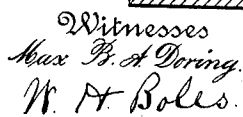


VAULT HEAD.

1,066,736.

2 SHEETS—SHEET 1.



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VAULT HEAD.
APPLICATION FILED FEB. 15, 1905.

1,066,736.

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2 SHEETS—SHEET 2.

Fig. 6,

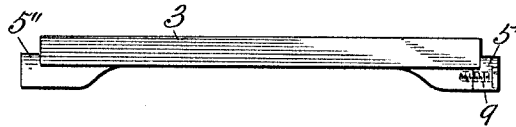


Fig. 7,

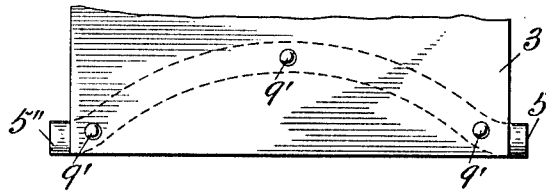


Fig. 8,

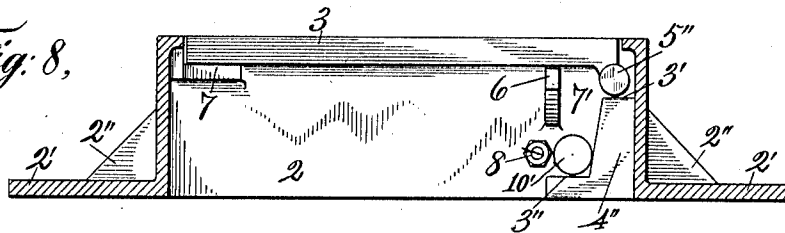


Fig. 9,

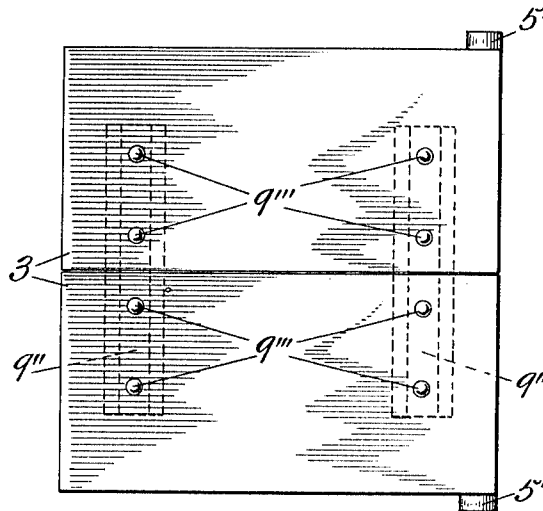
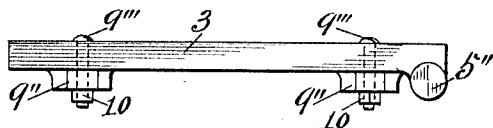


Fig. 10.



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UNITED STATES PATENT OFFICE.

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VAULT-HEAD.

1,066,736.

Specification of Letters Patent.

Patented July 8, 1913.

Application filed February 15, 1905. Serial No. 245,658.

To all whom it may concern:

Be it known that I, JOHN GEORGE KURZ, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Vault-Heads, which improvements are fully set forth in the following specification.

This invention relates to improvements in structures of that class availed of, each for surmounting a subterranean vault or basin and controlling the entrance thereto, the same being commonly known as "vault heads."

The object of this invention is to provide a vault head which shall be simple and inexpensive as regards construction, durable, efficient and reliable in practical service; which shall embody novel features of construction whereby a loosely interlocked relation between the head proper and the cover therefor, is insured, and whereby the operation of manipulating said cover, or shifting the same from its normal or closed position to its guarding or open position, or vice versa, is materially facilitated; and which shall possess certain well-defined advantages over prior analogous structures.

The invention consists in the novel details, parts and combinations to be hereinafter more specifically referred to, and set forth in the appended claims, and whereby the attainment of the foregoing object is rendered practicable.

As to the accompanying drawings, wherein similar reference-numerals denote like parts throughout the several views: Figure 1 is a plan view of a vault head embodying my said improvements, the cover therefor occupying its normal or closed position. Fig. 2 is a vertical section on the line *a—**a* of Fig. 1, the cover being shown in elevation. Fig. 3 is a detail sectional view showing a fragment of the head proper, with the cover therefor fully shifted to its open or guarding position. Fig. 4 is a view similar to Fig. 3, showing an additional adjustment of said cover, and more clearly its coöperative relation, when tilted somewhat forward from its full open or guarding position, to its sustaining webs. Fig. 5 is a vertical section along the line *b—b* of Fig. 1, the cover aforementioned occupying its guarding position and being partially broken away. Fig. 6 is a rear edge view of said cover,

modified to the extent of having one detachable trunnion. Fig. 7 is a plan view of a fragment of said cover, modified to the extent of having a cross-bar removably conjoined therewith and forming opposite trunnions therefor. Fig. 8 is a sectional view similar to Fig. 2, showing slightly modified details of the general construction. Fig. 9 is a plan view of the cover aforementioned, modified to the extent of being formed of connected segments, each of which has a trunnion conjoined therewith. Fig. 10 is a side edge view of the construction shown in Fig. 9.

In a general sense my present invention comprises an angular main member forming a manhole opening, and a cover loosely interlocked with said main member, for normally spanning said manhole opening, said main member being provided with an interior cover-stop, or a plurality thereof, for preventing an undue forward tilting movement on the part of said cover, when occupying its open or guarding position, and directly therefrom.

It further comprises, in a general sense, a main member as stated, and a cover loosely interlocked therewith, said main member being provided, interiorly thereof, with relatively arranged, primary and secondary cover-seats, for sustaining purposes with respect to said cover.

Having reference to the accompanying drawings, 2 denotes an angular main member, approximating the upright walls of an angular box, ordinarily rising from a base 2', and strengthened in its relation to said base by means of webs 2'', said main member forming a manhole in the usual manner, and preferably having an inturned flange or lip 2''' extending more or less continuously along its upper edge.

3 is a cover which normally spans the manhole formed by the main member 2, as clearly illustrated in Figs. 1, 2 and 8 of the drawings, and is tiltable upwardly to assume an open or guarding position, as clearly illustrated in Figs. 3, 4 and 5 of the drawings, said cover approximating the form of a grate or otherwise, as conditions may warrant, and serving, when occupying the position last alluded to, to guard the manhole aforementioned at the side thereof then occupied by the cover, as will be clearly understood.

Interiorly of the main member 2, and rearwardly thereof, I provide a suitably-elevated, primary cover-seat 3', which sustains, under normal conditions, the rear portion of the cover 3, (Figs. 2 and 8), and a secondary cover-seat 3'', depressed below the level of the seat 3' and situated somewhat forwardly thereof, said seat 3'' serving to sustain the cover 3 during the occupancy by said cover of its open or guarding position, (Figs. 3, 4 and 5).

While I have shown the seats 3' 3'', (in Figs. 2, 3, 4 and 5) as being arranged in conjunction with one of the side-walls of the main member 2, it is obvious that the same may be otherwise arranged, as at or in conjunction with, the rear wall of said main member. It will also be understood that when the seats 3' 3'' are arranged at one of the side-walls of the member 2, the lifting and closing operation of the cover 3 will be facilitated by the employment of like primary and secondary cover-seats, 4, 4', at the opposite side-wall of the main member 2, as illustrated in the drawings.

Seats 3' 3'' are here shown as being formed by conjoining, as with the adjacent side-wall of the member 2, a general, inwardly-projecting member 4'', having a horizontal surface at its top, providing the seat 3', and an additional, depressed, horizontal surface, in advance of the first named horizontal surface, providing the seat 3'', the seats 3' 3'' being by preference connected by a surface 4''' somewhat rearwardly inclined from the seat 3'' upwardly to the seat 3'; and preferably the member 4'', providing the seats 3' 3'', is formed integral, as with the adjacent side-wall of the member 2, by the process of casting, and during the operation of producing said main member, the latter being conveniently and cheaply produced by the process of casting.

The foregoing remarks relative to the formation of the seats 3' 3'', respectively, also apply to the formation of the seats 4, 4', respectively, when, and which ordinarily should be, availed of, a reverse duplicate of the member 4'', denoted by the reference-numeral 5, and having an inclined surface 4'''' corresponding to 4''', being conjoined with the side-wall of the member 2 opposite to that referred to in connection with the member 4'', and in opposition to said member 4''.

Primarily to secure a loosely interlocked relation between the cover 3 and the main member 2, which is desirable in most instances, and secondarily to facilitate the disposition of the seats 3' 3'' for a coöperative relation with respect to said cover, I provide the latter, rearwardly along the side thereof adjacent to said seats, with an outwardly projecting stud or trunnion 5', which in practice takes under the lip 2''' at that

side of the head proper, said cover being introduced to its position of service with respect to said head, by primarily passing the same, with its front edge uppermost, upwardly through the head proper, and then readjusting it so that the trunnion 5' will engage and rest on the seat 3', under normal conditions; move off said seat forwardly, upon a due upwardly tilting movement being imparted to said cover at the front thereof, thereby allowing the cover to fall until said trunnion engages seat 3'', the parts then assuming, say, the relation indicated in Fig. 4; and whereupon said cover may be easily brought, by a moderate force properly directed thereagainst at its upper portion, to its full open or guarding position, as indicated in Fig. 3.

Cover 3, where the member 5 forming the seats 4, 4' is employed in addition to the member 4'', forming the seats 3' 3'', is provided at its opposite side edge, and in opposition to the trunnion 5', with a duplicate of the latter, denoted by the reference-numeral 5'', said trunnion 5'' coöperating with the seats 4, 4' after the manner specified with respect to the trunnion 5' in its relation to the seats 3' 3''.

It will be observed that the seat 3'' is extended farther away from the side-wall of member 2 at which it is located, than the seat 3'. This feature of the construction may be employed so that when trunnion 5' moves forwardly along and leaves the seat 3', thereby allowing the cover to fall, as hereinbefore stated, the impact of said cover on the seat 3'' need not ordinarily be directed wholly against the trunnion 5', but more or less against the entire corner of said cover at which trunnion 5' is located,—these remarks also applying to the trunnion 5'' and seat 4', when respectively used, the latter, said seat 4', being also extended away from the side-wall of member 2, at which it is located, farther than the seat 4. Manifestly, however, if either of the trunnions 5' 5'', as availed of, is made of adequate dimensions, as the same may be readily made in practice, liability of the same being broken off, through the falling action of said cover, will be obviated, and it will not be necessary to extend either of the seats 3' 4' as stated.

Trunnions 5' 5'' preferably correspond in cross-sectional contour, and the same, respectively, may be general heart-shaped, circular, or of any other appropriate contour, in cross-section, as indicated in the drawings.

I further employ, interiorly of the member 2, at the side-wall thereof at which the seat 3' is located, a cover-stop 6, the same preferably taking the character of a vertically arranged web, formed integral with said side-wall of member 2; and I also, by

preference, employ a duplicate of said cover-stop, at the opposite side-wall of member 2, the same being denoted by the reference-character 6'. Either of these cover-stops primarily serves, as when the cover 3 is adjusted to the position shown in Fig. 4, to check said cover against the further downward or closing movement thereof, except upon an upward or lifting force being primarily applied thereto; whereupon said cover-stop, (6 or 6'), serves as a fulcrum on which the cover may be readily turned, or may voluntarily readily turn, in the general returning movement thereof to its closed or normal position. Again, I purpose to provide the cover 3 with a laterally open recess 6'', (Fig. 5), for coöperation with the cover-stop 6, said recess being located at the side of said cover adjacent to the stop 6; and where stop 6' is used, as should ordinarily be the case, I purpose to also employ a similar recess 6''', at the opposite side of said cover, for coöperation with the last-named stop.

Assuming that the cover shall have been adjusted to the position it is shown as occupying in Fig. 3, or Fig. 4, and is provided with a recess or recesses as just referred to, in order that said cover may be returned to its normal or closed position, it is necessary that the same be first lifted somewhat bodily to permit the cover-stop or cover-stops aforementioned to enter, and bear on the preferably rounded face or faces of, said recess or recesses, respectively; whereupon, said cover, by its own gravity, primarily swings or turns downwardly on said stop or stops, the same serving in this connection as a fulcrum or fulcrums for said cover, to a position in which the front margin of the cover rests upon the upper edge of the front wall of member 2, the trunnion or trunnions aforementioned sliding, during this turning or swinging action of the cover, upwardly along the inclined surface or surfaces, (4'', 4'''), respectively, and thereby causing the front margin of said cover to overlap the front wall of member 2, as stated; and thereafter, the rear portion of the cover being lifted somewhat, and the cover urged or carried rearwardly until its front edge becomes freed from its engagement with the front wall of member 2, said cover falls into its closed or normal position, as shown in Figs. 1, 2 and 8 of the drawings, the trunnion or trunnions aforementioned then occupying the primary, internal seat or seats aforementioned, and the front margin of the cover being then supported in any approved or appropriate manner, as by one or more horizontal corner webs 7. The recess 6'' and stop 6 are so relatively located that said stop projects upwardly somewhat beyond the upper edge of said recess, when the cover 3 occupies the position shown in Fig. 4; and

said stop, by being accordingly engaged by said cover, prevents the latter from further undergoing any portion of its closing movement, as by a force directed, accidentally or otherwise, against the rear face of said cover. One of the advantages of this construction is, that the cover, when occupying the position last referred to, serves as a signal that the manhole is uncovered, and at the same time is enabled to withstand a substantial force, such as might be directed thereagainst by a passing vehicle, the head being preferably set so that the cover, when open, stands transversely with respect to the street in which the head is set. The foregoing remarks with respect to the recess 6'' and stop 6 also apply to the recess 6''' and stop 6', as will be readily understood.

It is obvious that the seat 3'' may be located as far down from the top of the head as desired; but the farther down it is located the farther upwardly the cover must be lifted, primarily during the operation of closing the same. For this reason, and accordingly to avoid the lifting of the cover unnecessarily, it is desirable that the seat 3'' be located as near the top of the head as may be found practicable; and since the distance between seat 3'' and the top of stop 6 should be at all times sufficient to prevent the cover from falling forward into an approximately horizontal position, the location of said seat with respect to the top of the head is manifestly dependent upon how far upwardly the stop 6 may be located. Thus the object and desirability of arranging the stop 6 so that the same will project upwardly beyond the bottom of the normally disposed cover, as through the medium of the recess 6'', is made clear. In instances where a cover of substantial thickness is employed, it is particularly desirable that the stop 6 be arranged to project upwardly beyond the bottom of the cover, as stated. The foregoing remarks with reference to seat 3'', stop 6 and recess 6'', also apply to seat 4', stop 6' and recess 6''', as will be readily understood.

Trunnions 5' 5'' are each set at the extreme rear edge of the cover, the lower rear portion thereof being angular, by preference, as shown in Figs. 2, 3 and 4, so as to provide a substantial bearing-face therefor, and hence for the cover 3, when normally adjusted and at the latter's extreme rear edge, for engagement with the seats 3' 4, respectively, the latter being situated directly thereunder. This construction, as will be readily understood, prevents the upward displacement of the front margin of cover 3, under any pressure applied downwardly at the extreme rear margin or edge of said cover, and constitutes an important feature of my invention. Again, a trunnion of the form shown in Figs. 2, 3 and 4 is

further preferred for the reason that while the angular portion thereof provides, as stated, a substantial bearing-face for engagement, under normal conditions, with the adjacent primary cover-seat, its rounded portion permits the reduction to a minimum of the area of the lateral socket-like space 7', within which said trunnion moves or operates; and this constitutes an important feature of my invention, since the ease with which the cover 3 might be "angled" out from its operative position with respect to the member 2, is proportionate to the magnitude or extent of the area of said socket-like space. Also, where the dimensions of the socket-like space aforementioned are to be materially increased, in order to prevent the angling out of the cover 3, as stated, its trunnion should be suitably increased in length, or arranged to project farther therefrom, and said socket-like space should be correspondingly increased in lateral depth. The foregoing remarks apply, as will be readily understood, where the trunnions 5' 5'' are both used, or either of them is separately used.

The general inner face of member 4'' is here shown as being flush with the inner edge or flange 2'', this being done so that the cover 3 may clear the member 4'', in the operation of raising the same to its full open or guarding position, as shown in Fig. 3. While it is not imperative that the cover 3 shall thus clear the member 4'', this feature of the construction is preferred for the reason that it permits the cover 3 to be so adjusted as to provide for a maximum manhole area in any complete head of a given size and fitted with an interlocked cover substantially as herein set forth.

From its normal position cover 3 may be opened or raised by lifting the front margin thereof, the same as if said cover were hinged at its rear or opposite margin or edge thereof. In this operation of cover 3, its rear edge is caused to bear against the adjacent wall or flange of the member 2, and movement of its trunnion or trunnions forwardly off the primary seat or seats aforementioned, is thereby effected; whereupon the cover descends by its own gravity to and rests upon the secondary seat or seats aforementioned, said cover being then readily adjustable to the position shown in either Fig. 3 or Fig. 4.

I prefer that where the respective members 4'' and 5 are, or either of them is, arranged at one of the side-walls of the member 2, an open space 7'' be provided at the rear of such member or members, which space will tend to prevent the accumulation of dirt, and the like, on the primary seat or seats aforementioned, such dirt, and the like, being measurably cleared from said seat or seats by the trunnion or trunnions afore-

named, in the closing operation of the cover 3, and falling downwardly by way of such space into the basin beneath.

The cover 3 having been adjusted for service in connection with the member 2, as hereinbefore described, in order to confine said cover to its proper field of action, and also prevent its displacement from said member downwardly through the same, I provide a confining-stop 8, here shown as taking the character or form of a short, headed bolt, projecting outwardly through the side-wall of the member 2, blocking the entrance to the socket-like space 7', and threaded to receive at its outer end a retaining-nut 8'. This feature of the construction is preferably duplicated at the opposite side-wall of the member 2, where 8'' is the headed bolt and 8''' the nut therefor.

While I have shown the confining-stop aforementioned as being detachable from the adjacent side-wall of member 2, it will be understood that said stop may be formed integral with said side-wall; but in this latter instance one or more of the cover-trunnions should be detachable from said cover. In this connection I have shown in Fig. 6, (rear edge view), the trunnion 5' as being formed as a distinct part, shouldered for strengthening purposes, and removably secured to the cover 3 by a fastening screw or bolt 9.

In Fig. 7 I have shown the trunnions 5' 5'' as constituting the respective end-portions of a separate strip or segment of metal, or other suitable material, preferably bowed as indicated in dotted lines, and secured to the cover 3, at its underside, by fastening rivets, bolts, or the like, 9'.

In Fig. 8 the cover-trunnion is shown as being of a general circular contour, and the space 7'', at the rear of member 4'', is omitted.

In Figs. 9 and 10 I have shown the cover 3 as comprising a plurality of trunnioned segments, interconnected, as by means of one or more cleats 9'' and fastening bolts 9''', each of the latter passing through one of said segments and one of said cleats, and receiving a retaining-nut 10.

Where the removable trunnion 5', (Fig. 6), is used the rear portion of cover 3 may be inserted downwardly into member 2, said trunnion being thereafter applied and secured to said cover by way of a suitable opening 10', (Fig. 8), formed in the side-wall of member 2, said opening being preferably thereafter closed in any common and well known manner, and to prevent displacement of said cover downwardly through the member 2, any appropriate means, as the stop 8, or the extension of the stop 6 more downwardly, may be availed of.

The segments of the cover shown in Figs. 9 and 10 are separately inserted in the mem-

ber 2, and then secured together by means of the cleats 9" and bolts and nuts 9" 10, respectively, as will be clearly understood.

The operation of my improved vault head will be apparent from the foregoing description thereof; and as the same may be modified to some extent without departure from the spirit of my invention, I do not wish to be limited to the precise details of construction and arrangement of the parts herein set forth.

Having thus described my invention what I claim and desire to secure by Letters-Patent, is:

1. A vault-head comprising a main member forming a manhole and provided with interior cover-seats at opposite sides thereof, and interior cover-stops, also at opposite sides thereof, each of said cover-stops being arranged above the adjacent cover-seat; and a cover for normally spanning said manhole, said cover being movable from its normal position to a substantially upright position, and oppositely supported in its latter position by said oppositely-arranged cover-seats, and said oppositely-arranged cover-stops checking and holding said cover, at its opposite side margins, against a return movement thereof, from its said substantially upright position to its said normal position, until said cover shall have been lifted bodily somewhat, substantially as herein specified.

2. A vault-head comprising a main member forming a manhole, and provided with a cover-stop, and a cover for normally spanning said manhole, said cover having a recess normally receiving said cover-stop and permitting the same to project above the bottom of the cover when normally disposed, and said cover-stop thereby serving to fulcrum said cover in the general opening and closing movements thereof, means to prevent the upward removal of the cover from the main member, substantially as herein specified.

3. A vault-head comprising a main member forming a manhole and provided with a cover-stop and a cover-seat, the latter situated below said cover-stop; and a cover for normally spanning said manhole, said cover being movable from its normal position to a substantially upright position, supported in its last-named position by said cover-seat, and provided with a recess for normally receiving said cover-stop, the distance from the rear edge of said cover to the forward wall of said recess being less than the distance from the supporting-face of said cover-seat to the top of said cover-stop, substantially as herein specified.

4. A vault-head comprising a main member forming a manhole and provided with an interior primary cover-seat and an interior secondary cover-seat, the latter situated

below and somewhat in advance of said primary cover-seat, and said cover-seats being connected by an upwardly and rearwardly inclined surface; a cover for normally spanning said manhole, said cover being movable from its normal position to a substantially upright position, and supported in its normal and upright positions, respectively, by said primary and secondary seats and means to prevent the upward removal of the cover from the main member; and a cover-stop, the latter conjoined with said main member forwardly of said seats, substantially as herein specified.

5. A vault head comprising a main member forming a manhole, a cover, primary seats to support the cover in a horizontal position across the manhole opening, secondary seats at one side of the manhole opening and below the primary seats and engaged by the end of the cover when the cover is in a substantially vertical position, and a stop on the main member near one side thereof and above the secondary seats, said stop serving to prevent the cover swinging back to its horizontal position without bodily lifting said cover.

6. A vault head comprising a main member forming a manhole, a cover, a primary seat on the main member for supporting the cover in its horizontal position, a secondary seat below the primary seat and in position to be engaged by the cover when in a substantially upright position, and stops on the interior of the main member between said primary and secondary seats and by which the cover is held in its upright position when said cover rests on the secondary seat, said stops checking and holding said cover from falling from its upright position until said cover shall have been bodily lifted sufficiently to release it from the said stops for the replacing of said cover in its normal horizontal position.

7. A vault head comprising a main member forming a manhole, a cover, upper primary seats for said cover, an upper stop adjacent said seats and engaging the under side of the cover, lower secondary seats, a stop adjacent said lower seats and engaged by the outer side of the cover when said cover is in its vertical position, the lateral distance between said stops being less than the vertical distance between the primary and secondary cover seats, whereby the cover must be bodily lifted before it can be swung over the upper stop from its vertical to its horizontal position.

8. A vault head comprising a main member forming a man hole, a cover, an upper primary seat for supporting said cover in its normal horizontal position, a lower secondary seat to support said cover in a substantially vertical position, stops on the main member adjacent said primary and

secondary seats, and means carried by the cover for interlocking said cover with the main member between said seats and the said stops, whereby the cover may be moved
 5 from a horizontal to a substantially vertical position and bodily lifted between said seats but cannot be detached from the main member.

9. A vault head comprising a main member forming a manhole, a cover spanning the manhole opening and formed with lugs near one of its ends, means on the main member surrounding said lugs and forming vertical ways or channels within which said lugs
 10 may be moved vertically, and cover seats at the upper and lower ends of said ways whereby the cover may be bodily lifted throughout the limit of said ways, portions of the walls of the vertical ways or channels
 15 forming stops to hold the cover in a substantially upright position until said cover shall have been lifted to free it from said stops.

10. A vault head comprising a main member forming a manhole and having an in-turned flange at its upper edge, primary cover seats near one side of said main member below said flange, secondary cover seats below the primary seats, cover stops below the flange and adjacent the primary seats
 20 and above the secondary seats, a detachable stop or abutment between the cover stops and the secondary seats, a cover for normally spanning the manhole opening, said cover having lugs at one edge extending
 25 into the space between the cover seats, the flange, the cover stop and the removable abutments, and serving to interlock the cover with the main member and permitting
 30 said cover to be vertically shifted between the primary and the secondary seats.

11. A vault head comprising a main member forming a manhole, a cover, a primary seat on the main member for supporting
 35 the cover in its horizontal position, a secondary seat below the primary seat and in position to be engaged by the cover when in a substantially upright position, stops on the interior of the main member between said
 40 primary and secondary seats and by which the cover is held in its upright position when said cover rests on the secondary seat, said stops checking and holding said cover from falling from its upright position until
 45 said cover shall have been bodily lifted sufficiently to release it from the said stops for the replacing of said cover in its normal horizontal position, a lug carried by the cover and means carried by the main member
 50 cooperating with the said lug on the cover to interlock the cover with the main member to prevent the cover being detached from the main member, but permitting it to be shifted bodily between the said primary
 55 and secondary seats.

12. A vault head comprising a main member forming a man hole, a cover normally spanning the man hole and formed with recesses in its under side, a primary seat to support said cover in its horizontal position,
 60 a lower secondary seat to support said cover in a substantially vertical position at one side of the man hole opening, stops on the main member to prevent the cover swinging to its normal closed position until
 65 it has been bodily lifted somewhat to bring the recesses in its under side into position to receive said stops, a stop on the main member above the primary seat, and stops on the main member between the primary
 70 and secondary seats, a lug on the cover co-acting with the said seats and stops, to interlock the cover with said main member while permitting the vertical bodily movement of the cover.

13. A vault head comprising a main member formed with primary seats to support the cover in its normal spanning position, lower secondary seats to support the cover
 75 in its vertical position at one side of the manhole opening, cover stops adjacent the primary seats, a cover normally spanning the manhole opening and formed with recesses in its under side directly over the said
 80 cover stops, said stops normally projecting into said recesses when the cover is in its normal spanning position, said recesses permitting the cover to be readily shifted from its horizontal to its vertical position and the
 85 reverse.

14. A vault head comprising a main member forming a manhole, a cover, a primary seat on the main member to support said
 90 cover in its horizontal position, a secondary seat on the main member to support said cover in an upright position, stops on the main member, a lug or stop on the cover coacting with the said stops and seats on the
 95 main member to interlock the cover with the main member while permitting said cover to have a bodily movement between said primary and secondary seats.

15. A vault head comprising a main member forming a manhole and provided with primary seats to support the cover in its
 100 spanning position and with lower secondary seats to support the cover in a vertical position, cover stops on the main member adjacent the primary seats, a cover normally spanning the manhole opening and provided
 105 with lateral enlargements or lugs at its side edges adapted to engage the primary seats, said lugs being flush with the adjacent edges of the cover whereby downward pressure on the cover at the edge carrying the lug and
 110 directly over the primary seats will not swing the cover on said enlargements or lugs and whereby the cover must be bodily shifted laterally to disengage said lugs from said
 115 primary seats when swinging the cover

from the primary seats to the secondary seats.

16. A vault head comprising a main member forming a manhole, a cover normally spanning the manhole opening, a primary seat to support said cover in its normal spanning position, a secondary seat to support said cover in a substantially upright position, a lug carried by the cover and stops carried by the main member coöperating with the said lug on the cover and interlocking the cover with the main member to prevent the cover being detached from the main member but permitting it to be shifted bodily between the said primary and secondary seats.

17. A vault head comprising a main member forming a manhole, a cover, a lug formed on said cover, two seats formed on said main member and adapted to receive said lug in the different positions of the cover, stops formed on the main member and coacting with said seats to surround the lug on the cover to prevent the disconnection of the cover from the main member,

said lug and stops being separated a suitable distance to permit of a bodily movement of the cover from one to the other of said two seats, one of said stops being detachable from the main member to permit the cover to be passed downwardly through the main member.

18. A vault head comprising a main member forming a manhole, a cover, a lug formed on said cover, two seats formed on said main member and adapted to receive said lug in the different positions of the cover, stops formed on the main member and coacting with said seats to surround the lug on the cover to prevent the disconnection of the cover from the main member, said lug and stops being separated a suitable distance to permit of a bodily movement of the cover from one to the other of the said two seats.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."