A manway cover assembly for a pressurized railway tank car comprises an integrally constructed cover plate having a generally cylindrical side wall portion and a sealing flange extending outwardly from the side wall portion substantially normal thereto and a stiffening flange sloping downwardly and outwardly from the sealing flange, a gasket held in place on the sealing flange by four retaining plates for sealing engagement with the manway rim, six spaced-apart notches formed in the periphery of the cover plate, one of the notches having a relatively narrow neck portion and a relatively wide base portion, six eye-bolt and nut assemblies pivotally mounted on the manway for movement between locking positions respectively disposed in the notches for holding the cover plate in sealing relationship with the manway and releasing positions disposed out of the notches, a sleeve surrounding the shank of the bolt corresponding to the one notch and constructed and arranged to be accommodated only in the wide base portion of the one notch when the cover plate is closed, whereby the one bolt cannot be pivoted from its locking position until a cover plate is loosened and lifted a predetermined distance sufficient to clear the sleeve from the notch and relieve the pressure in the tank.

6 Claims, 8 Drawing Figures
MANWAY COVER FOR TANK CARS

The present invention relates to railway tank cars and, in particular, to a manway cover assembly for sealing the manway opening of a tank car. It is a general object of this invention to provide a manway cover assembly for a pressure vessel which assembly is of relatively lightweight and economical construction and yet can maintain a tight seal of the manway with the use of a minimum number of clamps or hold-down devices, while providing protection against violent displacement of the cover from the manway during opening thereof.

It is an important object of this invention to provide a cover assembly for a pressure vessel having wall structure provided with an opening therein, said cover assembly comprising a cover plate wherein the cover plate has a peripheral notch formed therein, and further including a bolt mounted adjacent to one end thereof on the associated wall structure for pivotal movement between a locking position disposed in the notch to hold the cover plate in the sealing configuration thereof and a releasing position disposed out of said notch, a nut threadedly engageable with the other end of the bolt for drawing the cover plate into sealing engagement with the associated wall structure to close and seal the opening therein when the bolt is in the locking position thereof, a cylindrical sleeve disposed in surrounding relationship with the bolt intermediate the ends thereof, the notch being provided with a base portion having a width slightly greater than the outer diameter of the sleeve for accommodating the sleeve therein, the notch being provided with a neck portion extending outwardly from the base portion to the periphery of the cover plate and having a width greater than the diameter of the bolt but less than the diameter of the sleeve for preventing passage of the sleeve therethrough, the sleeve extending a predetermined distance into the base portion of the notch when the bolt is disposed in the locking position thereof, raising of the adjacent portion of the cover plate at least the predetermined distance from sealing engagement with the associated vessel serving to relieve the internal pressure therein and effecting withdrawal of the sleeve from the notch thereby to permit pivotal movement of the bolt from the locking position thereof to the releasing position thereof, whereby pivotal movement of the bolt from the locking position thereof to the releasing position thereof is prevented by the sleeve until the adjacent portion of the cover plate has been raised sufficiently to relieve the pressure within the associated vessel thereby to prevent a violent displacement of the cover plate from the vessel by pressure built up therein.

Still another object of the present invention is to provide a cover assembly of the type set forth, wherein the cover plate is provided with a plurality of notches spaced about the periphery thereof, and further including a like plurality of bolts positioned for alignment respectively with the notches when the cover plate is in the closed configuration thereof, and a plurality of nuts respectively threadedly engageable with the other ends of the bolts, the sleeve being disposed in surrounding relationship with one of the bolts intermediate the ends thereof, the notch corresponding to the one bolt being provided with a relatively wide-base portion for accommodating the sleeve therein and a relatively narrow neck portion for preventing the passage of the sleeve therethrough.

Further features of the invention pertain to the particular arrangement of the parts of the manway cover assembly whereby the above-outlined and additional operating features thereof are attained.

The invention, both as to its organization and method of operation, together with further objects and advantages thereof, will best be understood by reference to the following specification taken in connection with the accompanying drawings, in which:

FIG. 1 is a side elevational view of a railway tank car having a cylindrical manway collar at the top thereof, and provided with a manway cover assembly constructed in accordance with and embodying the features of the present invention;

FIG. 2 is an enlarged top-plan view of the manway cover assembly of FIG. 1, with one of the clamp assemblies removed to more clearly show the shape of the notch in the cover plate flange;

FIG. 3 is a further enlarged fragmentary view in vertical section of the manway cover assembly of the present invention, taken along the line 3-3 in FIG. 2;

FIG. 4 is a still further enlarged fragmentary top-plan view of the manway cover assembly shown in FIG. 2, with the clamp assemblies removed to illustrate the different shaped peripheral notches in the cover plate;

FIG. 5 is a further enlarged fragmentary view in vertical section of the safety sleeve clamp assembly of the present invention, taken along the line 5-5 in FIG. 4, with the cover plate shown securely clamped in its sealed configuration;

FIG. 6 is a view similar to FIG. 5, illustrating the cover plate lifted sufficiently to permit pivotal movement of the sleeved eye-bolt to its releasing position, which is illustrated in phantom;

FIG. 7 is a further enlarged fragmentary view in vertical section taken along the line 7-7 in FIG. 4, and illustrating a first embodiment of the gasket retainer plate bolted to the cover plate; and

FIG. 8 is a view similar to FIG. 7 showing an alternative version of the retaining plate which is welded to the cover plate.

Referring now to FIG. 1 of the drawings, there is illustrated a standard railway tank car, generally designated by the numeral 50, which includes a pair of trucks 60 each bearing two pairs of railway wheels 65. Respectively carried by the trucks 60 are bolsters 55 which cooperate to support thereon a tank, generally designated by the numeral 70. The tank 70 includes a cylindrical side wall 75 having the longitudinal axis thereof disposed in use substantially horizontally, the opposite ends of the side wall 75 being respectively closed by generally dome-shaped end walls 76 and 77. Extending upwardly along at least one side of the cylindrical side wall 75 substantially midway between the opposite ends thereof is a ladder 80 connecting with a catwalk 81 extending longitudinally along the top of the side wall 75 and being provided with guard railings 82, all for the purpose of providing access to a generally cylindrical manway collar 90 extending vertically upwardly from the top of the side wall 75 midway between the ends thereof and communicating with the interior of the tank 70 for providing access thereto. The upper rim 95 of the manway collar 90 defines a circular access opening which is closed by a manway cover assembly, generally designated by the numeral 100, con-
structed in accordance and embodying the features of the present invention.

Referring now also to FIGS. 2 through 7 of the drawings, the manway cover assembly 100 includes a cover plate 101 provided with peripheral notches 120 therein and hingedly mounted on the manway collar 90, the cover plate 101 being adapted to be securely held in sealing relationship with respect to the manway opening by means of a plurality of clamp assemblies, each generally designated by the numeral 150. More particularly, the cover plate 101 is generally dome-shaped including a substantially ellipsoidal top portion 102 and a substantially cylindrical side portion 105. Integral with the side portion 105 along the periphery thereof and extending laterally outwardly therefrom substantially normal thereto is a sealing flange 110 which is adapted to be disposed in use substantially horizontally, normal to the axis of the cylindrical manway collar 90. The sealing flange 110 has a flat inner or lower surface 111 provided adjacent to the inner edge thereof with an annular recess 112 for a purpose to be described more fully hereinafter, and a flat outer surface 113 substantially parallel to the inner surface 111, a plurality of apertures 114 extending vertically through the sealing flange 110 for a purpose which will also be explained below. Integral with the sealing flange 110 at the periphery thereof and extending downwardly and outwardly therefrom at an external angle of approximately 45° thereto is a short annular stiffening flange 115.

The cover plate 101 is integrally formed of a single piece of material, preferably metal, the particular shape of the cover plate 101 being achieved by means of stamping or pressing a circular plate of stock material, whereby the top portion 102 has a thickness somewhat less than the thickness of the remainder of the cover plate 101, as a result of the considerable deformation of the stock material. Indeed, the entire stock plate itself may be a relatively thin piece of material, preferably of a range of about 3/8 inch thick, the unique arrangement and shape of the cover plate 101 nevertheless permitting a pressure-tight seal of the manway cover with the use of a minimum number of clamping devices, or as will be explained in greater detail hereinafter.

Preferably, the cover plate 101 is hingedly mounted on the manway collar 90, there being provided for this purpose a pair of identically constructed and laterally spaced-APART hinged plates 116 secured to the inner surface of the sealing flange 110 and the stiffening flange 115 as by weldments 116a, as is best illustrated in FIG. 3. Extending between the hinge plates 116 and fixedly secured thereto is a hinge pin 117, the pin 117 also extending through a complementary opening in a hinge block 118 fixedly secured to the outer surface of the manway collar 90 as by weldments 119. In use, the hinge pin 117 is freely rotatable with respect to the hinge block 118, thereby accommodating pivotal movement of the cover plate 101 between a fully closed position in sealing engagement with the top rim of the manway collar 90, as illustrated in FIG. 3, and an open position (not shown) extending upwardly and outwardly from the hinge block 118 to the right, as viewed in FIG. 3, thereby to prevent unobstructed access to the tank interior through the manway opening.

The cover plate 101 is provided about the periphery thereof with a plurality of radially inwardly extending notches, generally designated by the numeral 120, the notches preferably being six in number and equiangularly spaced about the cover plate 101. Each of the notches 120 extends radially inwardly from the outer edge of the stiffening flange 115 and well into the sealing flange 110, each notch 120 including a generally V-shaped outer portion or mouth 121, the narrow end of the mouth 121 being disposed a slight distance into the sealing flange 110 and communicating with a straight relatively narrow neck portion 123 provided at the inner end thereof with part-circular base 124 having a diameter equal to the width of the neck portion 123. All of the notches 120 are identically shaped and dimensioned, with the exception of one, which has been generally designated 120A. The notch 120A is similar to the notches 120 in that it includes a V-shaped mouth portion 121A and a straight narrow neck portion 123A, but differs from the notches 120 in that it is provided with a part-circular base portion 124A having a diameter substantially greater than the diameter of the neck portion 123A, for a purpose to be described hereinafter.

Disposed on the upper surface 113 of the sealing flange 110 are five generally rectangular support blocks 125, the blocks 125 being respectively disposed immediately above the notches 120 in the cover plate 101. The support blocks 125 are all identically constructed, each having a rear edge disposed against the outer surface of the cylindrical portion 105 of the cover plate 101 and extending radially outwardly therefrom to a point adjacent to the periphery of the sealing flange 110, the bottom rear corner of the block 125 being truncated as at 127 to accommodate the rounded juncture between the cylindrical portion 105 and the sealing flange 110 of the cover plate 101. Each block 125 is secured to the cover plate 101 as by a weldment 129, each block 125 also being provided with a notch 130 therein congruent with the immediately underlying portion of the cover plate notch 120, each notch 130 including a neck portion 133 terminating in arcuate base portion 134. Similarly, a support block 125A overlies the notch 120A and is similarly provided with a notch 130A therein congruent with the underlying portion of the notch 120A, and including a neck portion 133A and enlarged diameter of part-circular base portion 134A.

Disposed in the recess 112 of the bottom surface 111 of the sealing flange 110 is an annular gasket 135, the gasket 135 being so positioned as to engage the rim 95 of the manway collar 90 around the entire periphery thereof when the cover plate 101 is disposed in its closed configuration illustrated in FIG. 3. The gasket 135 may be formed of any suitable material, such as asbestos, neoprene, teflon, or the like. Preferably, the gasket 135 has a radial width greater than the thickness of the manway collar 90 to insure firm sealing engagement therewith even if the cover plate 101 is not precisely centered over the manway collar 90. Similarly, it will be noted that the radial width of the sealing flange 110 is considerably greater than the thickness of the wall of the manway collar 90 to permit use of the cover plate 101 with manway collars of slightly different diameters and thereby obviate precise and exact mating of the cover plate 101 with the manway collar 90.

The gasket 135 is held in place in the recess 112 by four arcuate retainer clips 140 respectively spaced circumferentially about the inner surface 111 of the sealing flange 110 and disposed between the adjacent
notches 120, whereby the retaining clips 140 cooperate to define a segmented retaining ring. Each of the retaining clips 140 is in the form of a flat plate positioned so that the inner edge thereof overlaps the outer periphery of the gasket 112 so as to tightly clamp the gasket 112 between the retaining clip 140 and the inner surface 111 of the sealing flange 110, the retaining clip 140 preferably being held in place by means of bolts 145 and lock washers 146, the bolts 145 being threadedly engaged in the apertures 114 in the sealing flange 110, as is best illustrated in FIG. 7. In the preferred embodiment of the invention, there are two mounting bolts 145 provided for each of the retaining clips 140, but it will be appreciated that any number of mounting bolts may be provided, depending upon the length of the retaining clips 140.

Referring to FIG. 8 of the drawings, there is shown an alternative embodiment, 140A of the retaining clip of the present invention, the retaining clip 140A being essentially identical to the retaining clip 140 in structure and function, but being secured to the inner surface of the sealing flange 110 by means of a weldment 145A. It will be appreciated that the retaining clip 140A may have a radial width slightly less than the width of the retaining clips 140, since there is no need to provide space for the holes for mounting bolts.

Mounted on the outer surface of the manway collar 90 at equidistantly spaced-apart points therealong are six clamp assemblies, generally designated by the numeral 150, for use in clamping the cover plate 101 into sealing engagement with the manway collar 90. Each of the clamp assemblies 150 includes a stiffening flange 115 having a generally horizontally extending attachment flange 152 and a substantially vertically extending mounting flange 153, the bracket 151 being secured to the outer surface of the manway collar 90 adjacent to the rim 95 thereof by suitable means such as weldment 154.

Each of the clamp assemblies 150 further includes an eye-bolt, generally designated by the numeral 160, which includes an eye portion 161 receiving there-through a pivot pin 163, the pin 163 being fixedly secured to the eye 161 and being rotatably mounted on the vertical flange 153 of the mounting bracket 151 to permit pivotal movement of the eye-bolt 160 about the axis of pivot pin 163. The eye-bolt 160 further includes a shank 165 externally threaded at the outer end thereof, as at 166, for threaded engagement with a complementary nut 168, the assembly also being provided with a suitable lock washer 167. The shanks 165 of the bolts 160 have a diameter slightly less than the width of the neck portions 123 of the cover plate 120 so as to be accommodated therein in a manner to be described below. The bolts 160 are so positioned on the manway collar 90 as to be respectively disposed in use in vertical alignment with the notches 120 on the cover plate 101.

The bolt 160 corresponding to the notch 120A is further provided with a cylindrical sleeve 170 disposed in surrounding relationship with the shank 165, the sleeve 170 having an outer diameter slightly less than the diameter of the base portions 124A and 134A of the notches 120A and 130A, but greater than the width of the neck portions 123A and 133A.

In use, the bolts 160 are pivotally movable between a substantially vertically extending locking position, illustrated in a solid line in FIG. 5, and a downwardly extending releasing position, illustrated in phantom in FIG. 6. Normally, when the cover plate 101 is disposed in its closed configuration, illustrated in FIGS. 3 and 5, the bolts 160 are disposed in their locking positions, extending vertically upwardly through the arcuate base portions 124 and 134 of the notches 120 and 130 in the sealing flange 110 and the support block 125. In like manner the sleeve 170 and the bolt 160 surrounded thereby are disposed in the enlarged base portions 124A and 134A of the notches 120A and 130A in the sealing flange 110 and support block 125A. The lengths of the shanks 165 are such as to extend well above the upper surface 113 of the sealing flange 110 when the cover plate 101 is thus disposed in its sealing configuration. The washers 167 are respectively disposed in engagement with the upper surfaces of the support blocks 125, and the nuts 168 are turned tightly down against the washers 167 so as to securely clamp the cover plate 101 and gasket 135 into sealing engagement with the rim 95 of the manway collar 90 to provide a pressure-tight closure thereof.

When it is desired to open the manway cover assembly 100, the nuts 168 are backed off to the position illustrated in FIG. 6, so that the washers 167 may be lifted out of engagement with the support blocks 125. When thus loosened, the five bolts 160 disposed in the notches 120 may be pivoted about the axes of the pivot pins 163 in a counterclockwise direction as viewed in FIG. 6, to the releasing positions thereof, the notches 120A and 130A accommodating passage of the bolt shanks 165 therethrough during this pivotal movement of the bolts 160. However, the bolt disposed in the notches 120A and 130A is prevented from being pivoted to the releasing position thereof by the sleeve 170. More particularly, the axial extent of the sleeve 170 is such that it extends through the sealing flange 110 and well into the support block 125A, and, since the outer diameter of the sleeve 170 is greater than the widths of the neck portions 123A and 133A of notches 120A and 130A, it cannot pass therethrough. Accordingly, it is necessary to first lift the cover plate 101 a slight distance until the bottom surface 111 of the sealing flange 110 lies above the top of the sleeve 170 (as illustrated in FIG. 6), thereby completely withdrawing the sleeve 170 from the notches 120A and 130A, and permit pivotal movement of the bolt shank 165 outwards through the notches in the usual manner.

The axial extent of the sleeve 170 is such that the distance which the cover plate 101 must be lifted to clear the sleeve 170 is sufficient to completely relieve any pressure which may have built up within the tank 170. Thus, it will be appreciated that the sleeve 170 serves as a safety device preventing movement of the corresponding bolt 160 from the locking position thereof until the pressure within the tank 170 has been completely relieved. In other words, the cover plate 101 will be securely restrained by the bolt 160 bearing the sleeve 170, thereby preventing violent displacement of the cover plate 101 by the pressure built up within the tank 70, until such pressure has been safely relieved.

Once the last bolt 160 has been thus moved to its releasing position, the cover plate 101 may then be lifted to its completely open position to provide access to the interior of the tank car. In this regard, it will be noted that the downturned stiffening flange 115 defines a lip which provides a handhold to facilitate the manual movement of the cover plate 101.
In reclosing the manway cover assembly 100, the cover plate 101 is manually lowered to the position illustrated in FIG. 6, spaced a slight distance above the manway collar rim 95 sufficient to permit the sleeve 170 to be pivoted beneath the sealing flange 110. The bolt 160 bearing the sleeve 170 is then pivoted upwardly to the upright position illustrated in FIG. 6, after which the cover plate 101 may be lowered the rest of the way until the gasket 135 engages the manway collar rim 95, the sleeve 170 being received within the arcuate portions 124A and 134A of the notches 120A and 130A, as described above. At this point, the other five bolts 160 may be pivoted upwardly through the notches 120 and 130 back to the locking positions thereof. The nuts 168 are all then drawn up tightly against the washers 167 for securely clamping the cover plate in its closed position to reseal the manway.

It is a significant feature of the present invention that the cover plate 101 may be securely held in tightly sealing relationship with respect to the manway collar 90 by means of only a relatively few clamping devices 150 despite the relatively wide sealing flange 110 on the cover plate 101. Thus, in the preferred embodiment of the invention, only six clamping devices are necessitated to effect a firm seal, and the cover assembly 100 may use as few as five clamping mechanisms 150 and still achieve complete sealing of the manway collar 90. This is permitted, despite the relatively thin-gauge material used in the cover plate 101, by reason of the stiffening provided by the unique construction of cover plate 101. More particularly, the cylindrical side portion 105 and the stiffening flange 115 of the cover plate 101 cooperate to rigidify the sealing flange 110 so that a sealing flange 110 will retain its shape and will provide good sealing at all points along the circumference thereof, even though the clamping force is applied at only a few selected points therealong.

Another important feature of the present invention is that the width of the sealing flange 110 and of the gasket 135 permits use of the cover plate 101 with manway collars 90 having varying diameters so that power sealing is insured even though the cover plate 101 and the manway collar 90 are not precisely matched. As another feature of the present invention, it will be noted that the inner edges of the gasket retainer plates 140 are spaced only a slight distance outwardly of the outer surface of the manway collar 90, whereby the inner edges of the retainer plates 140 can serve to center the cover plate 101 on the manway collar rim 95. This feature may be particularly useful in the case of a fully detachable cover plate 101, which does not have the built-in centering afforded by the hinge mounting.

From the foregoing, it will be seen that there has been provided a novel manway cover assembly for a railway tank car, including a relatively thin-gauge cover plate having a wide sealing flange, the cover plate being uniquely constructed so as to permit tight sealing of manway cover with the use of a minimum number of clamp mechanisms.

There has also been provided a novel manway cover assembly of the character described, which includes a novel retaining member arrangement for holding the gasket in place on the cover plate.

There has also been provided a manway cover assembly which includes a novel safety sleeve on one of the clamping bolts which operates to prevent complete release of the clamping mechanism until the cover plate has been lifted a slight distance sufficient to relieve the internal pressure of the tank, thereby to prevent sudden violent displacement of the cover plate from the manway.

While there has been described what is at present considered to be the preferred embodiments of the invention, it will be understood that various modifications may be made therein, and it is intended to cover in the appended claims all such modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. A cover assembly for a pressure vessel having wall structure provided with an opening therein, said cover assembly comprising a cover plate having a notch formed in the periphery thereof and being hingedly mounted on the associated wall structure for pivotal movement between an open configuration and a closed configuration with respect to the associated opening, a bolt mounted adjacent to one end thereof on the associated wall structure for pivotal movement between a locking position disposed in said notch to hold said cover plate in the sealing configuration thereof and a releasing position disposed out of said notch, a nut threadedly engageable with the other end of said bolt for drawing said cover plate into sealing engagement with the associated wall structure to close and seal the opening therein when said bolt is in the locking position thereof, a cylindrical sleeve disposed in surrounding relationship with said bolt intermediate the ends thereof, said notch being provided with a base portion having a width slightly greater than the outer diameter of said sleeve for accommodating said sleeve therein, said notch being provided with a neck portion extending outwardly from said base portion to the periphery of said cover plate and having a width greater than the diameter of said bolt but less than the diameter of said sleeve for preventing passage of said sleeve therethrough, said sleeve extending a pre-determined distance into the base portion of said notch when said bolt is disposed in the locking position thereof, raising of the adjacent portion of said cover plate at least said predetermined distance from sealing engagement with the associated vessel serving to release the internal pressure therein and effecting withdrawal of said sleeve from said notch thereby to permit pivotal movement of said bolt from the locking position thereof to the releasing position thereof, whereby pivotal movement of said bolt from the locking position thereof to the releasing position thereof is prevented by said sleeve until the adjacent portion of said cover plate has been raised sufficiently to release the pressure within the associated vessel thereby to prevent a violent displacement of said cover plate from said vessel by pressure built up therein.

2. A cover assembly for a pressure vessel having wall structure provided with an opening therein, said cover assembly comprising a cover plate having a closed configuration adapted for covering the opening in the associated vessel and being provided with a plurality of notches spaced about the periphery thereof, a plurality of bolts equal in number to said notches and spaced about the periphery of the associated opening for alignment respectively with said notches when said cover plate is in the closed configuration thereof, each of said bolts being mounted adjacent to one end thereof on the associated wall structure for pivotal movement between a locking position disposed in the corresponding
notch for holding said cover plate in the closed configuration thereof and a releasing position disposed out of said notch, a plurality of nuts respectively threadedly engageable with the other ends of said bolts for drawing said cover plate into sealing engagement with the associated wall structure to close and seal the opening therein when said bolts are in the locking positions thereof, a cylindrical sleeve disposed in surrounding relationship with one of said bolts intermediate the ends thereof, the notch corresponding to said one bolt being provided with a base portion having a width slightly greater than the outer diameter of said sleeve for accommodating said sleeve therein, said one notch being provided with a neck portion extending outwardly from said base portion to the periphery of said cover plate and having a width greater than the diameter of said bolt but less than the diameter of said sleeve for preventing passage of said sleeve therethrough, said sleeve extending a predetermined distance into the base portion of said one notch when said one bolt is disposed in the locking position thereof, raising of the adjacent portion of said cover plate at least said predetermined distance from sealing engagement with the associated vessel serving to release the internal pressure therein and effecting withdrawal of said sleeve from said one notch thereby to permit pivotal movement of said one bolt from the locking position thereof to the releasing position thereof, whereby pivotal movement of said one bolt from the locking position thereof to the releasing position thereof is prevented by said sleeve until the adjacent portion of said cover plate has been raised sufficiently to release the pressure within the associated vessel thereby to prevent violent displacement of said cover plate from said vessel by pressure built up therein.

3. The cover assembly set forth in claim 2, and further including a sealing flange carried by said cover plate and extending laterally outwardly therefrom around and periphery thereof, said notches being formed in said sealing flange.

4. The cover assembly set forth in claim 2, wherein said cover plate includes six notches therein.

5. The cover assembly set forth in claim 2, and further including a plurality of bolt support blocks equal in number to said notches and respectively mounted on said cover plate immediately overlaying said notches, each of said support blocks being provided with a notch therein congruent with the corresponding notch in said cover plate and cooperating therewith to accommodate pivotal movement of said bolt between the locking and releasing positions thereof.

6. The cover assembly set forth in claim 2, wherein the base portion of each of said notches is part-circular in shape.

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