ring or to the case, or, rather, preferably on the same axis or pintle by which the ring is itself hinged to the case, as shown in Figs. 1, 2, and 4, and at the opposite end to this hinge a tongue, *f*, projects from the bezel, and is adapted to catch or spring over the edge of the ring, as shown well in Figs. 2 and 4, and also in Fig. 1. The bezel is thus securely connected with and fits tightly over the ring, and moves with the ring as it is swung into or out of the case, as seen in Figs. 1 and 4, and also in Fig. 2; and it will be noted that when the ring is swung out the bezel may be easily raised therefrom, as shown in Fig. 2, to uncover and give access to the dial when desired, yet the bezel and its contained crystal will always remain attached to the case, ready to be again instantly closed when desired, instead of being entirely removed and liable to be misplaced, injured, or soiled, as is the case with the usual detachable bezels.

Now, around the interior of the case, near the top, is formed an annular recess or channel, *g*, in which are arranged the springs and catches which control the opening of the cap and of the movement-ring, as shown best in Fig. 3; also, in Figs. 2 and 4. On the right of Fig. 3 is seen the ordinary arrangement of spring and catch for the lid. These consist of two parts, *h i*, the outer or free ends of each part being slender and springy, while their inner meeting ends are rigid and rigidly secured in the recess *g* of the case, as shown best in Fig. 3. The springy end of the part *h*, as seen best in Figs. 2 and 3, bears against the lid *b* near the hinge in the usual manner, and tends to constantly raise or open the lid. The springy end of the part *i* bears against a shoulder or rim, *k*, on the inner end of the stem-winding key *l*, and a sharp-edged projection or catch, *m*, extends from the spring *i* just near the winding-key and rises over the edge of the case, being adapted to engage with a recess in the under side of the lid in the usual manner. Hence, when the lid is shut down, the catch *m* will engage with and hold the same closed; but when the stem-knob *l'* is pressed inward the catch *m* will be retracted and the spring *h* will throw the lid up or open in the well-known manner. Now, if the knob *l'* be moved in the opposite direction to that just described—that is, pulled outward—the movement-holding ring will be released from the case and automatically thrown into its outswinging position, as in Fig. 1, to allow free access to the movement, which forms one feature of my invention. This is effected by the springs and catches arranged in the recess *g* on the left of the case, as seen best in Fig. 3. *n* is a steel spring, which is fixed at about its middle in the recess *g*, and is rigid at this part; but its

end *n'* is slender and springy, as seen best in Fig. 2, where it will be seen that this end is turned upward and tends constantly to spring upward in the direction of the arrow. Now, the other end, *n*, of the spring *n* is also slender and springy, and bears against the outer side of the long arm of a small curved lever, *o*, also pivoted in the recess *g*, while the short arm of this lever *o* bears against the short arm of a second lever, *o'*, whose long arm bears against the outer side of the shoulder *m* on the stem-key *l*, as fully shown in Fig. 3.

It will now be understood that when the movement-ring is swung into the case (see Figs. 2 and 4) the lipped edge of the ring will bear upon the upturned edge of the spring *n'* and bend the same downward, thus flexing the spring, and the notched tongue *f* will now catch in a recess on the end of the long arm of the lever *o*, as seen in Fig. 4, which arm is continuously pressed out into its engaging position by the spring *n''*. The movement-ring will thus be securely held in the case, as seen in Fig. 4, until the stem-knob *l'* is pulled out, when the levers *o o'* will be moved, the catch-lever *o* withdrawn from the tongue *f*, and the flexed spring *n'* will now of course react and throw the ring up out of the case in its outswung position, as in Fig. 1. It will thus be seen that the stem-winding knob and key *l l'* not only serves to wind the movement when rotated, and releases the lid-catch and causes the lid to open when pressed inward, as usual, but it possesses the additional function of throwing out the movement-ring when pulled outward, so that the one part thus accomplishes three actions, thereby conducing greatly to the simplicity, convenience, and perfection of the watch.

The movement-ring is of course perforated with a small hole, *p*, as shown in Fig. 2, in line with the stem, to allow the winding-stud of the movement to project out and engage with the winding-key *l*, and below this hole a projection, *r*, is fixed on the ring to underlie the lower half of the winding-key, as seen best in Fig. 2. This projection is in shape similar to one-half of a small journal-box, and projects from the ring as far as the end of the winding-stud, or a little farther, and is inclined or cam-shaped below the key, as represented in Figs. 1 and 2. Now, the winding-key *l*, when at rest, projects sufficiently far into the case so that its hollow end lies in the path of the inclined projection *r*, (see dotted lines in Fig. 1,) and when the movement-ring is swung into the case the inclined projection contacts with the end of the key and presses it out till the ring arrives in its correct position in the case, when the projection *r* rides under the winding-key, and the key then springs into engagement with the winding-stud, as will be readily understood. The winding-key is provided with the usual spring, *s*, within the stem, arranged as shown in Fig. 3, tending to constantly press the key into its position of engagement; but

this spring *s* is not absolutely necessary in my case, as the spring *n''*, with the levers *o o'*, tends to constantly press the key inward, as will be understood, and hence the usual spring, *s*, may be dispensed with, if desired, which is an advantage.

The remaining features of invention consist in a crystal, *v*, held in a removable ring or bezel, *u*, on the inner edge of the outswinging ring, to cover the back of the movement, (see Figs. 1, 2, and 3,) which bezel is snapped or screwed onto the edge of the ring, preferably the former, as shown in Fig. 3. This crystal thus covers the movement and protects it from dust or moisture, and yet renders it freely visible when the ring is swung out, as in Fig. 1, and of course, being attached to the ring, it moves with the ring as it is swung in or out, and remains as a constant protection to the movement.

When the watch-movement is swung out of the case it is usually for the purpose merely of looking at the movement or showing it to others, which is frequently done; whereas actual access to the movement for regulating it or otherwise is comparatively seldom required, and for the former purpose the crystal attached to the movement-ring serves to fully display the movement, yet protects it from all unnecessary exposure. This is an important matter in the case of fine movements, which have been frequently injured, when carelessly exposed, by a drop of rain from the hat of the thoughtless owner or sometimes by a drop of perspiration from the face, and very often the moisture from the hands and from the breath injures or tarnishes the works if exposed thereto for even a comparatively short time. By the device described, however, the movement is completely protected from all such possible injuries, yet is at the same time displayed, and when access to the movement is required to adjust the regulator, or otherwise, it is easily accomplished by simply removing the bezel, which can be again easily replaced. A crystal fixed over the back of a fixed movement has of course been used; but in my case the crystal is removably affixed to an outswinging movement-ring, which is a novel and advantageous arrangement of parts, as will be readily appreciated.

What I claim as my invention is—

1. The combination, with an inclosing watch-case, of a hinged movement or movement-holding ring arranged to swing into and out of said case, a spring arranged to eject or swing said movement or ring out of the case, a top cap or lid arranged to close down over said movement and case, and a spring to raise the same, together with a stem projecting from said case, and an operating-key extending through the stem and controlling two catches,

one of which is arranged to hold the lid down, while the other is arranged to hold the outswinging movement in the case, so organized that a motion of the key in one direction releases the catch of the lid and allows the lid to spring open, while a motion of the key in the opposite direction will release the catch of the movement and allow the same to spring or swing out of the case, substantially as herein set forth.

2. The combination, with an inclosing watch-case continuous or closed at the back and open in the front and with an outswinging movement-ring hinged at the front edge thereof, and adapted to swing into and out of the case, of a crystal-holding bezel hinged at the edge of the case at or nearly coincident with the hinge of the said ring, and adapted to be closed down upon or be swung up from said ring, substantially as herein shown and described.

3. The combination, with an inclosing watch-case, of an outswinging movement-holding ring hinged to the case and adapted to swing into and out of the same, and of a crystal-holding bezel hinged over the ring, and on the same point or axis which hinges the said ring to the case, and adapted to close over and move with said ring, substantially as herein shown and described.

4. In combination with an inclosing watch-case, the hinged outswinging ring and hinged bezel, having a catch-tongue adapted to spring or catch over the edge of the ring, substantially as herein shown and described.

5. The combination, with a stem-winding watch-case, of a stem-winding key and a lever-spring, *n*, disposed circumferentially in the interior of the case, and arranged to exert its pressure inwardly on said key to keep it pressed inward in its normal and engaging position, substantially as and for the purpose set forth.

6. The combination, with a stem-winding watch-case, its stem-winding key, and an outswinging movement, of the spring *n*, arranged to project the key, with the coupled levers *o o'*, arranged in the circumference of the case, with one of said levers engaged with the key and the other serving as a catch to engage or disengage the outswinging movement, substantially as herein shown and described.

7. The combination, with an inclosing watch-case continuous or closed at the back and open on the front, of an outswinging movement-holding ring hinged to swing into and out of the case, and a removable crystal-holding ring or bezel attached over the inner or under side of said movement-holding ring, substantially as herein shown and described.

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