

Sept. 2, 1941.

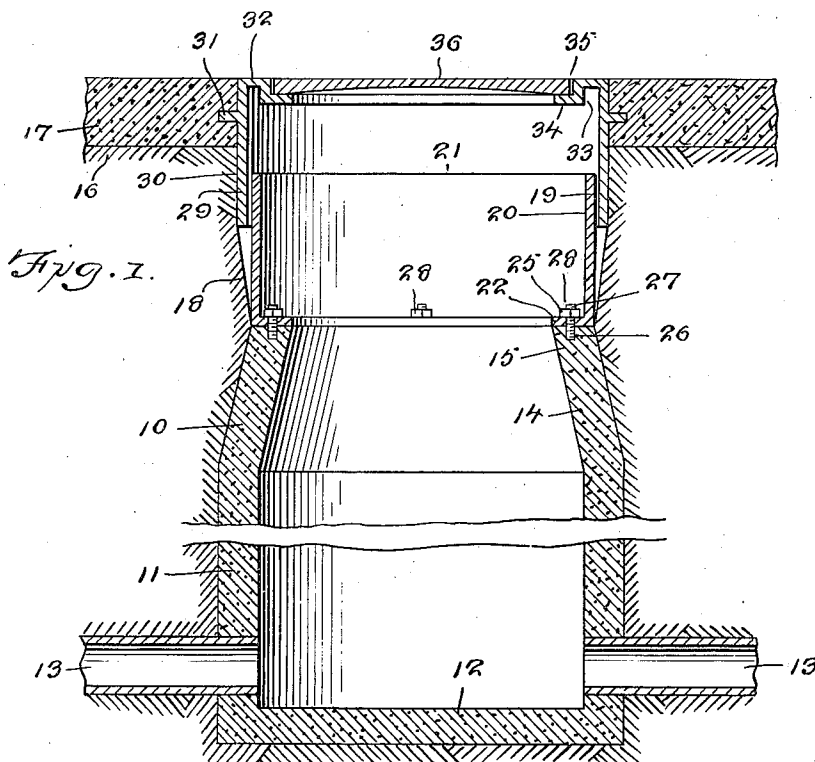
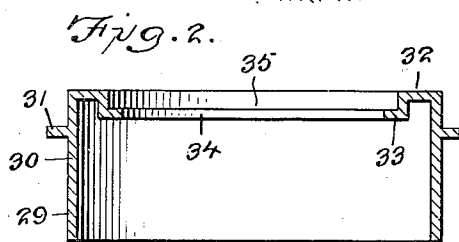
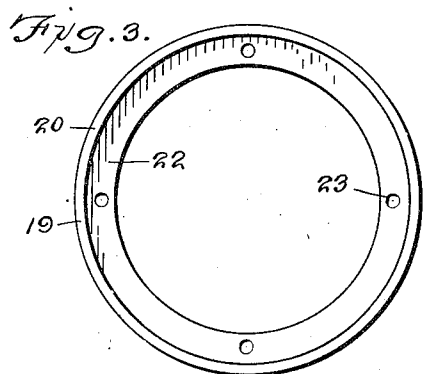
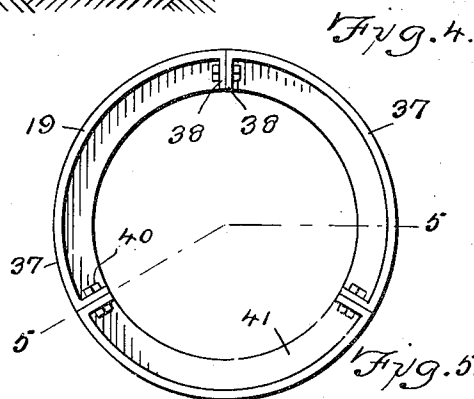
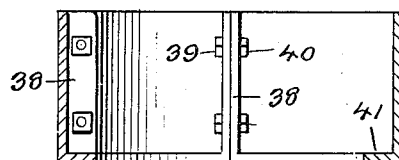
A. O. TOMEK

2,254,668

EXPANSION MANHOLE TOP

Filed April 10, 1939

2 Sheets-Sheet 1



Arthur O. Tomek
BY Victor J. Evans & Co.
INVENTOR
ATTORNEYS

WITNESS

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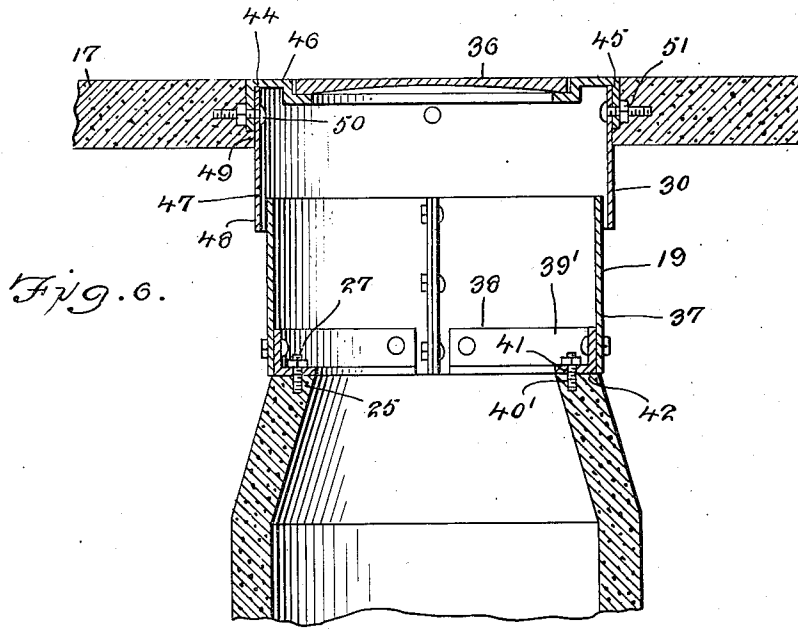
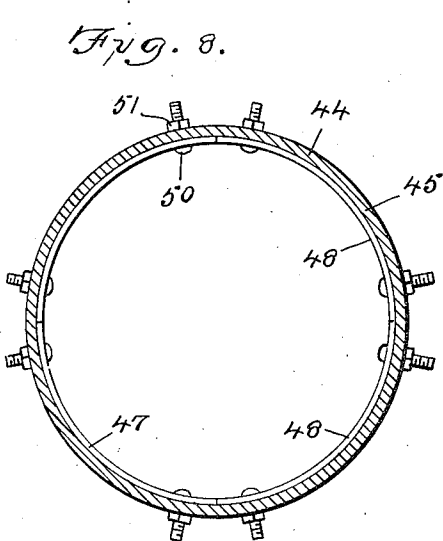
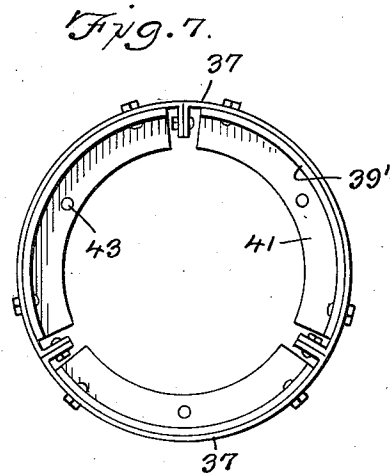
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EXPANSION MANHOLE TOP

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WITNESS

UNITED STATES PATENT OFFICE

2,254,668

EXPANSION MANHOLE TOP

Arthur O. Tomek, Two Rivers, Wis.

Application April 10, 1939, Serial No. 267,109

2 Claims. (Cl. 94—34)

My invention relates to new and useful improvements in manhole top.

An important object of my invention is to provide a manhole top that is adapted to be embedded in the pavement and that will accommodate itself to the movements of the pavement as it settles or to movements of the same after a heavy truck, or the like, has passed thereover.

Another object of my invention is to provide a manhole top that may be embedded in concrete pavement and that will accommodate itself to the vertical and horizontal movements thereof due to weather or mechanical causes without causing excessive stresses to be effected in either the pavement or the manhole structure.

Still another object of my invention is to provide a manhole top that is simple in construction, and that may be readily and expeditiously installed in concrete road pavements.

Other objects and advantages of my invention will be apparent during the course of the following description.

In the drawings, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a vertical sectional view of a device embodying my invention, and showing the same associated with a manhole structure and a concrete road pavement,

Fig. 2 is a vertical sectional view of an annular collar embodying a part of my invention,

Fig. 3 is a top plan view of an annular base embodying a part of my invention,

Fig. 4 is a top plan view of a modification of the said annular base,

Fig. 5 is a vertical sectional view, taken on the line 5—5 of Fig. 4,

Fig. 6 is a vertical sectional view of a further modification of the annular base and collar,

Fig. 7 is a top plan view of the form of annular base illustrated in Fig. 6, and

Fig. 8 is a further modification of the said collar.

In the accompanying drawings, wherein for the purpose of illustration, are shown preferred embodiments of my invention, the numeral 10 designates a manhole supporting wall of concrete, or the like, the lower portion 11 of which is of substantially cylindrical formation having a closed concrete bottom 12 and horizontally disposed conduit tubes 13 communicating therewith. The upper portion 14 of the wall 10 is inwardly convergent and the upper edge 15 thereof terminates a substantial distance from the surface of the ground which is designated by the

numeral 16. A concrete pavement 17 covers the surface of the ground around the manhole structure 10 and it is vertically separated therefrom by the earthy wall 18.

5 Annular base 19 is formed with a vertical wall portion 20 having an open upper end 21, and the lower peripheral edge thereof is bent inwardly to form a supporting lip 22. The inwardly extending horizontally disposed lip 22 is provided with a plurality of apertures 23 which receive the anchor bolts 25. The anchor bolts 25 are screw-threaded and the lower portion 26 thereof is inserted in the concrete wall 10 when the same is in the plastic, or unset, state and 10 with the upper portion 27 extending upwardly therefrom. The apertures 23 of the base 19 receive the upwardly extending ends 27 of the anchor bolts and the nuts 28 are threaded thereon to maintain the base 19 securely positioned on the manhole wall 10. The inner periphery of the lip 22 is adapted to register with the inner periphery of the top 15 of the wall 10 and comprises, in effect, an upward continuation of the said wall.

25 The lower portion 29 of the collar 30 is disposed in telescoping relation to, and is unsupported by, the upper portion of the annular base 19. An annular flange 31 is formed on the collar adjacent the top thereof and extends into the body of the concrete pavement 17 a sufficient distance to support the said collar in suspended relation therefrom, the upper edge of the collar is bent inwardly as at 32, and downwardly as at 33, and the inner edge 34 thereof is disposed inwardly to form the annular recess 35. A cover 35 plate 36 is supported by the edge 34 within the recess 35 and is adapted to cover the top of the manhole 10 and to form a contiguous surface with the concrete pavement 17 so that traffic may 40 pass safely thereover.

The collar 30 is embedded in the pavement 17 when it is in a plastic state and it is obvious that a certain amount of settling will be effected during the setting or hardening period of the concrete. The annular base 19 is simultaneously attached to the top of the manhole wall 10. The overlapping or telescoping relation of the lower portion 29 of the collar 30 with the upper portion of the base ring 19 will prevent the earthy wall 18 from collapsing and gaining access to the interior of the manhole 10, and the fact that the lower portion 29 of the collar 30 is not supported by or connected to the base 19 will permit the pavement 17 and manhole 10 to set independently of each other and without causing ex-

cessive stresses to be applied to either due to an unyielding connection therebetween.

After the concrete has set, wide changes in temperature will cause an expansion and contraction of the concrete, or the freezing of the ground below the concrete will cause the pavement 17 to be elevated slightly thereby, resulting in a rupture if the same were unyieldingly connected to the manhole 10. Heavily loaded vehicles such as trucks, or the like, cause a slight movement in the pavement as they pass, and in the event such a vehicle passes over the top of the manhole, the collar 30 will permit said movements to be effected independently of the manhole 10.

If desired, the base ring 19 may be formed with a plurality of arcuate sections 37. The formation of the base ring in sections permits the same to be easily taken apart or crated for shipping, and in the event that breakage should occur, it would be possible to replace any section without disturbing the other sections. The sections 37 are formed at either end thereof with inwardly disposed flanges 38 in which are formed suitable apertures to receive the bolts and nuts 39 and 40, and the bottom peripheral edge of the sections are bent inwardly to form the supporting rim 41. As illustrated in Figs. 4 and 5, the sections forming the base ring 19 are three in number and when they are connected by the bolts and nuts 39 and 40 they form a continuous annulus substantially the same as the integrally formed ring hereinbefore described.

If desired, the inwardly extending rim 41 may be made independently of the sections 37, as illustrated in Figs. 6 and 7. When this is desired, angle irons may be employed which are of arcuate formation in plan and with the vertical web 39' thereof welded, or otherwise secured, to the lower portion of the sections, and with the bottom face 40' of the horizontal web 41 in register with the lower edge 42 of the sections. The horizontally disposed web 41 is provided with apertures 43 to receive the upwardly extending portions 27 of the anchor bolts 25.

For the purpose of crating and shipping the collar 30 may be made in sections, as illustrated in Fig. 6. A ring 44 is formed with an outer annular skirt 45 and including an inwardly bent upper portion 46 which is formed to support the cover 36. A tubular skirt 47 has the lower portion 48 thereof disposed in telescoping relation to the upper portion of the base ring 19 and the upper portion 49 thereof is secured to the skirt 45 of the ring 44 by means of bolts and nuts 50 and 51. The shanks of the bolts 50 project out-

wardly of the skirt 45 and are embedded in the concrete pavement 17 to hold the ring securely positioned with respect thereto.

In Fig. 8 a further modification of the collar is shown wherein the tubular skirt 47 is formed in a plurality of arcuate sections 48 which are secured to the skirt 45 of the ring 44 by bolts and nuts 50 and 51.

It is to be understood that the forms of the invention, herewith shown and described, are to be taken as preferred examples of the same, and that various changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of my invention, or the scope of the appended claims.

Having described my invention, I claim:

1. In a manhole structure, the combination of arcuated sections joined to form a tubular surrounding wall; a ring adapted for support by the concrete pavement overlaying the said manhole; a plurality of arcuated plates extending circumferentially around the inner periphery of the said ring and forming a depending annular skirt disposed in telescoping relation to but in no way supported by the said surrounding wall in a manner to be freely vertically movable either upwardly or downwardly relative to the surrounding wall; and bolt means connecting the said arcuated plates to the said ring and having shanks extending exteriorly of the said ring and forming a means for anchoring the said ring and plates in the said concrete pavement.

2. In a manhole structure, a supporting wall; a plurality of arcuated plates joined to form a surrounding wall structure; angle supporting brackets having the vertical web thereof fastened to the lower peripheral edge of the said surrounding wall and the horizontal web thereof being supported by the said supporting wall; means to anchor the said angle supporting brackets to the said supporting wall; a ring adapted to be supported by the concrete pavement overlaying the said manhole; a plurality of arcuated plates extending circumferentially around the inner periphery of the said ring and forming a depending annular skirt disposed in telescoping relation to but in no way supported by the said surrounding wall in a manner to be freely vertically movable either upwardly or downwardly relative to the surrounding wall; and bolt means connecting the said arcuate plates to the said ring, the shanks of said bolts extending exteriorly of the said ring and forming a means for anchoring the said ring and plates in the said concrete pavement.

ARTHUR O. TOMEK.