March 30, 1943. C. H. WELLER 2,315,236

SUPPORTING HOOD FOR INLET AND MANHOLE COVERS

Filed Feb. 28, 1941

Fig. 1.

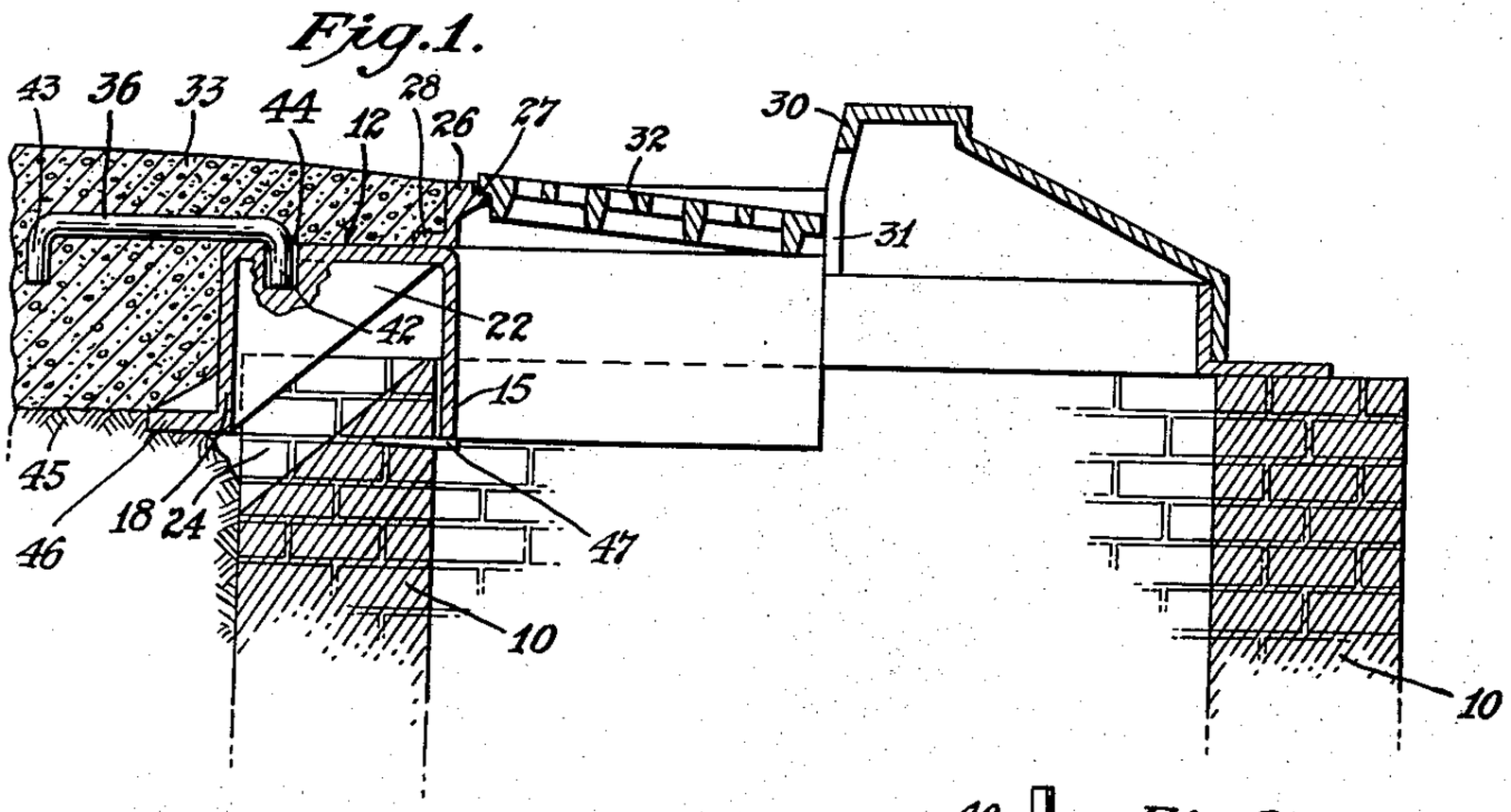


Fig. 2.

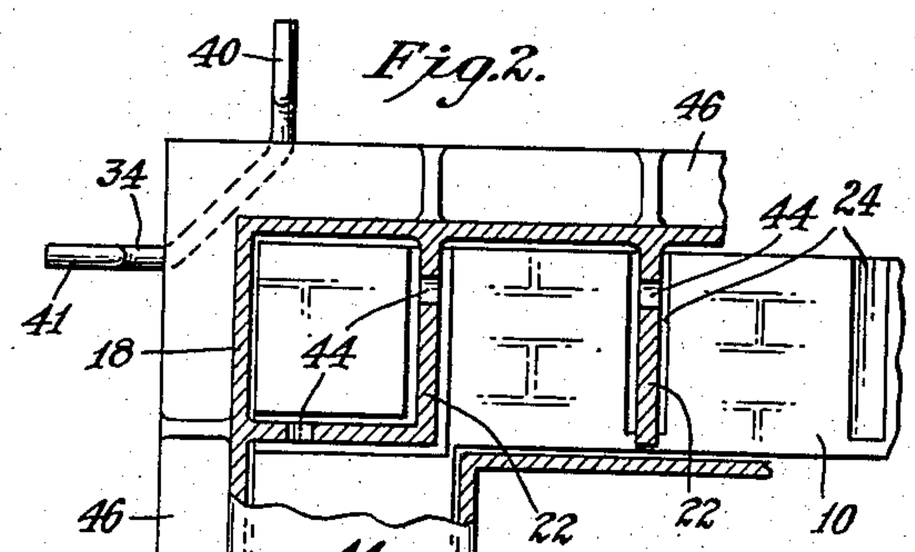


Fig. 4.

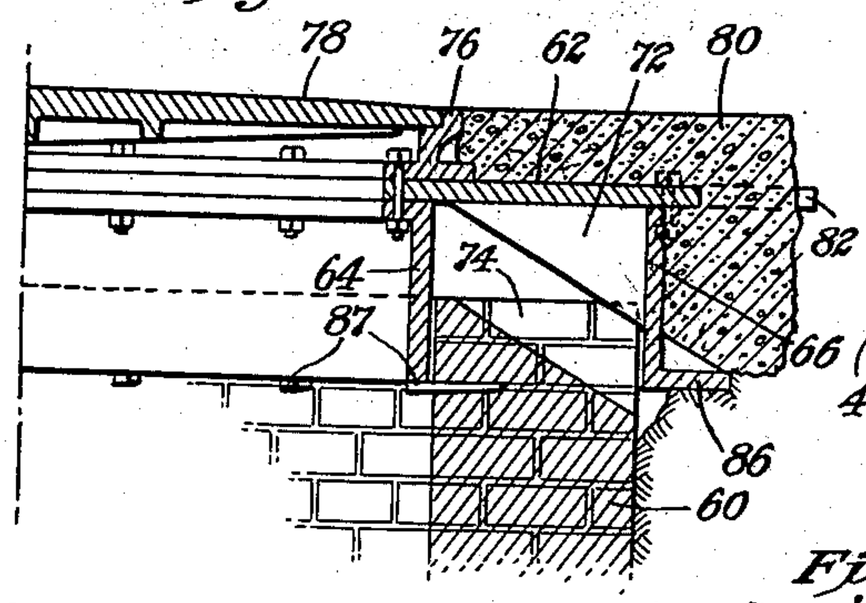
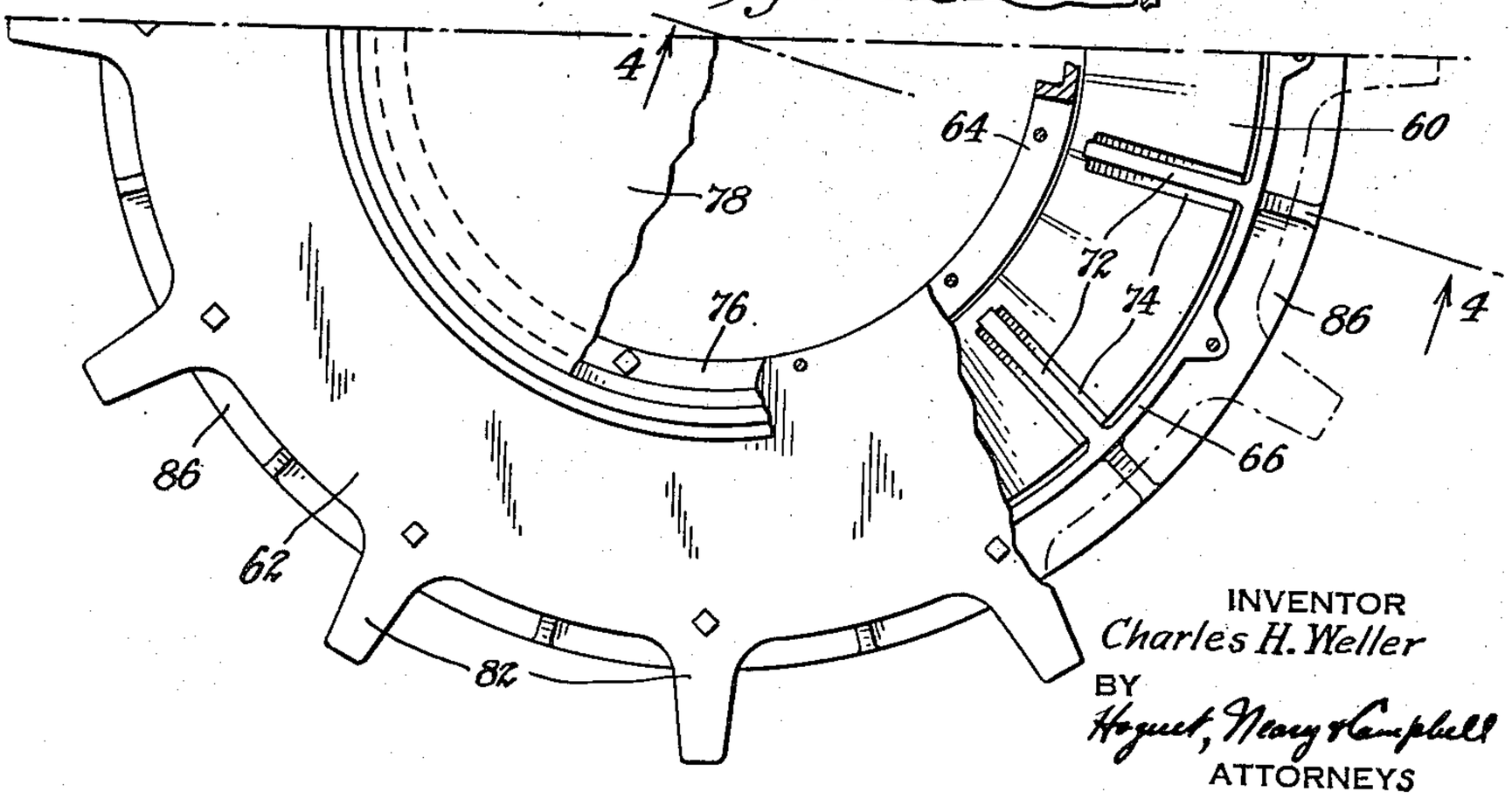


Fig. 3.



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SUPPORTING HOOD FOR INLET AND MANHOLE COVERS

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4 Claims. (Cl. 94—34)

This invention relates to pavements and other similar constructions which include drains, catch basins, manholes and like structures, and more particularly to a hood to be supported by the pavement in spaced covering relation to the top portions of the walls forming the drains, catch basins, manholes, etc., to thereby maintain the grating or covering members therefor in proper position relative to the top surface of the pavement should the pavement settle or otherwise dip or move relative to the walls thereof.

It has been recognized heretofore that pavements and like constructions sometimes settle or dip a substantial amount after being built, and also when subjected to certain heavy loads, move relatively to the drain inlets and manhole structures and their supporting walls. This relative movement and settling of the pavement not only ruptures the pavement adjacent the drains and manhole structures but also leaves such structures protruding above the top surface of the pavement with adjacent low non-drainable waterpockets.

To avoid the occurrence of this condition, it has been proposed heretofore to provide a cover and sleeve arrangement for manholes adapted to be supported by the pavement with the sleeve movable telescopically into and along the inside of the wall of the manhole. This proposed construction, however, is not satisfactory for the reason that the top portion of the walls of the manhole extends beneath the adjacent pavement with but a shallow layer of dirt therebetween. Thus, when the layer of dirt becomes packed, the pavement actually rests solidly upon the top of the manhole wall so that little or no settlement or telescopic movement at the manhole is possible. Thus, should the pavement settle or dip in the vicinity of a manhole of such a construction, the pavement is bound to rupture adjacent the manhole and leave the manhole neck and cover portions protruding above the surface of the pavement.

Other manhole constructions heretofore proposed have been provided with means whereby the neck portion of the manhole could be manually adjusted after the pavement has settled. This adjustment, not being automatic, is never made until after the pavement has been ruptured and considerable road repair is required.

Bearing in mind the shortcomings of such prior constructions to automatically and properly take up the settlement or movements of pavement relative to the walls of drains, manholes and like structures, it is one of the objects of the present invention to provide such structures with means whereby substantial relative movement of the adjacent pavement is rendered possible without the danger of causing the pavement to rupture adjacent thereto or the inlet or cover portions of such structures to be displaced relative to the top surface of the pavement.

Another object of the present invention is to provide an improved top construction for the walls of drains, catch basins, manholes and like structures, adapted to be carried by the pavement for movement therewith relative to the walls of such structures.

A further object of the invention is to provide a hood structure for the walls of drains, catch basins, manholes and like structures, which defines the inlet openings thereof and supports the inlet or covering members of such structures for a substantial movement with the adjacent pavement should the pavement settle or move relative to the walls of such structures.

The above and additional objects and features of my invention are obtained by providing a hood comprising a top member and sides connected thereto to completely cover the top portion of the walls of drains, catch basins, manholes and like structures, together with means to support the hood on the adjacent pavement or other structure with the top member of the hood in spaced relation to the top surfaces of such walls. The hood thus supported defines the marginal edges of the inlet to the underlying drain or manhole chamber and provides means to support the grating or covering member therefor for movement with the pavement should the pavement settle or move relative to the wall thereof. My new hood construction is such that it provides a substantial space between the top member thereof and the top surfaces of the walls of drains, manholes and similar structures so as to accommodate for all normal settlements or dips which are apt to occur in the pavement.

For a better understanding of the invention, reference is had to the following detailed description to be read in connection with the accompanying drawing, in which:

Fig. 1 is a view in vertical section of a drain provided at the curb of a pavement construction and showing one embodiment of my invention;

Fig. 2 is a fragmentary plan view of a corner portion of the hood construction shown in Fig. 1;

Fig. 3 is a fragmentary plan view of another embodiment of my invention applied to a manhole construction; and

Fig. 4 is a view in vertical section taken along line 4—4 of Fig. 3.

Referring to Figs. 1 and 2 of the drawing, I have shown one embodiment of the present invention applied to a drain construction wherein the sump chamber therefor is surrounded by the usual wall 10 which may be of brickwork, concrete or other suitable construction. The hood construction comprises a top member 12 of a width sufficient to span the top portion of the wall 10. An inside member or flange 15 depends from the inner marginal edge of the top member 12 and extends downwardly along the inside surface of the wall 10. An outside downwardly extending member or flange 18 is similarly provided along the outer marginal edge of the member 12. The outer member 18 is spaced from the inner member 15 a distance adequately to receive the top portion of a wall 10 therebetween. The hood thus constructed is adapted to cover and move vertically relative to the top portion of the wall.

To reenforce the hood at the inner marginal edge thereof a plurality of brackets 22 are provided which extend between the members 15 and 18. While these brackets depend from the top member 12 they do not limit the spacing between the member 12 and the top of the wall 10 since I provide recesses 24 of a shape similar to and somewhat larger than the brackets 22 to receive the brackets as the hood moves down relative to the wall 10.

Along the inner marginal edge of the hood I provide an inlet defining member 26 suitably shaped to rest upon the top member 12, the member 26 being provided with a flange 28 onto which the concrete pavement extends so as to anchor and maintain the member 26 in position. The member 26 is provided with a suitably shaped ledge 27 on which covering structures, such as the grating 32, are removably supported. If desired, the member 26 may be secured to or made integral with the hood.

This hood construction may extend over the entire upper portion of the chamber wall 10 or it may extend over only that portion of the wall which underlies or is contiguous to the pavement 33. In Fig. 1 I have shown a hood construction for that part of the drain extending outwardly from the curbing 30 which is supported directly on the wall 10. The end portions of the hood fit closely adjacent and in sliding relation to the vertical wall portions 31 of the curbing. Thus, for any settling or dipping of the pavement at or adjacent the drain, the pavement will carry the hood and grating 32 with it relative to the wall 10 and the curbing 30.

While I have shown the hood for the drain in Fig. 1 to extend only to the curbing, it should be understood that the hood can be extended to underlie the curbing as well, and in fact cover the entire upper portion of the wall, if desired.

To anchor the hood to the pavement 33 I associate with the hood, either integrally or separately, a plurality of elements with parts thereof extending outwardly from the hood to be embedded in the pavement when it is poured. Where the hood is rectangular in plan, as shown in Figs. 1 and 2, the corners are provided with an element, such as 34, disposed with the central portion thereof beneath the flange 46. Each member 34 is suitably shaped so that the ends 40 and 41 thereof extend upwardly into the body of the pavement adjacent the hood to adequately anchor the hood thereto.

Side elements 36 may also be provided along the sides of the hood between the corners thereof. The ends 42 of the elements 36 may be inserted in openings 44 formed in the top member 12 in alignment with the brackets 22, the other ends 43 thereof being disposed outwardly from the hood and extending downwardly in the pavement as illustrated in Fig. 1.

In the installation of the hood the bottom flange 46 of the outer member 18 is allowed to rest upon the dirt 45 surrounding the wall 10 to support the hood in position preparatory to and during the pouring of the concrete. In jobs requiring other or additional support for the hood, I provide a plurality of pegs 47 extending from the inner side of the wall 10. When the concrete has set, the pegs 47 may be cut or otherwise removed so as to free the hood for movement with the pavement.

Referring to Figs. 3 and 4 of the drawing, I have shown another embodiment of my hood construction applied to a manhole. The manhole is shown surrounded with a wall 60 which is substantially annular in plan. The hood comprises a top plate 62 which is of a size and shape adapted to overlie the top portion of the wall 60. Inner and outer tubular members 64 and 66 are connected to the top plate 62 along the inner and outer marginal edges thereof. The outer member 66 is provided with a plurality of brackets 72 which extend radially inwardly toward the inner tubular member 64. To accommodate these brackets I provide a plurality of recesses 74 arranged radially in the top portion of the wall 60. On the plate 62 I provide a member 76 to support the cover member 78, the upper edge of the member 76 being substantially flush with the pavement 80 to define the extent of the manhole opening.

In order to properly anchor the hood for movement with the pavement 80, the top plate 62 may be provided with attachable elements, such as 34 and 36 in the form shown in Figs. 1 and 2, or provided with integral extensions 82. While the members 62, 64 and 66 have been shown as separate parts secured together by bolts, it is to be understood that these parts can be formed integral as indicated in connection with the embodiment illustrated in Figs. 1 and 2.

To install the manhole hood, a flange 86 is provided on the member 66 to rest upon the dirt adjacent the wall 60. Pegs 87 may also be used to support the hood either with or without the aid of dirt until the concrete has set sufficiently to carry the hood. The dirt surrounding the walls of the drains, manholes and like structures, while providing a temporary support for the hood, acts much like a cushion to the flange of the outer member, the dirt giving way the same as when other parts of the foundation for the pavement settles. Further, the sides of the hood maintains the space between the top of the wall and the top member of the hood clear of dirt and other substances so that relative movement is assured.

From the foregoing it will be readily apparent that I have provided a simple and sturdy hood construction which is readily incorporated into the paving structure, either as an integral unit or as an assemblage of parts, to provide a spaced covering for the top walls of drains, catch basins, manhole and like structures. My hood construction when anchored to the pavement defines an inlet opening for the drain or other structure and maintains the grating or cover member there-

for substantially flush with the top surface of the pavement even though the pavement settles, dips, or otherwise moves relatively to the underlying wall structure.

While I have shown and described several different embodiments of my invention, I recognize that many additional modifications and adaptations of my invention are possible without departing from the spirit thereof. It should therefore be understood that the forms of the invention herein illustrated and described are intended to be illustrative only and not as limiting the scope thereof.

I claim:

1. In a construction of the character described including a chamber surrounded by a wall and a pavement disposed adjacent thereto, a hood to cover the top of said wall comprising a top member, a side member depending from the outer margin of said top member to extend downwardly adjacent the outer surface of said wall, at least one of said members being provided with openings and rods adapted to be hooked into said openings and extend outwardly from the hood to be embedded in the pavement and thereby support said hood with the top member spaced above the top of the wall.

2. In a construction of the character described including a wall and an adjacent structure resting on a foundation which is apt to settle and move relative to the wall, a hood for the wall comprising a top member adapted to overlie in spaced relation the top of the wall, two spaced apart side members depending from said top member and overlapping opposite sides of the wall in spaced relation, means projecting outwardly from one of said side members between said structure and said foundation and resting on the latter for supporting said hood and means projecting from said hood for anchoring said hood to said structure.

3. In a construction of the character described including an open top chamber surrounded by a wall and a pavement disposed adjacent thereto with an opening therein in substantial alignment with the open top of said chamber, said pavement being supported on a foundation, a hood to cover the top of said wall adjacent to said pavement comprising a top member overlying the top of and spaced from said wall, a member extending along and depending from the outer margin of said top member to overlap the outer surface of said wall, another member extending along and depending from said top member to overlap the inner surface of said wall, means projecting laterally from said hood for anchoring said hood to said pavement with the top member in spaced relation to the top of said wall and means projecting laterally from said hood engaging the undersurface of said pavement and resting on said foundation for movement therewith.

4. A manhole construction comprising a wall defining a chamber, a hood for the wall, the vertical cross-section of the hood being in the form of an inverted U with the top of the U spaced from the wall and the sides thereof telescoping therewith, a flange along the outer margin of the hood adapted to seat on a surrounding foundation, a cover seat provided along the top of the hood and means projecting outwardly from said hood for anchoring the hood to an adjacent pavement, whereby the hood can settle with the foundation.

CHARLES H. WELLER.