

Aug. 9, 1927.

1,638,428

H. L. ZANDER

HIGHWAY CULVERT

Filed April 25, 1925

Fig. 1.

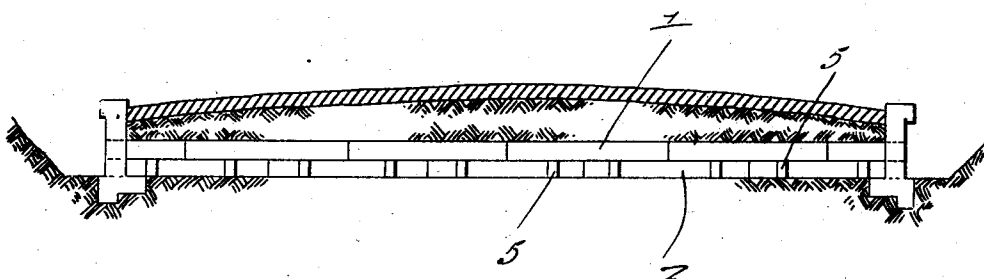


Fig. 2.

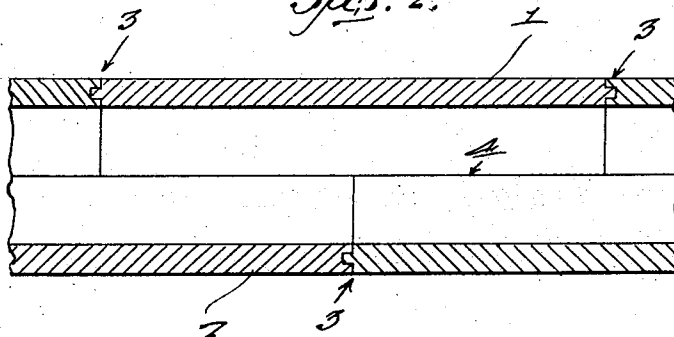
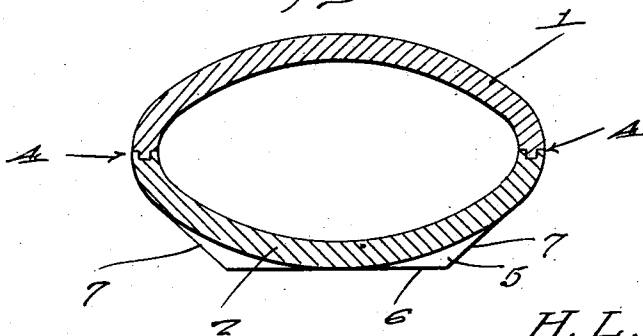


Fig. 3.



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HIGHWAY CULVERT.

Application filed April 25, 1925. Serial No. 25,840.

This invention relates to an improved culvert, such as is used upon highways, and it has reference to the type of culvert that is embedded in the road bed. The ordinary culvert, so far as I know, is substantially circular in cross section. It frequently happens that it is desirable to dispose the culvert in the road bed close to the traction surface of the road bed. With the circular culvert, the same must either be embedded too deep, or must be unduly large in cross sectional area.

In view of the foregoing, the present invention has been evolved with a view toward providing a culvert which is substantially elliptical in cross section whereby to provide a culvert which may be the same in height as a comparatively large circular culvert, but which will afford additional internal area to facilitate drainage, and to allow it to be embedded in the road bed close to the surface.

The invention is also characterized by an elliptical culvert wherein the same is made of half sections connected together by tongue and groove joints, the lower halves being provided with transverse ribs serving as reinforcing means and as a means for anchoring the culverts to guard against longitudinal slippage.

Another feature is the special formation of the ribs which serve as an effective seating for the lower sections of the structure.

Other features and advantages will be derived from the following description and drawing.

In the accompanying drawing forming a part of this application and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a cross section through a highway road bed showing the complete culvert embedded therein.

Figure 2 is an enlarged fragmentary section taken through the center of the culvert.

Figure 3 is a cross section through the same.

As before intimated, the improved culvert is made up of top and bottom half sections 1 and 2 respectively. Each section is substantially semi-elliptical in cross section and when the two sections are brought together, a substantially elliptical conduit is provided. As shown in Figure 2, tongue

and groove connections 3 are disposed between the abutting ends of the respective sections. Also, as seen in Figure 3, tongue and groove connections 4 are disposed between the meeting faces of the upper and lower sections. This type of connection permits easy sliding of the top sections upon the bottom sections, and this is desirable inasmuch as when the culvert is completed, the joints are disposed in break-joint fashion. This form of joint is much superior to a single joint which extends completely about the circumference of the culvert such as is ordinarily the case with the circular cross section conduit. A superior feature of the invention is that each bottom section is provided with one or more transverse ribs 5 and from Figure 3 it will be noted that the central portion of the rib is flat as at 6 while the ends 7 are inclined. The ribs are preferably formed integral with the sections, and serve a two fold purpose; first, to decidedly reinforce the sections upon which they are mounted, and to prevent endwise slipping and side rocking of the completed culvert. It should be noted that the ribs terminate short of the ends of the bottom section to which they are attached, and this allows the dirt to be filled under and packed tightly around the culvert to prevent accidental displacement. It should also be noticed that the flat bottom and inclined ended ribs facilitate installation of the culvert in the ditch, and facilitate assembling of the sections.

It is thought that a careful consideration of the description in connection with the drawings will enable persons skilled in the art to which the invention relates to obtain a clear understanding of the same. For this reason a more lengthy description is thought unnecessary.

While the preferred embodiment of the invention has been shown and described, it is to be understood that minor changes coming within the field of invention claimed may be resorted to if desired.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:—

In a culvert structure of substantially elliptical cross section having a horizontal major axis and formed of top and bottom half-sections, longitudinally spaced rein-

forcing ribs on the external surface of the bottom section, said ribs functioning additionally as weight elements to lower the center of gravity of said lower section and
5 being of a length considerably less than the width of said lower section, the ends of the ribs being inclined downwardly and in-wardly and the bottom edges being flat, and cooperating means between the meeting edges of said top and bottom half-sections 10 to prevent relative transverse shifting of the top section on the bottom section.

In testimony whereof I affix my signature.

HENRY LOUIS ZANDER.