April 5, 1938. J. J. MARTINEZ ET AL 2,113,306

SEVERABLE LOCKING DEVICE

Filed Oct. 14, 1936 2 Sheets-Sheet 1

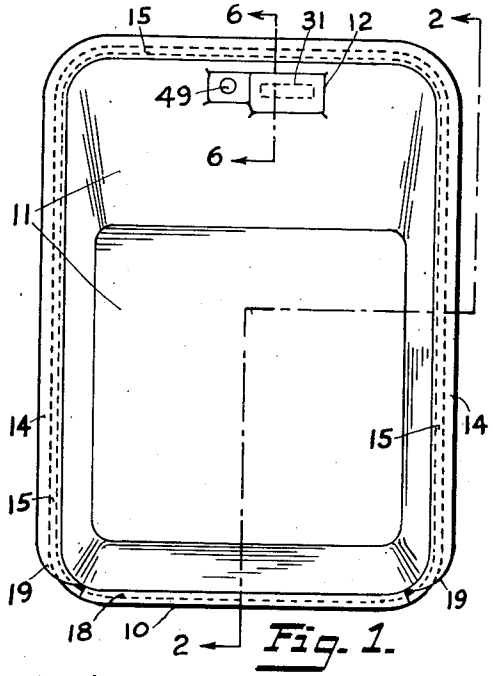


Fig. 1.

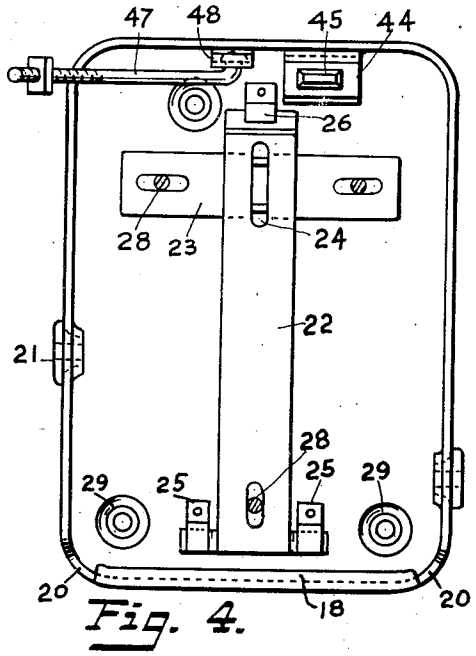


Fig. 4.

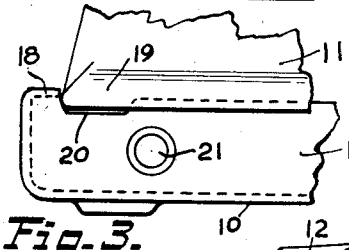


Fig. 3.

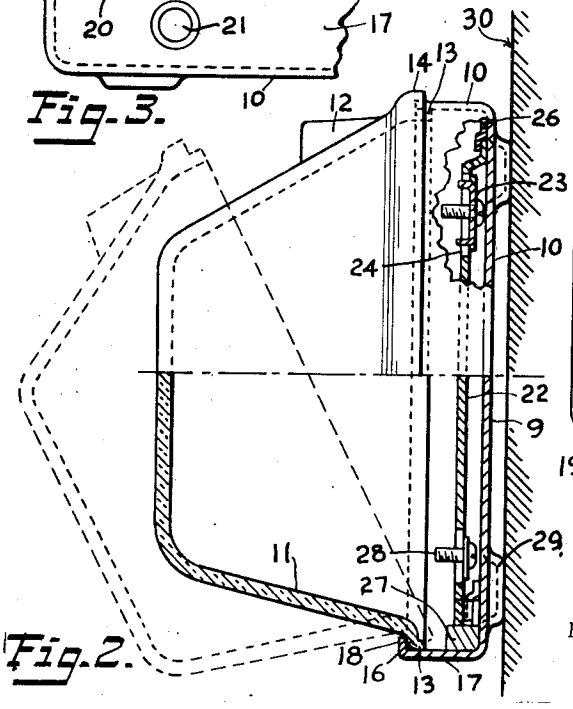


Fig. 2.

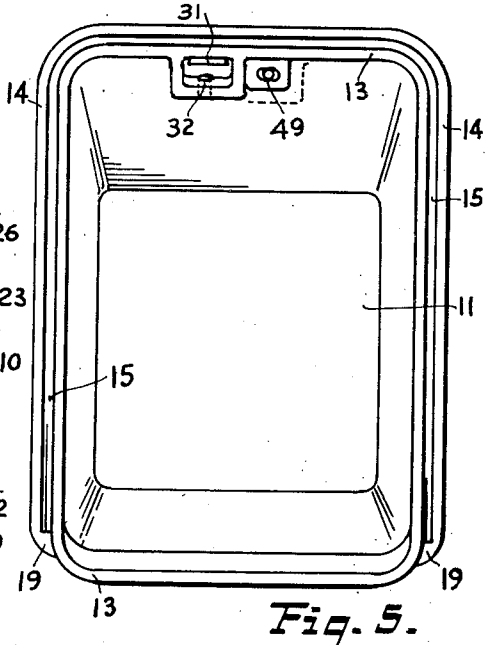


Fig. 5.

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SEVERABLE LOCKING DEVICE

Filed Oct. 14, 1936 2 Sheets-Sheet 2

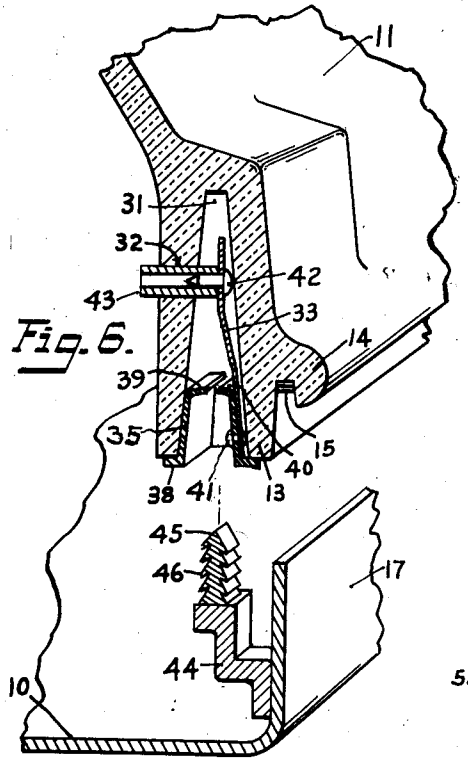


Fig. 6.

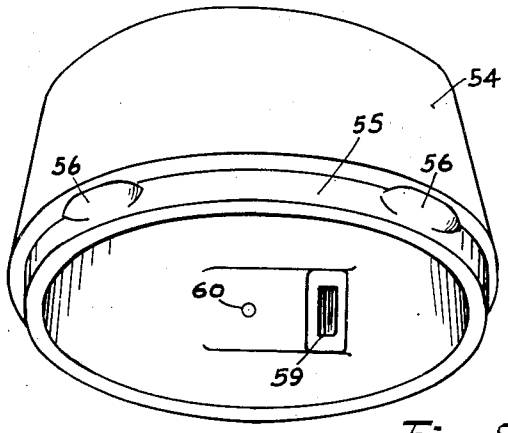


Fig. 8.

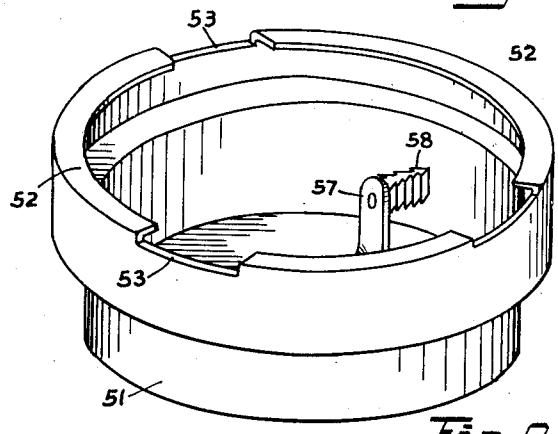


Fig. 9.

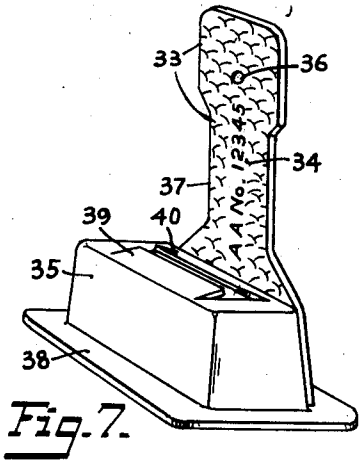


Fig. 7.

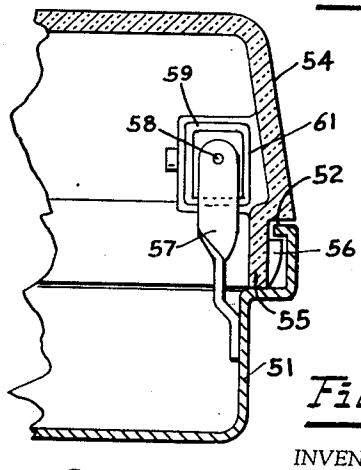


Fig. 10.

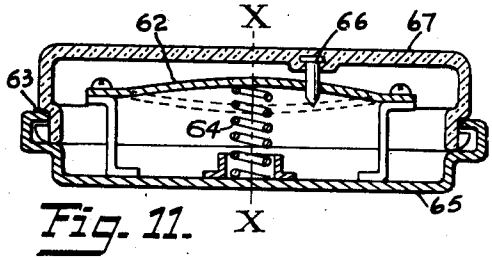


Fig. 11.

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2,113,306

SEVERABLE LOCKING DEVICE

Juan J. Martinez and Dante S. Cusi, Mexico, D. F., Mexico

Application October 14, 1936, Serial No. 105,559

14 Claims. (Cl. 247—2)

Our invention broadly relates to a locking agency of the anti-theft type provided with severable sealing means, which are protectively housed and may be operatively set as a visible telltale to safeguard a covered receptacle, and when violated, leaves an irretrievable and conspicuous trace of such act. A device of this kind is especially intended to supplement or wholly displace ordinary locks and thereby more adequately secure a sealed container such as a recording meter casing, bond or legal testament containers and analogous purposes where unguarded cover locks may need to be reenforced against tampering and thereby afford insurance that the contents of our receptacle have not been disturbed.

To this end, we preferably resort to a suitable container whose cover while being closed, is automatically sealed by a virgin strip of paper, fibre, coated fabric, relatively thin metal or the like readily rupturable tie-piece so disposed interiorly of a closed receptacle that its cover cannot be opened without tearing or otherwise fracturing said sealing means. To visualize whether such tie-piece remains unbroken and intact, we provide for an inspection window or may make either the container or its cover of relatively transparent material so that the prevailing condition of the sealing means may at any time be examined without having to open or otherwise separate the cover member from its associated container member.

In order to further prevent renewal of any ruptured strip by unauthorized persons after a seal has been forced, it is preferred to resort to special embossed strip material having a characteristic fret or other distinguishing insignia thereon that is inherently difficult to counterfeit. All parts of our security device are wholly mounted interiorly of the casing confines and not subject to access until after the seal has been broken. Our operatively suspended tie-piece is so arranged that it may readily be renewed without mutilation of the container or its cover.

The present improvements represent a continuation in part of our copending application, Serial No. 68,245 filed March 11, 1936, particularly as regards certain structural details which have been simplified for economical manufacture on a rapid productive basis. The instant disclosures are broadly concerned with a container member having a closable mouth edge of which a length portion includes undercut lip means adapted to demountably engage faced lug means carried by the cover member. Such assembled members are protectively sealed against disengagement by severable strip interlocking means that are suspended interiorly of the closed container in a substantially taut condition.

The object of our invention is to devise anti-theft means of the character indicated that can readily be applied to various purposes at a relatively low installation cost and that shall unmistakably detect whether or not a closure member after being sealed, has been detached from its associated container; the sealing means being capable of preventing any access to the container except by the severing thereof. In the present disclosure, one of the container members is preferably equipped with improved lip means adapted to detachably engage lip receiving means on the other member, centralized severable means being interiorly disposed and located remote from the engaged lip means to seal the closed container against unauthorized opening.

Embodied herein are also refined interlocking devices for suspending our sealing strip between the cover and container members and which strip may herein be disposed either crosswise or lengthwise with respect to the parting face, depending upon whether the closure member is adapted to rotate within or lift away from the container mouth. All such and other structural features will hereinafter be more explicitly set forth. Reference is had to the accompanying two sheets of drawings which are illustrative of certain alternative embodiments, and in which drawings:

Fig. 1 represents a top plan view of a transparent closure member equipped with our sealing devices as mounted upon a panlike base, and which assembly may be employed to incase a service watt-hour meter or the like instrument.

Fig. 2 shows a cross-sectional view of such assembly as seen along the broken line 2—2 of Fig. 1, while the Fig. 3 detail clarifies how one edge of the closure member may be interlocked with said base.

Fig. 4 is a plan view of our base pan as seen when the closure member is removed, and Fig. 5 depicts the corresponding parting face view of the closure member.

Fig. 6 schematically illustrates our strip gripping components prior to being operatively interlocked between the closure and base members, while Fig. 7 is a perspective of one such component.

Figs. 8 and 9 respectively reveal a modified style of mated housing members as applied to

a watt-hour meter that are likewise sealed by strip means, and Fig. 10 shows a cross-sectional view of this interlocked assembly.

Fig. 11 shows still another style of severable strip assembly of the breech loading type.

Referring now in detail to the Figs. 1 to 7 disclosure, this style of sealed electric or gas meter protector may comprise a sheet metal base or casing member 10 and a transparent cover or hoodlike closure member 11 of the demountable type, which latter is preferably cast of glass or the like transparent material and sealed to said base by one or more severable telltale strips. One end wall of the hoodlike cover may be cast to provide for an inbuilt mortised compartment or the like strip receiving chamber 12. The mouth end region of such chamber may be kept flush with the flat face of the depending cover flange 13 that may be given a rectangular contour as in Fig. 5. Inset with respect to the face level of said flange, is an exteriorly overhanging rib 14 having a packing groove 15 formed therein that extends around three sides of said contour. The remaining side thereof is cross-sectionally shaped to provide for a narrow lug face 16 (see Fig. 2).

The base member 10 comprises an endless upstanding flange 17 of which certain edge components are snugly received within the groove 15, while a remaining length component of said flange is inturned to constitute an undercut jaw or lip 18 adapted to cooperatively grip the lug face 16 and thereby hingedly mount the cover member. This disposition allows the assembled cover 11 to be disengaged when swung into its dotted position about such joint. The base 10 may also be reversely mounted so as to locate such joint at the top rather than at the bottom of the cover 11. To provide for the neat trim detailed in Fig. 3, each terminal of the rib 14 may be rounded as at 19 and this is unobstructedly received by indenting the upturned edge of the flanges 17 as at 20 for clearance purposes.

Said base member may be further equipped with lead wire bushings 21, also with an adjustable skeleton holder rack comprising a pair of crossed slat elements such as 22 and 23. The primary slat 22 is slotted intermediate its length at 24 and the slat ends demountably secured to the bottom plate 9 of the base by complementary top and bottom brackets such as 25 and 26. A raising of the slat 22 and slipping the same into the twin bracket lugs 25 and toward the spaced bracket lug 26, causes said rack to be snugly retained in place. When a bottom cover joint is resorted to, such rack may be additionally secured by a removable stop block 27. The secondary slat or adjustable cross member 23 has ears turned up at opposite edges thereof that slide in the primary slot 24. As will be understood, screws such as 28 may be provided to bolt a meter or other encased instrument in place. The base 10 may be provided with projecting sockets 29 by which to fixedly and spacedly attach the base upon a supporting wall 30. Such clearance exposes and allows of detecting unauthorized wiring connections to the meter. After the cover 11 is removed from said base, an instrument and its mounting rack may be bodily slipped out of said bracket lugs for inspection or repair.

Attention will now be directed to our severable sealing means whereby an enclosed meter may be securely protected against unauthorized tampering. For this purpose, it is preferred to cast a tapered mortise or strip housing 31 integral with the transparent cover member 11 and the inner partition wall of which mortise is cylindrically apertured at 32 as cross-sectionally shown in Fig. 6. A severable strip 33 with identifying markings 34 imprinted thereon, may have one end thereof riveted at 41 to a stamped up sheet metal cup or cartridge 35 in the Fig. 7 manner. The opposite free strip end may be initially perforated at 36 for dowel receiving purposes. The intermediate shank portion 37 may be but is not necessarily made relatively narrower and smaller in cross-sectional area than the attached strip ends to localize the anticipated tear crosswise of such deliberately weakened region. When kept uniform in width, one end fastening may be torn out of such strip to effect a like result. The disclosed cup shaped cartridge has an outturned brim or stop flange 38 and a bottom wall slitted to provide for a pair of reversely disposed wings such as 39 and 40 of which the contiguous edges are initially closely spaced.

To load the mortise 31, a headed nail or the like short dowel 42 is preferably forced into the strip aperture 36, which is then simultaneously entered into the mortise. When the stop flange 38 is brought into abutment with the faced mouth of such housing, the dowel is intended to align axially with the partition aperture 32. A tubular hard rubber fastener 43 or the like is then snugly slipped through the aperture 32 and over the nail point to suspend the strip shank 37 in the Fig. 6 fashion and thereby retain said cup in place against lateral shift along the cover parting face.

The flange 17 has a bracketed stanchion 44 fixedly welded or otherwise secured thereto interiorly of the base confines without exteriorly showing the location thereof. This bracket supports a serrated latch piece 45 affording a wedge shaped or otherwise pointed tip and having respective side faces thereof provided with two series of reversely disposed barbs such as 46 which may be staggered relative to each other, as shown. Said latch tip is placed in aligned registry with the transverse slit between the inturned resilient wings 39 and 40. When the loaded hoodlike cover 11 of Fig. 6 is dropped upon said latch piece, its tip will forcibly wedge said wings apart and cause the contiguous edges thereof to freely slide downwardly along said series of barbs until the edge of the base flange 17 becomes snugly entered into the packed groove 15. The cartridge wings will thereby be sprung apart and one such wing edge as a pawl, is made to snap into engagement with a registering barb in ratchetlike fashion. By staggering said barbs as described, the size thereof may be enlarged and still provide for a relatively fine ratchet gradation.

Assuming the hood lug 16 to have been properly entered into engagement with the base lip 18, then the latch piece will automatically interlock with the loaded cartridge 35 and the closure member 11 can no longer be lifted off its base 10 without bringing about a rupture of the strip 33, which in turn constitutes the security seal to which our invention is primarily directed. It will be observed that such severable strip is located wholly to one side of the parting plane between our container members, also that when in place, the prevailing condition of such installed strip is at all times kept visible through the outer transparent side wall of the mortise 31. Since

the depending hood flange 13 is telescopically entered into the upstanding base flange 17, it becomes impossible to probe into such casing interior until these overlapping members have been separated but which relationship cannot be achieved without a severing of the telltale strip 33.

To facilitate the handling of the cover and base after being assembled and for protection against inadvertent rupture of said strip when operatively set in place, we may provide for an L shaped bolt 47 of the kind detailed in Fig. 4. The headed end thereof may be carried in a pivot bracket 48 affixed to the base. The threaded swinging shank end of such bolt may be entered through a bossed cylindrical hole 49 that is cast into the glass cover 11 (see Fig. 5). If desired, the shank nut may be secured by a lead seal or the cover may likewise be retained by other supplementary locking means.

It will be apparent that instead of inbuilding a mortise such as 31 into our unitary cover member 11, a like result may be had by the use of a non-transparent cover in which an inspection window is inserted to expose the suspended region of the encased tie strip 33, which aspect has been elaborated upon in the previously cited copending application.

In Fig. 6, the strip 33 is directed transversely to the parting faces between the base and its liftable cover but such strip may also be parallelly disposed. As an instance, reference is had to Figs. 8 to 10 inclusive, which modification provides for a base or container 51 having a circular mouth of which the edge is inturned to constitute a series of sectionalized lips of the undercut type such as 52 which are perimetrically spaced apart by gaps 53 to constitute a threaded or the like breechlike bore.

The hooded glass cover 54 is here shaped to provide for an endless depending flange 55 diametrically sized to fit into said bore, said flange being provided with circumferentially distributed locking ears or projecting lugs such as 56 that are respectively disposed to enter one of the gaps 53 and assume the assembled relation indicated in Fig. 10. An axial twisting of the cover with respect to the base serves to lock the several ear lugs underneath their respective sectionalized lips 52.

To bring about a similar seal that is to be severed upon separating the hood cover from its base, we may provide for a stanchion 57 that is suitably affixed to the base 51 and having a serrated latch piece 58 projecting laterally from such supporting stanchion in an offset relation to the axis of said breechlike bore. In cooperation therewith, the transparent hood 54 may have a mortise 59 cast therein including a partition aperture 60 and which mortise is shaped to receive the cartridge 61 together with a severable strip, all such interlocking elements being arranged to correspond in substance with the assembled relationship that was more explicitly described in connection with the Fig. 6 disclosure.

As will be understood from Fig. 10, a twisting in one direction between the base 51 and its engaged hood 54 is intended to correspondingly interlock the barbs of the latch piece 58 with the wings of the cartridge 61. The position of the stanchion is so located that the ears 56 underlie their respective lips 52 when said latch piece is operatively interlocked. A reversal of hood rotation will then cause a rupture of the installed tie-strip and thereby act as a telltale agency to detect unauthorized opening of such casing components. The initial suspension of said strip is kept sufficiently taut to prevent breech disengagement except by the severing of said tie-strip and one of the closed container members are again provided with transparent inspection means to reveal the prevailing condition of such interiorly installed sealing strip.

The equivalent of our security seal as applied to a pair of concentrically breeched members, may also be had by analogous means. As one alternative, an apertured oval-shaped strip 62 of severable material may be loosely suspended in parallelism to the parting face 63 between the base and hood members, as is schematically shown in Fig. 11. Spring means 64 may be interposed to resiliently thrust the apertured strip region outwardly against the tip of a depending pin or latch piece 65 carried by the member 67. Said pin is disposed eccentrically with respect to the common axis X—X of rotation between such container members and allowed to fall into registration with the strip aperture when said members are given a relative twist. The strip 62 would be initially depressed into its dotted position, but after said pin drops into the strip aperture, the container members become interlocked and cannot be separated without tearing said sealing agency.

These selected embodiments will make evident that our sealing devices are likely to find diversified usage other than to meter casings. Not only is the prevailing condition of our telltale medium kept visible behind a housed transparency, but it is adequately sheltered interiorly of a sealed container so that its characteristic markings may not readily be counterfeited by a duplicated insertion. It is believed that the foregoing disclosures make apparent to those skilled in this art, the intended function, mode of operation and the resulting advantages afforded by our improvements. It is to be understood therefore, that various changes in the structural details and arrangement thereof may be resorted to in likewise carrying out the broader underlying principle involved, all without departing from the spirit and scope of our invention hertofore described and more particularly pointed out in the appended claims.

We claim:

1. A protective sealing agency comprising a container member having a closable mouth edge of which a length portion is equipped with undercut lip means, a cover member assembled to close said mouth and which cover is provided with lug means disposed to engage underneath the lip means when the container is closed, single severable tie-strip means suspended in a substantially taut condition wholly within the confines of the closed members in a centralized location remote from the engaged lip means to interlock the assembled members against lip disengagement prior to the severing of the tie-strip means, and inspection means for one of the aforesaid members disposed to reveal the prevailing condition of such suspended tie-strip and which tie-strip is renewable without mutilation of either container member.

2. A protective sealing agency comprising a closable container member and a cover member therefor, severable tie-strip means having an end region secured to and interiorly of one such member, inspection means for said one member disposed to reveal the prevailing condition of the tie-strip means, retained cartridge means including a resilient wing attached to the other end region of the tie-strip means, and serrated latch means

comprising a series of barbs fixedly mounted upon the other member, one of such barbs being arranged to automatically interlock with an edge of said wing when the cover closes the container.

3. A protective sealing agency comprising a closable container member and a cover member therefor, one such member being transparent and partitioned to constitute a mortise having a mouth and which partition has an aperture therethrough located remotely from said mouth, severable tie-strip means having one end region provided with dowel means which registers axially with said aperture when the tie-strip means is entered into the mortise, a fastener extending through said partition aperture and arranged to receive the dowel means, cartridge means including a resilient wing attached to the opposite end region of the entered tie-strip means, and serrated latch means comprising a series of barbs mounted upon the other member, one such barb being interlocked with an edge of said wing when the cover closes the container.

4. A protective sealing agency comprising a closable casing member including an endless flange having a marginal edge of which one component length is equipped with lip means, a transparent cover member serving to close the marginal edge, said cover being provided with a lug face arranged to hingedly engage said lip means, and single severable tie-strip means located remotely from said one component edge length wholly within the confines of the closed members and serving to interlock said members about such hinged engagement, the prevailing condition of said tie-strip means being kept visible through the cover without having to reopen said members.

5. A protective sealing agency comprising a closable casing member including an endless flange having a marginal edge that is given a substantially rectangular contour of which one component length is equipped with lip means and the edge corner regions contiguous to the lip ends are respectively indented, a ribbed cover member serving to close the aforesaid marginal edge said cover member being provided with a lug face disposed to hingedly engage said lip means and having a rounded rib terminal disposed at said corner regions that are respectively adapted to enter into the aforesaid edge indentations, single severable tie-strip means located remotely from said one component edge length wholly within the confines of and serving to interlock the closed members against opening about such hinged engagement, and inspection means for one of the aforesaid members disposed to reveal the prevailing condition of said tie-strip.

6. A sealing agency for protecting a meter or the like instrument and which agency comprises a closable casing member including a bottom plate and a circumscribing endless flange having a marginal edge, a removable cover member closing said edge and which cover is provided with a depending flange disposed to telescope with respect to said endless flange, a holder rack comprising a pair of crossed skeleton elements demountably attached to said plate by lug means, an instrument mounted upon the rack, severable tie-strip means suspended within the closed confines of said members to interlock the same against tampering with the installed meter, and inspection means for one of the aforesaid members disposed to reveal the prevailing condition of the suspended tie-strip means.

7. A protective sealing agency comprising a closable container member and a cover member therefor, a severable tie-strip including a medial shank portion having a reduced cross-sectional area relative to the respective strip end regions and having a strip end region affixed to one such member and the opposite strip end region attached to the other member, there being cartridge means and cooperating latch means interposed between said other member and the aforesaid opposite strip end region, and inspection means disposed to reveal the prevailing condition of the affixed tie-strip.

8. A protective sealing agency comprising a closable container member and a cover member therefor, a severable tie-piece, means affixing one end region of the tie-piece to one such member, a cup shaped device including a stop flange and a bottom wall that is pierced to provide for a wing element, said device being affixed to the opposite end region of the tie-piece, cooperating latch means affixed to the other member and which latch is adapted to interlock with said wing element when the cover closes the casing, and inspection means disposed to reveal the prevailing condition of the latched tie-piece.

9. A protective sealing agency comprising a closable container member and a cover member therefor, a severable tie-strip having identifying markings imprinted upon one face thereof, means affixing one end region of said strip to one such member, retained cartridge means affixed to the opposite end region of said strip, and cooperating latch means affixed to the other member and which latch automatically interlocks with said cartridge means when the cover closes the container, all such interlocking elements being located interiorly of the closed container and one of the aforesaid members being transparent to reveal the prevailing condition of the imprinted tie-strip.

10. A protective sealing agency comprising a closable container member and a cover member therefor that are concentrically assembled for relative rotation about an axis, severable tie-strip means disposed within the confines of the closed members to interlock and thereby restrict the rotative movement allowed between said members prior to severing said tie-strip means, and inspection means disposed to reveal the prevailing condition of the tie-strip means.

11. A protective sealing agency comprising a closable container and a cover member therefor that are concentrically assembled for relative rotation and which members have a parting face therebetween, severable tie-strip means of which the end regions are respectively affixed to the container and to the closed cover thereof, said tie-strip means being disposed in substantial parallelism with said parting face, and inspection means disposed to reveal the prevailing condition of the affixed tie-strip means.

12. A protective sealing agency comprising a container member having a circular mouth edge of which a portion is inturned to provide for spaced sectional lips that constitute a breech-like bore, a cover member including a depending flange assembled into said bore and which flange has perimetrically spaced lugs thereon respectively adapted to engage one of said lips when the assembled members are relatively rotated around the bore axis, severable tie-strip means disposed within the confines of the closed member to breakably interlock and thereby restrict the axial rotation between said lug engaged members prior to the severing of the tie-strip means, and in-

spection means disposed to reveal the prevailing condition of the tie-strip means.

13. A protective sealing agency comprising a closable container member and a cover member therefor and which members are concentrically assembled for relative rotation about an axis, latch means supported by one such member in a radially offset relation to said axis, severable tie-strip means located within the confines of the closed members, said means being affixed to the other of such members for operative engagement with the latch means and thereby breakably interlock said members against rotative movement prior to the rupturing of said tie-strip means, and inspection means disposed to reveal the prevailing condition of the affixed tie-strip means.

14. A protective sealing agency comprising a container member having a circular mouth of which an edge portion is inturned to constitute threaded bore means, a cover member including mated thread means arranged to operatively engage said bore means, severable tie-strip means disposed within the confines of the closed members to breakably interlock the same, and inspection means disposed to reveal the prevailing condition of the severable tie-strip means.

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