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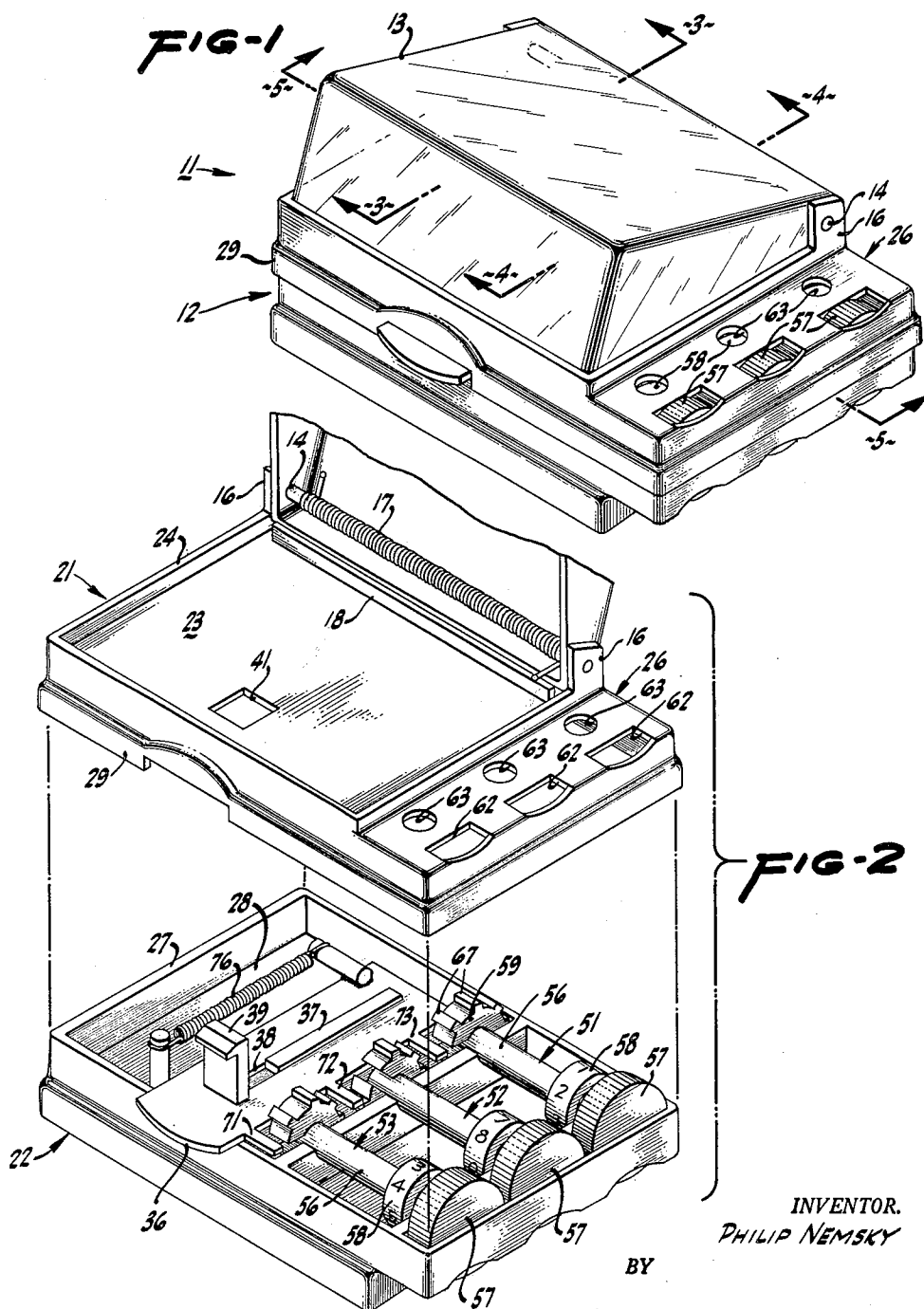
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WATCH CASE WITH INTEGRAL LOCK

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2 Sheets-Sheet 1



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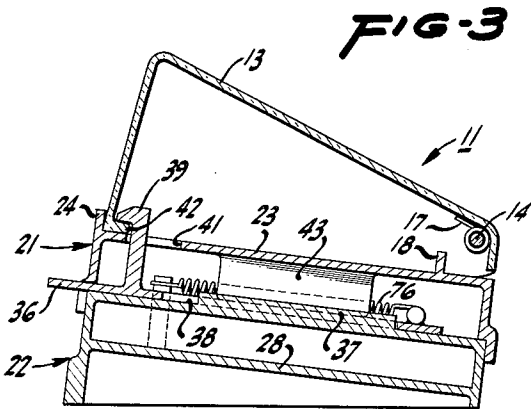
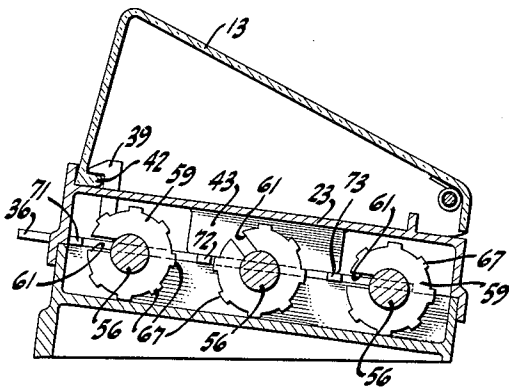
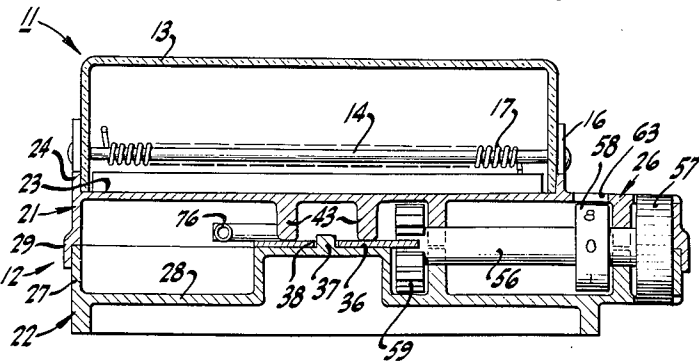
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WATCH CASE WITH INTEGRAL LOCK
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4 Claims. (Cl. 206—45.34)

The present invention relates to an improved case or container for a watch, or the like, and adapted for the display of such items, as well as for the safekeeping of same.

There is provided by the present invention an improved container or case adapted to receive items such as a watch, jewelry, or the like, for the advertising display of same in such as a show counter of a jewelry store. The watch case, as same is hereinafter denominated, is furthermore provided with locking means of a simplified and positive-acting nature, so that items disposed within the case may be stored safely when not in use. The invention hereof is adapted to accompany a watch, or like item, in the sale thereof, so that the purchaser is then provided with a locking container for the storage of the item so purchased. Such a locked container is advantageous in preventing children, for example, from handling precious or delicate items when the latter are not in use. With the foregoing utility in mind, it will be appreciated that low cost of the container is a prime requisite for its economic feasibility. In this respect, the present invention is highly advantageous in being well adapted to be formed substantially entirely of plastic, which may be quite inexpensively formed and fabricated so as to materially enhance the applicability of the container. Not only may the container enclosure be formed of plastic, but furthermore, the entire locking means are likewise adapted for formation from plastic or other inexpensive materials.

The dual function of display and safe storage is herein achieved through the provision of a transparent cover, or top portion for the container of the invention, to provide individualized sales packages of pleasing and practical appearance, and also the provision of an opaque base within which is housed the locking mechanism for the container. Minimum size is of great importance in accomplishment of the functions and objects hereof, and such is attained by the utilization of a particular physical configuration, wherein the locking mechanism is minimized as to vertical dimensions. The entire case hereof is slightly larger than conventional plastic boxes employed to house watches or other types of jewelry in the shipping and display of same. Of particular advantage in connection herewith is the utilization of combination locking means, wherein no key or external operating member is required to open the container. It is only necessary for the owner or operator to have prior knowledge of the combination to open the container. All of the foregoing is accomplished with a marked simplicity of structure to thereby enhance the practicability and longevity of the container hereof. Furthermore, this simplicity is highly advantageous in connection with the minimization of manufacturing costs, and it is, in fact, possible to manufacture the container hereof for a few cents, so that it may be truly termed a "bonus" item, the cost of which may be incorporated in the sales price of the item contained therein without materially affecting the total necessary sale price.

It is an object of the present invention to provide an improved locking watch case, adapted for construction substantially entirely from low-cost materials.

It is another object of the present invention to provide a locking container incorporating a transparent showcase and employing combination locking means which are hidden from view.

It is yet another object of the present invention to pro-

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vide a container for jewelry, and the like, having a transparent compartment for the display of contents and combination locking means for such compartment, while yet maintaining a minimum exterior dimension of the container.

Various other possible objects and advantages of the present invention will become apparent to those skilled in the art from the following description of a single, preferred embodiment of this invention. It is not, however, intended to limit the present invention by the terms of the following description, but instead, reference is made to the appended claims for a precise delineation of the true scope of this invention.

The invention is illustrated as to a single, preferred embodiment thereof in the accompanying drawings, wherein:

FIG. 1 is a perspective view of the watch case of the present invention;

FIG. 2 is an exploded view in perspective of the watch case of FIG. 1;

FIG. 3 is a transverse, sectional view taken in the plane 3—3 of FIG. 1;

FIG. 4 is a sectional view taken in the plane 4—4 of FIG. 1; and

FIG. 5 is a longitudinal, sectional view taken in the plane 5—5 of FIG. 1.

Considering now the details of the present invention, as illustrated in the accompanying drawings, reference is first made to FIGS. 1 and 2 of the drawings. The container 11 includes a base housing 12, and a transparent top member 13. This top member 13 is preferably formed of a transparent Plexiglas, or the like, with generally vertical sides and a connecting top so as to form such as an inverted box with an open bottom, and consequently, to define with the top of the base housing a compartment for containing a watch, jewelry, or other items to be displayed. The top member 13 is hinged upon the base housing by means of an elongated rod 14, extending longitudinally through the side walls of the top at the back of such walls, and thence through upstanding lugs 16 upon the base housing. A spiral spring 17 about the hinge rod 14 provides for spring-loading the top member so that it will normally remain in open position. One end of the spring extends outwardly in contact with the top member, and the other end of the spring extends outwardly in the opposite direction into contact with the base housing, as for example, upon a small vertical wall 18 atop same adjacent the rear edge of the housing. Rod 14 may be maintained in position by upsetting the extreme ends thereof exteriorly of the lugs 16 so that the rod is fixed in position, and furthermore, this rod 14 may preferably be formed of a metal, in distinction to substantially all of the parts of the container hereof.

Aside from the top member 13, described above, substantially all of the container of the present invention is formed of an opaque material, such as for example, a lightweight, easily-formed plastic. The base housing 12 includes a housing top 21 and housing bottom 22, which are adapted to be fitted together during manufacture to form a substantially unitary, hollow housing. The housing top 21 has a flat upper plate 23, and a generally rectangular enclosure is formed by upstanding walls 24 thereon. These walls 24 are preferably formed integrally with the remainder of the housing top. The mounting lugs 16 for the top enclosure 13 may extend upwardly from the rear side walls of this rectangular enclosure, and the top enclosure 13 is dimensioned to fit slidably into the enclosure defined by the vertical walls 24, so that in closed position of the top 13 there is defined a chamber for the display and storage of articles within the container.

At one side of the enclosure, above noted, the housing

extends laterally outward to form a projection 26 adapted to contain lock-operating mechanism to be described in greater detail below. With regard to the bottom portion of the housing 12, same will be seen to include a generally rectangular base or foot portion defined by vertical walls, and having substantially the same dimensions as the enclosure defined by the vertical walls 24 on the top of the housing. In addition, the bottom of the housing includes vertically upstanding walls 27 extending upwardly from a bottom plate, or floor 28. This floor 28 extends laterally outward from the base portion, noted above, and the vertical walls 27 are coextensive with the floor. The top of the enclosure 12 likewise has vertical walls 29, which in this instance depend from the upper plate or top 23 thereof, and which are offset laterally outward of the top about same, so as to tightly fit over the upstanding walls 27 of the bottom portion of the enclosure. As may be clearly seen from FIGS. 1 and 2, the top portion thus fits tightly onto the lower portion, with the vertical walls 29 of the top of the enclosure fitting over the vertical walls 27 of the bottom of the enclosure, and in fabrication, a suitable bonding agent may be employed in this connection so as to permanently tie together these two parts of the enclosure.

With regard to the locking mechanism of the present invention, there is herein provided for a combination lock operable by thumb wheels, and serving to release a locking plate upon proper orientation of locking wheels. The combination latching means of the present invention include a slide plate 36, slidably disposed on a transverse raised portion of the floor 28 of the bottom of the housing. A guide 37 extends along the center of this raised portion, and fits within a slot 38 in the slide plate, so that the plate is restrained from motion laterally thereof. The upwardly extending guide 37 has a length which is somewhat less than that of the slot in the slide plate, so that the slide plate is consequently capable of movement upon the raised portion of the floor 28, as limited by the guide 37. The slide plate 36 has a projecting tab which is adapted to extend exteriorly of the housing in front thereof as, for example, through an opening formed by a cut-out portion of the housing top 21. A latch 39 is secured to the slide plate 36 and extends upwardly therefrom with a forwardly extending lip thereon. An opening 41 in the upper housing plate 23 provides a space through which this latch 39 extends, and this opening is formed of sufficient dimensions that the latch may be moved backwardly and forwardly therein. The transparent top 13 is secured in closed position by means of engagement of the latch lip over an internal flange 42 along the front edge of the top. This is best seen in FIG. 3, wherein the top 13 is shown in closed position as retained by the latch against the force of the spring 17 tending to urge the top into an open position. It will be seen from this figure also that the slide plate is restrained from vertical movement by the raised portion of the floor 28, and by engagement with a pair of depending walls 43 extending downwardly from the under surface of the upper housing plate 23. Adequate separation is provided between these depending walls 43 and the raised portion of the floor 28, so that the slide plate is disposed in slidable relation therebetween, and yet is restrained from any other latitude of motion.

Considering further the locking means of the present invention, and referring also to FIGS. 3, 4 and 5 for a more complete illustration of same, it will be seen that there are provided three separate combination means 51, 52 and 53, which are substantially identical except in the respects noted below. The mechanism 51, for example, includes a substantially horizontal shaft 56 mounted for rotation in a pair of spaced vertical walls, formed by opposing protuberances upon the upper and lower portions of the housing, and having mating semicircular openings therein to define appropriately sized bores therethrough within which the shaft 56 is disposed. At the outer end of the shaft 56 there is affixed a thumb disc 57, which may

be knurled or appropriately lined to facilitate manual rotation of the shaft by an operator contacting the disc with the thumb, or the like. This disc 57 is disposed outwardly of a first of the above-mentioned walls, and immediately interiorly of such wall there is disposed a dial wheel 58 having numerals spaced circumferentially thereabout. At the inner end of the shaft 56, there is affixed a locking wheel 59 which will be seen to be disposed adjacent a side of the slide plate 36, and which has a radial slot 61 therein.

The lateral housing projection 26, noted above, is provided with three pairs of openings 62 for exposing the discs of each of the combination means 51, 52 and 53. Thus, as illustrated in FIG. 1, for example, it will be seen that each pair of openings is disposed one in the upper surface of the housing portion 26 and one in the lower surface thereof, and may furthermore extend in part through the end of this portion, so that ready access is provided to each of the dials, in order that an operator may conveniently rotate the dial by grasping same between thumb and finger. With this structure it is not necessary for the dials to extend outside of the housing itself. There are also provided three openings 63 in the upper surface of this housing projection 26 for viewing of the dials 58. These latter openings 63 may be small circular openings, individually aligned with the disc openings 62 and with the separate dials 58. Each of the dials 58 has numerals scribed about the circumference thereof, so that an operator may determine the rotary position of each of the combination means as he turns the discs 57.

At the opposite end of the shafts 56, there are, as above noted, disposed locking wheels which rotate with the shafts. Thus, considering the mechanism 51, for example, the locking wheel 59 is secured to the left-end of the shaft, as viewed from the front of the container, will be seen to include a radial slot 61, so that by appropriate rotary positioning of the shaft 56 this slot may be directed forwardly of the container, as illustrated in FIG. 4. About the circumference of the locking wheel 59, there are provided a plurality of radial cogs 67, for reasons explained in some detail below. Each of the locking wheels is formed in substantially the same manner as the wheel 59, described above, however, the radial slots in these wheels may be angularly oriented in various ways, as is also further described below.

With regard to the actual locking and release of the top cover 13 by means of the locking mechanism, in part described above, there are provided along the lateral edge of the slide plate 36 some three projecting lugs 71, 72 and 73, extending generally parallel to the shafts of the combination means 51, 52 and 53, with one lug ahead of each of the locking wheels, as best seen in FIG. 2. These lugs on the slide plate are dimensioned to slide into and out of the radial slots in the locking wheels. With the individual locking wheels oriented so that the radial slots in each are in alignment directed toward the front of the container, it will be seen that the slide plate 36 may then be moved toward the back of the container by pressing on the forwardly projecting tab thereof, so as to slide the lugs 71 to 73 into these radial slots in the locking wheels. Any other orientation of the locking wheels will serve to prevent this motion of the slide plate, inasmuch as the lugs will then strike the periphery of the wheels when the plate is attempted to be pressed inwardly of the container.

In the forward position of the locking plate, as illustrated in FIGS. 2 and 4, for example, it will be seen that the latch 39 of the plate engages the inner lip 42 of the transparent top cover 13, and consequently, locks this top in closed position upon the container. It is only by pressing the slide plate into the container that it is possible to move this latch 39 rearwardly out of engagement with the top flange 42, and consequently, to release this top so that the spring 17 may flip the top open. One further element of the lock case hereof is a spring 76 mounted in tension within the housing 12 to urge the

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slide plate outwardly of the housing, and consequently into lock position. This spring 76 may be mounted at one end to a protruding bar or portion of the slide plate at the rear thereof, and at the other end to a post which is affixed to the bottom part of the housing, as illustrated in FIGS. 2 and 3.

With regard to operation of the watch case of the present invention, it is first noted that the upper and lower portions of the housing 12 are firmly affixed together during manufacture so as to form a unitary enclosure, whereby the locking mechanism disposed therein is wholly sealed from the outside. From this sealed enclosure there then protrudes the forward end or tab of the slide plate 36, as illustrated in FIG. 1, and the discs 57 are available through the openings 62, so that an operator may rotate the three combination means. Having knowledge of the combination of the locking mechanism hereof, the operator then turns the discs 57 to orient the proper dial numerals beneath the openings 63 in the housing. The dial numerals are scribed upon the individual dials in relation to the radial slots in the locking wheels, which are affixed to the shafts of the separate locking mechanisms. It will be appreciated that the numerals may be scribed or otherwise marked upon the dials in any desired manner, it only being necessary that they truly indicate the rotary position of the individual shafts upon which they are mounted. With the discs, dials, and locking wheels each rigidly affixed to the common shaft thereof, it will be seen that the numerals or marks scribed or otherwise formed about the circumference of the dials are related to the position of the radial slot in the locking wheel associated with that dial. Consequently, the combination for unlocking the container is that combination of dial numerals which serves to align the slots in each of the locking wheels toward the front of the container when the combination numbers are aligned under the housing openings 63.

An operator having knowledge of the combination of the watch case hereof then need only rotate the discs 57 to align the proper dial numerals beneath the openings 63, and he will then have aligned the radial slots in each of the locking wheels toward the front of the container in the position illustrated for the slot 61 of the front and rear wheels 59 in FIG. 4. In this position the container yet remains closed because of the action of the spring 76, which urges the slide plate forwardly of the container, and thus maintains the latch in engagement with the top. Pressing inwardly upon the front end of the slide plate 36 will serve to slide this plate rearwardly of the container within the enclosure thereof on the slide bar 37, and consequently, to move the latch 39 out of contact with the flange 42 of the transparent top 13. With this release of the top, the spring 17 will then flip the top open, so that ready access may be had to the interior thereof, whereat a watch or other jewelry may be disposed.

Closure of the watch case hereof is readily accomplished by manually depressing the top, so as to urge the peripheral edges thereof against the plate 23 of the enclosure. As the transparent top 13 is manually pressed into closing relation with the bottom portion of the case, it will be seen that the flange 42 at the front of this transparent top will bear against the slanted, forward upper surface of the latch 39, and consequently, will operate to push the latch out of the way against the tension of the spring 76 until the top is entirely depressed. As the top flange 42 passes over the upper portion of the latch 39, it will be seen that the latch will then move forwardly, inasmuch as the slide plate 36 is urged in that direction by the spring 76. In this position the top 13 is held closed by the latch mechanism. Complete locking of the case may then be accomplished by rotation of the discs 57, so as to position the radial slots in the locking wheels out of alignment with the lugs on the slide plate. As illustrated in FIG. 4, the central locking mechanism

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52 has been, in part, rotated so that the radial slot in the locking wheel thereof is not aligned with the central lugs 72 of the slide plate. In this position it will be appreciated that the slide plate cannot be pressed inwardly of the container, and consequently, that the transparent top 13 is firmly locked in closed position by the engaging latch 39.

In order to prevent one from determining the combination of the watch case hereof, there are provided a plurality of cogs about the circumference of each of the lock wheels. As illustrated in FIG. 4, the rear wheel 59 has radially projecting cogs 67 thereabout, so that the wheel cannot be rotated with the latch plate lugs 73 pressed against this wheel. It will thus be seen to be impossible for anyone to open the case without a knowledge of the combination. It is not possible to press the latch plate inwardly, thus to press the lugs 71-73 against the corresponding locking wheels, and then to continue to rotate the discs 57 until the lugs slide into the radial slots in the locking wheels. The radially projecting cogs upon the locking wheels preclude any such attempt to open the case without knowledge of the combination, or to determine the actual combination in this manner.

Substantially the entire watch case of the present invention may be readily and inexpensively formed from plastic, or the like. It is contemplated that the springs 17 and 76 shall be made of metal, and likewise, that the top mounting bar 14 may also be formed of metal, if desired. All other portions of the case may be formed of inexpensive materials, such as plastic. Not only may the individual portions of the invention be formed of inexpensive and lightweight material, but furthermore, each of the elements may be quite readily and inexpensively formed. Thus, for example, the combination means 51 may be produced in one single forming operation, wherein the shaft 56 is formed integrally with the disc 57, dial 58 and locking wheel 59. Further with regard to fabrication of the watch case hereof, it is particularly noted that the top 13 is adapted to be formed of a transparent plastic, or the like, while the enclosure or housing 12 is to be formed of an opaque plastic material, or the like. This is particularly important, inasmuch as the case hereof incorporates a combination locking means which, if exposed to view of the operator, could be readily unlocked without prior knowledge of the combination built into the apparatus. Of further and additional importance insofar as the present invention is concerned is the relatively low silhouette of the resultant case. In distinction to many combination locking means, the present invention is particularly adapted for maintenance of minimum size, while yet providing a three combination lock of adequate complexity to prevent inadvertent or unauthorized opening of the case without prior knowledge of the exact combination. It will, of course, be appreciated that the combination for opening separate cases, formed in accordance with the present invention, may be readily varied by application of the dial numerals in different relative angular positions about the dials. A very large number of possible combinations may be provided for separate watch cases, so that little likelihood exists of the case hereof being opened without accurate knowledge of the actual combination of the individual case, even though the invention be mass produced and distributed in large quantities. As a result of the simplified structure and fabrication of the present invention, it is possible to produce watch cases, in accordance herewith, at a very minimum cost. It is, in fact, possible to produce these cases for some few cents apiece, so that the applicability of the present invention to display, sale and storage of articles such as watches or jewelry, is truly maximized.

What is claimed is:

1. A watch case comprising a flat opaque housing having a plurality of shafts horizontally mounted therein with portions of the shafts accessible from outside said housing for manual adjustment of angular shaft positions,

means indicating angular shaft positions, locking wheels on each of said shafts with a radial slot in each wheel, a horizontally disposed slide plate mounted in said housing for translation substantially perpendicularly to said shafts adjacent said locking wheels, said slide plate having lugs extending laterally therefrom with one adjacent each of said wheels and engageable with the slot thereof whereby said plate is restrained from translation in all but one combination of angular shaft positions wherein said plate lugs and locking wheel slots are aligned, a latch mounted upon said slide plate in vertical extension through an opening in the housing top and movable with said plate between a first position wherein said lugs are engaged by the peripheries of said wheels and a second position wherein said lugs are fully engaged within the slots of said wheels, and a transparent cover pivotally mounted atop said housing to define a display and storage chamber thereon, said cover having means engageable with said latch in said first position to lock closed said top and disengageable with said latch in said second position to release said cover for opening.

2. A watch case as set forth in claim 1, further defined by resilient means engaging said slide plate and urging same into said first position of said latch with said slide plate lugs out of the locking wheel slots, and said slide plate having a portion extending from said housing through a slot therein for manual opening of said display and storage compartment by release of said transparent cover.

3. A watch case as set forth in claim 1, further defined by the portions of said shafts accessible from outside said housing comprising discs extending to housing edges at which openings in the housing afford access thereto, said shafts each having dials thereon with markings circumferentially thereabout, said housing having small openings adjacent said dials for viewing of same for determination of the angular shaft positions, and said wheels each having circumferentially spaced cogs with the slot of each wheel circumferentially intermediate two adjacent cogs.

4. An improved transparent locking container for jewelry and the like, comprising a flat, opaque housing having a base beneath a portion thereof so that the housing projects from at least one side of the base, a plurality of openings in the housing projection, a slide plate slidably mounted within the housing and having an end extending outside the housing, said slide plate having lugs extending from one side thereof and being spring-loaded to normally extend from the housing, a latch carried upon said slide plate in extension through an opening in the top of said housing, a plurality of substantially horizontal shafts rotatably mounted in said housing, a disc on each shaft mating with openings in said housing projection for manual shaft rotation, a lock wheel about each shaft adjacent lugs on said slide plate and each lock wheel having a radial slot therein for accommodating a lug whereby particular angular orientation of each shaft aligns the lock wheel slots with slide plate lugs to free the slide plate for manual translation against said spring-loading to move the latch carried by said slide plate, and a transparent spring-loaded cover having a top and depending sides pivotally mounted atop said housing for defining a display and storage compartment thereon for jewelry and the like, said cover having latch-engaging means for securing of the cover in closed position to lock said compartment whereby access thereto is only available through particular angular shaft positioning to free the slide plate for unlatching the cover.

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