No. 896,633. PATENTED AUG. 18, 1908.

W. H. FITZ GERALD.

WATCHCASE.

APPLICATION FILED NOV. 23, 1907.

3 SHEETS—SHEET 1.

Fig. 5.

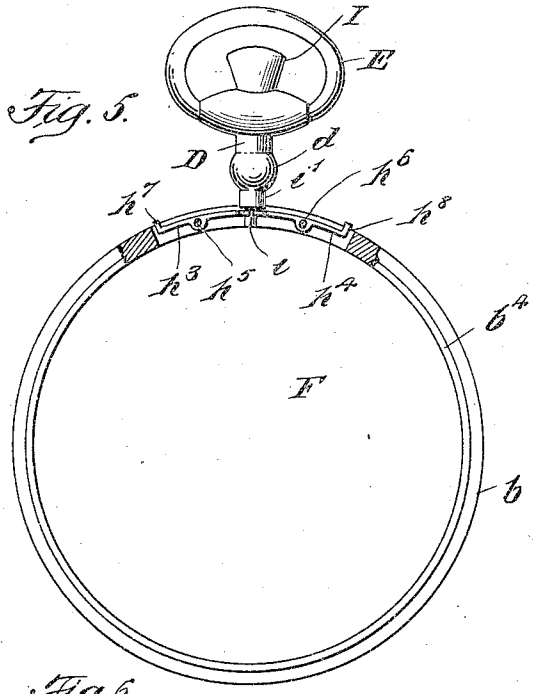


Fig. 6.

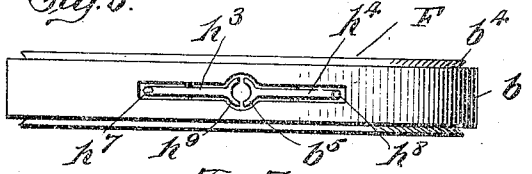


Fig. 7.

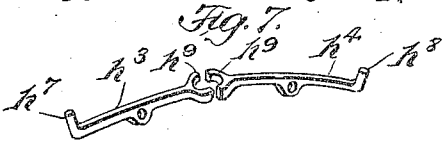


Fig. 8.

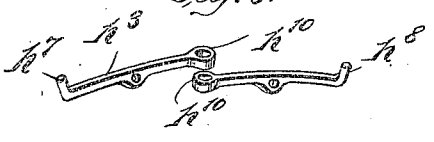


Fig. 9.

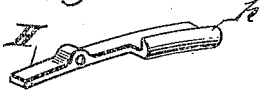
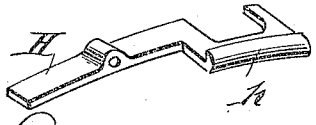


Fig. 10



WITNESSES

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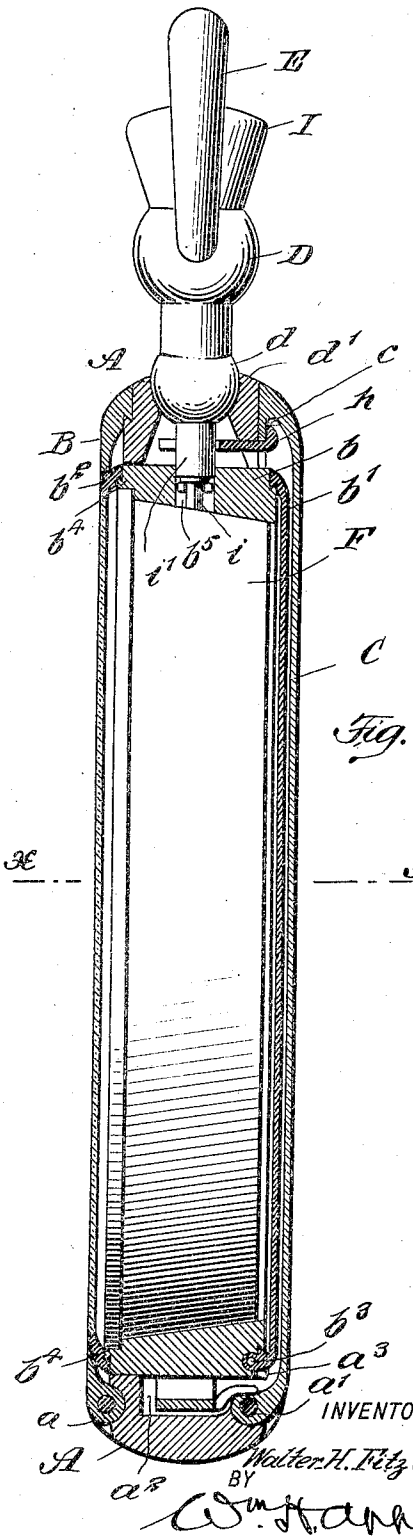


Fig. 1.

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3 SHEETS—SHEET 2.

Fig. 2.

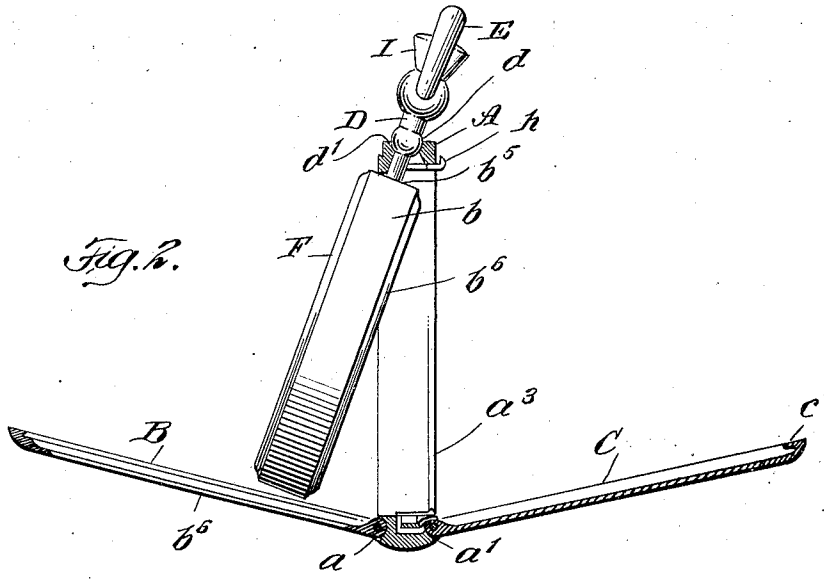


Fig. 3.

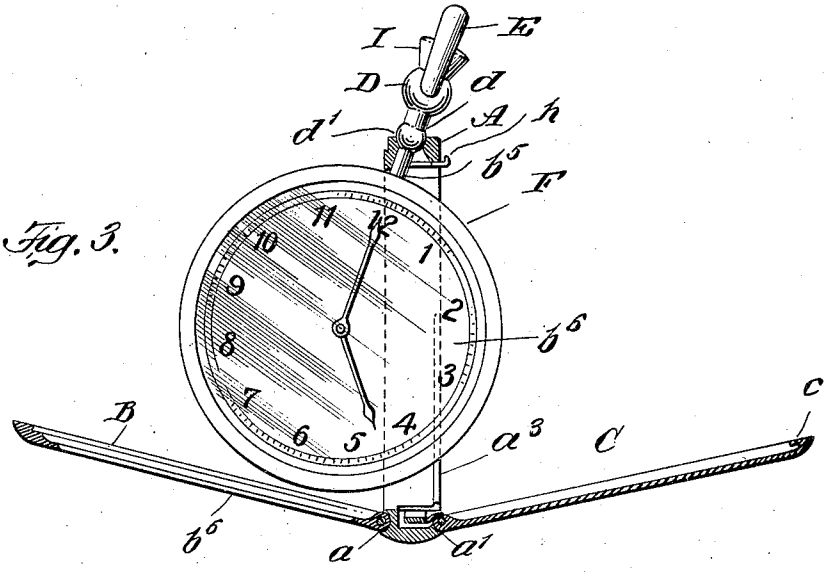
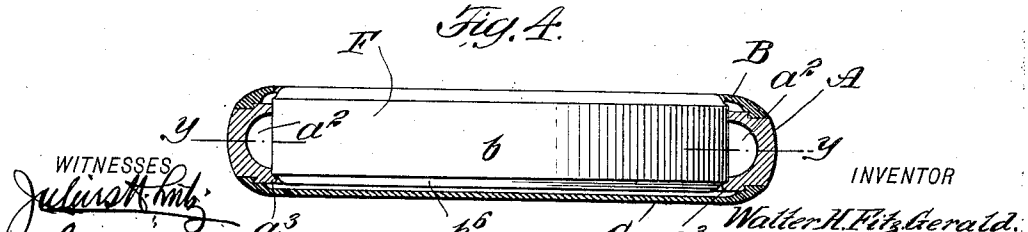


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 11.

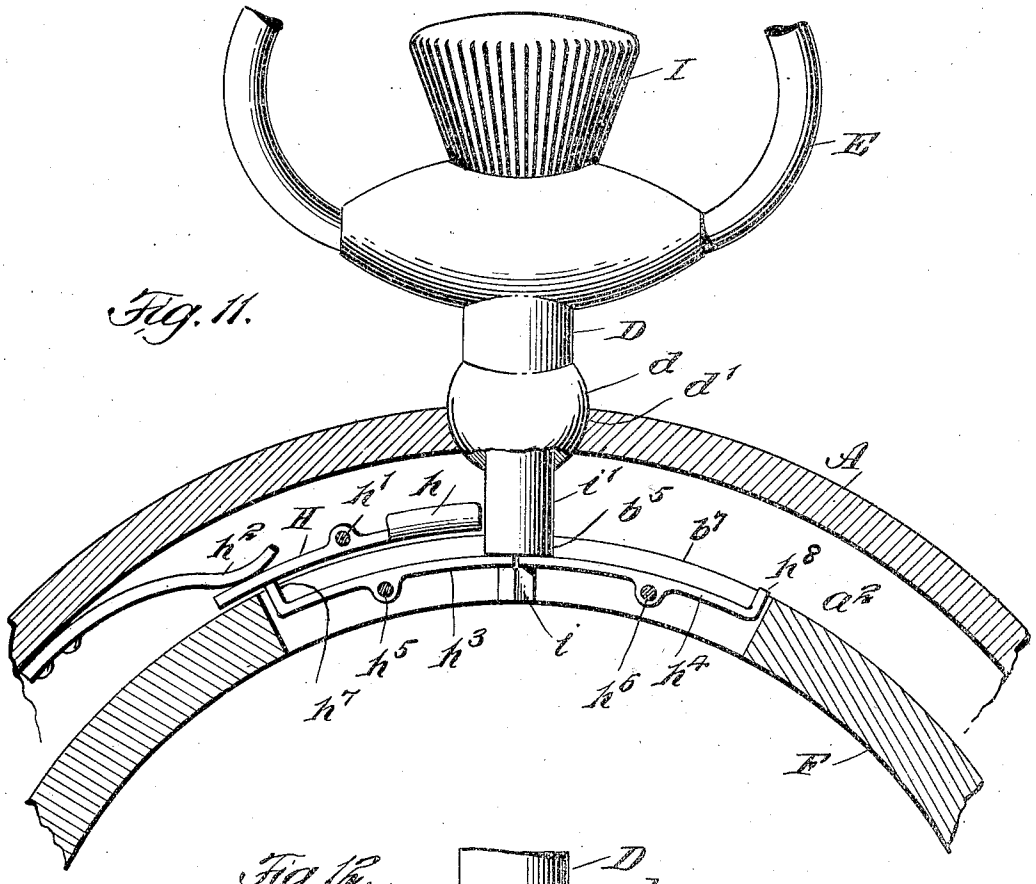
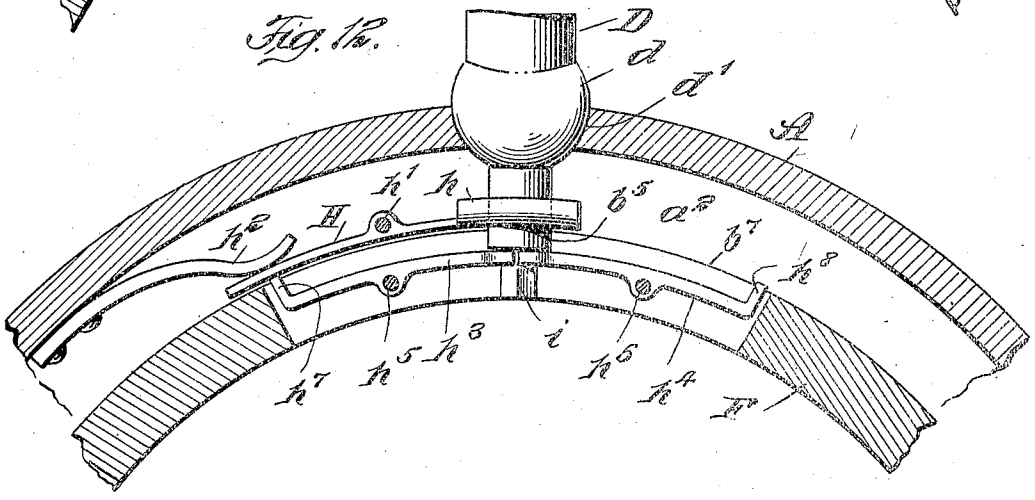


Fig. 12.



WITNESSES

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UNITED STATES PATENT OFFICE.

WALTER H. FITZ GERALD, OF NEW YORK, N. Y., ASSIGNOR OF ONE-FOURTH TO BENJAMIN A. BLOCH, OF BROOKLYN, NEW YORK, AND ONE-FOURTH TO EMANUEL M. BLOCH, OF SAG HARBOR, NEW YORK.

WATCHCASE.

No. 896,633. Specification of Letters Patent. Patented Aug. 18, 1908.

Application filed November 23, 1907. Serial No. 403,534.

To all whom it may concern:

Be it known that I, WALTER H. FITZ GERALD, a citizen of the United States, and a resident of the borough of Brooklyn, in the city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Watch-cases, of which the following is a specification.

Although included within the general class of watch cases, my invention has reference more particularly to that form of such device which is known to the art as a "magic watch case", or to that form thereof in which the case, with the watch movement therein, may be converted into either what is called an "open face watch", or a "hunting case watch", as may be desired. In watch cases of this class as ordinarily constructed, the watch movement is, as is well known, inclosed within an "inner case", so called, with one of the sides of the latter, as, for instance, the front, provided with a glass crystal, and the other side thereof, or back, equipped with a closed cover, which is usually of the same material as the outer case, with its outer surface ornamented or fashioned to conform to the general design of the outer case in which the inner case, with the watch movement inclosed within it, is pivotally mounted. With the inner case thus constructed and mounted, and with the outer case provided with the usual "center", with a closed back or cover, and with an open face or bezel, the conversion of the watch into either an open face watch, or a hunting case watch, is effected by simply rotating the inner case on its pivotal support within the outer case, to the proper extent to bring the side carrying the crystal either opposite the bezel or the closed back or cover of the outer case, as one or the other of these forms of case is required. With watch cases of this class it is desirable to make the cases as thin as possible, and at the same time to make it symmetrical with respect to a plane passing through the center of the outer case mid-way of and parallel to the front and back edges thereof. With magic cases of this class as ordinarily constructed, such symmetry is impossible when the inner case, with the watch movement therein, is pivoted in such plane, unless provisions are made for bodily moving such inner case laterally with respect thereto, as the side of the inner case carrying the crystal will protrude but slightly through the opening in the bezel, when brought opposite to it, while the closed back of such inner case will rest within the cover of the outer case, causing the side of the case covering the back or cover of the inner case to project farther than the crystal, and thereby make the case "lop-sided" as it is termed on that side, which is objectionable. To obviate this last mentioned objection therefore, it has been essayed to elongate the openings in the inner case which receives the pivots upon which it may be turned, whereby, when such inner case is rotated in the outer case to bring either one or the other of its sides opposite to either the bezel or the closed back or cover of the outer case, this inner case, with the watch movement mounted therein, may be slightly moved laterally through such outer center ring in one direction or the other upon its supporting pivots, and the symmetry of the parts thereby maintained without any lost space between the inner case and the outer case or cover being required. This construction, however, while providing a watch case which is symmetrical with respect to a plane passing through the center of the outer case at equal distances from and parallel to its front and back, when such inner case is turned to form either an open face or hunting case watch, is found defective in practice, principally because of the fact that, in addition to the elongated pivot receiving holes in the periphery of the inner case, permitting of the entrance of dust and dirt to the watch movement, the holding of the inner case in its adjusted positions, has had to be effected by contact of the bezel and back or cover therewith, supplemented by the catch through which such back or cover is locked in a closed position.

It is true that efforts have been made to hold the inner case, with the movement, in its proper adjusted positions within the ring or center of the outer case, by a spring catch on the center of the outer case engaging with a groove or depression in the periphery of the inner case, but this, in practice, has not at all times proved satisfactory, and care has been required in changing the case from a hunting case to an open faced one, otherwise the inner case would not be moved laterally through the center of the outer case sufficiently far to permit of the back or cover of the outer case being closed because of the protrusion of the

inner case through the center of the outer case toward it. To obviate these various objections, and provide a magic case, which, while precluding the entrance of all dust and other objectional matters to the watch movement, shall, at the same time, not only cheapen the cost of manufacture and permit of the ready back and forth rotary motion of the inner case, with the watch movement, within the center of the outer case, when a change from an open face to a hunting case is desired, and vice versa, but also provide for firmly holding such inner case, with the watch movement, in adjusted position, while maintaining the symmetrical relationship of the various parts of the case, whether its face is open or closed, are the objects of my invention.

To these ends therefore, the invention consists, first, in the means for rotatively mounting the inner case in the outer case, whereby to permit of the changing of the watch from an open face to a hunting case one and vice versa; second, in the means for firmly holding the inner case in such position in the outer case as to maintain the symmetry of the parts whether used as an open face or hunting case; third, in the means for holding the back or cover of the outer case in a closed position in whichever of the two ways the inner case may be adjusted, and fourth, in various other constructions and combinations of parts, all as will hereinafter more fully appear.

Referring to the accompanying drawings, which form a part of this specification, Figure 1, is a section of a watch case constructed in accordance with my invention, taken in a plane passing transversely through both its axis and through the axis of the pendant, with the pendant and suspending ring shown in side elevation; Fig. 2, a like sectional elevation of the case, with the bezel and back or cover of the outer case swung outward into their respective open positions, and the inner case swung to one side of the axis of its pivot, with such pivot, pendant, and suspending ring shown in elevation; Fig. 3, a transverse sectional elevation of the case similar to Fig. 1, but showing the inner case rotated through an arc of ninety degrees; Fig. 4, a transverse sectional elevation of the case taken in the plane x x of Fig. 1, and looking in the direction of the arrow in that figure; Fig. 5, a front elevation of the ring or body of the inner or movement holding case detached, showing the pendant and suspending ring, with a part of such ring broken away; Fig. 6, an edge view of such ring or body similarly detached, with the crystal holding bezel and back removed, showing also the levers by which the back or cover-holding catch of the outer case is operated; Fig. 7, a perspective view of the levers for operating the back or cover-holding catch of the outer case, detached; Fig. 8, a similar perspective view of a slightly modified form of such levers also detached; Fig. 9, a perspective view of the back or cover-holding catch of the outer case, detached; Fig. 10, a similar perspective view of a slightly modified form of such back or cover holding catch, likewise detached; Fig. 11, a fragmentary view in sections of portions of the outer and inner cases, showing also the pendant, the sustaining ring, the crown, and the parts for operating the back or cover-holding catch of the outer case from the crown in side elevation, and Fig. 12, a similar fragmentary view of portion of the outer and inner cases, showing also a portion of the pendant and the back or cover-holding catch of a slightly modified construction, with the parts for operating said catch from the crown in side elevation.

In all the figures, like letters of reference are employed to designate corresponding parts.

A indicates the "center" of the outer case, and B and C indicate respectively the bezel and back or cover, which are hinged to the opposite edges of the center by hinges a and a^1, whereby to be capable of being swung inward against such edges, and secured in those positions, as shown in Fig. 1, or outward away from the same, as shown in Figs. 2 and 3. In the construction of these several parts, any of the ordinary or well known forms may be adopted, with certain minor additions to the center, which will be hereinafter pointed out, and with its interior provided with a circumferential channel a^2, extending around within the same, and its exterior equipped with the usual pendant D, projecting outwardly therefrom and carrying at or near its outer end a suspending ring E. Arranged within this outer case is an inner case F, which receives and incloses the watch movement, and which, in turn, is provided with a body or ring b, and with both a back or cover b^1, and a crystal-carrying bezel b^2, of which the back b^1 is hinged to one edge of the body or ring b in such a manner as to be swung inward and secured against one edge of the latter, or outward away from the same, by a hinge b^3, while the bezel b^2 is detachably secured to the opposite edge thereof by being sprung over an outwardly extending circumferential flange b^4, of a dove-tail form in cross-section, constructed around it. As thus arranged, this inner case is secured to the inner end of the pendant D, which, instead of being fixedly secured to the center of the outer case, is movably mounted therein by a ball and socket joint, and extending inward through the walls of such center and into an opening b^5 formed in the body or ring b of the inner case, is fixedly secured therein, with the ball d of the joint formed upon the pendant D, and the socket d^1, in which the

ball is arranged to gyrate and rotate, formed in the walls of the center A, as shown. With the inner case thus arranged within the outer case, its rotation therein to bring one or the other of its sides opposite the side of the outer case carrying the bezel B, or toward the side of the latter carrying the closed back or cover C, is effected by tilting it upward on the ball and socket joint d, d^1, above the center A, as shown, for instance, in Fig. 2, then rotating it in the required direction on such ball and socket joint, as shown in Fig. 3, to the proper extent, and then tilting it backward into its normal position within such center, in which position it will be firmly supported until again tilted upward in the outer case for another rotation or reversal of its sides, or otherwise.

For supporting the inner case in the outer case, when occupying its normal position therein, and for maintaining the symmetry of the completed case, I make use of an inwardly extending flange or ledge a^3, upon which the inner case rests, and which is so arranged around the interior of the center A as to cause the side of the inner case that is disposed opposite the side of the outer case occupied by the bezel B, to project to the same distance through such bezel from a line y y (see Fig. 4), passing through the center A, mid-way of, and parallel to, the edges of the latter, as does the outer surface of the closed back or cover A project therefrom, when such bezel and back or cover are in their closed position. By this arrangement, as will be seen, not only is the inner case firmly seated within the outer case, when in its normal position, but the exact symmetry of the opposite sides of the completed case insured, without requiring any bodily sliding of the inner case laterally through the ring A to accomplish that result, as has heretofore been necessary; and, in order to permit of the unobstructed rotation of the inner case within the center A, when it is desired to convert the complete case into either an open face or a hunting case structure, the inwardly extending flange a^3, instead of extending entirely around the interior of the center A, it extends only throughout a portion thereof, and is omitted therefrom at the part adjacent to that occupied by the ball and socket joint, as shown more particularly in Figs. 2 and 3.

While the support of the inner case within the outer case is thus effected, the locking of the back or cover C, when in its closed position, is accomplished by a catch h, which engages with an over-turned flange c formed around the interior of the back or cover C. This catch h is preferably formed on the end of the lever H, which is pivoted on a pin h^1 in the circumferential channel a^2, formed around the interior of the center A, and is normally held with the catch h pressed outward into its operative position by a spring h^2, likewise secured within such channel and pressing against the end of the lever opposite to that upon which the catch h is located. In some cases the catch h will be wholly at one side of the pendant D, and in that case its construction will be the same as that shown in Fig. 9. In other instances, on the other hand, this catch will be so constructed as to operate on both sides of such pendant, and in those cases its construction will be substantially as shown in Fig. 10, and either of these forms may be adopted as may be preferred, and the parts operated with equal efficiency. The holding of the back or cover C in its closed position being thus effected, the lever H is operated to withdraw the catch h from engagement with the flange c, when it is desired to release the back or cover to permit of the latter being opened or swung outward upon its hinge, from the crown I, through the intervention of the winding stem i and coöperating levers h^3 and h^4. Of these, the winding stem i, extending downward through the pendant D, and, adapted to engage at its lower end with the winding mechanism of the watch, is provided with a collar i^1 fixedly secured thereto, while the levers h^3 and h^4 extend outward from such winding stem in opposite directions, and are respectively pivoted, by pivot pins h^5 and h^6, in a suitable chamber d^7 formed in the body or ring b of the inner case, with their respective outer ends h^7 and h^8 bent upward, whereby to engage with the under side of the outer end of the lever H, and their inner ends extending inward beneath the collar i^1 upon the winding stem i, as shown. As thus arranged provision is made for releasing the catch h from engagement with the flange c on the back or cover C in whichever way the inner case may be adjusted within the outer case, whenever the crown I is depressed and the collar i^1 or the winding stem i is forced downward against the inner end of such levers, the lever h^3 serving to release such catch from the flange c on the back or cover C when the inner case is turned so as to bring the crystal b^6 toward the side occupied by the bezel B, and the lever h^4 performing the same function when such crystal is turned so as to be opposite the back or cover C. In some instances these levers h^3 and h^4 will be so constructed that their inner ends will come opposite to each other, and, when so constructed, the opening through which the winding stem i will pass will be formed in each in the shape of a semi-circle, as shown in Fig. 7, while in other cases the inner ends of these levers will over-lap, as shown in Fig. 8, and when thus constructed the hole for the passage of this stem will be formed as a complete circle extending downward through each. By this arrangement the catch h, in connection with the oppositely arranged levers h^3 and h^4 and the parts coöperating

therewith, provision is made by which the back or cover C may be released from its locked condition, whenever it is desired to swing it outward on its hinge, in whichever of the two positions the inner case may be adjusted.

With the parts constructed and organized as above explained, a magic watch case is produced in which, not only may its thickness be reduced to the minimum and the structure greatly simplified, but provisions made for releasing the back or cover from its locked condition, whether used as an open face case or as a hunting case, and the symmetry of its outlines maintained.

Although in the foregoing I have described the best means contemplated by me for carrying my invention into practice, I wish it distinctly understood that I do not limit myself thereto, as it is obvious that the same may be modified in various ways without departing from the spirit of the invention, and that instead of the center, the bezel, and the back or cover of the outer case being of the ordinary or well known forms and designs, they may be of any other approved construction and design that will answer the same objects and purposes.

Having now described my invention and specified certain of the ways in which it is or may be carried into effect, I claim and desire to secure by Letters Patent of the United States,—

1. A magic watch case, comprising an outer case, and an inner case mounted therein by a universal joint, whereby the inner case may be swung upward out of the outer case upon such universal joint and be rotated thereon while the inner case is thus raised above the outer case, substantially as described.

2. The combination, with an outer case of a watch case, of an inner case, and a watch case pendant mounted in such outer case by a ball and socket joint and secured to and supporting at its inner end such inner case, whereby through such pendant the inner case may be tilted upward in the outer case and rotated to reverse its sides therein, substantially as described.

3. The combination, with the outer case of a watch case having a bezel on one side and a closed back or cover on the other, and a pendant supported therein by a universal joint, of an inner case likewise equipped with a bezel on one side and a closed back on the other arranged in such outer case and fixedly secured to the inner end of the pendant, whereby the inner case may be swung upward out of the outer case and rotated to bring either its bezel or its closed back opposite the bezel on the outer case as may be desired, substantially as described.

4. The combination, with the outer case of a watch case, comprising a center, a bezel, and a closed back or cover, with the center provided with a circumferentially arranged inwardly extending flange or ledge, and a pendant secured to such case by a ball and socket joint, of an inner case arranged in such outer case and supported upon the said flange or ledge, substantially as described.

5. The combination, with the outer case comprising a center, and a back or cover, a catch for holding such back or cover locked to the center, an inner case arranged within the outer case, and a spring for holding the catch in operative position, of a lever pivoted in the inner case and coöperating with the catch, a crown, and an intermediate winding stem extending from such crown and engaging with such lever, whereby, when the crown is depressed the catch is released from engagement with the back or cover to permit of such back or cover being swung outwardly on its hinge, substantially as described.

6. The combination, with the outer case of a watch case comprising a center, and a hinged back or cover, a lever pivoted in such center and provided at one end with a catch for holding the back or cover locked against the edge of the center, and a spring for holding such catch in operative position, of a rotatable inner case arranged within the outer case, outwardly arranged levers pivoted within the inner case and having the outer end of each adapted to contact with the outer end of the lever carrying the catch, a pendant mounted in such outer case by a ball and socket joint, a crown arranged in such pendant, and a winding stem extending downward from such crown through the pendant and engaging at its lower end with the inner end of the outwardly extending levers in the inner case, whereby the back or cover may be locked to the edge of the center of the outer case and released therefrom to permit of it being swung outward upon its hinge, in whichever of the two positions the inner case may be adjusted, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses this 18th day of November, 1907.

WALTER H. FITZ GERALD.

Witnesses:

BENJAMIN A. BLOCH,

WM. H. APPLETON.