Dec. 4, 1934. R. T. LANE 1,982,995

CULVERT

Filed Sept. 9, 1933

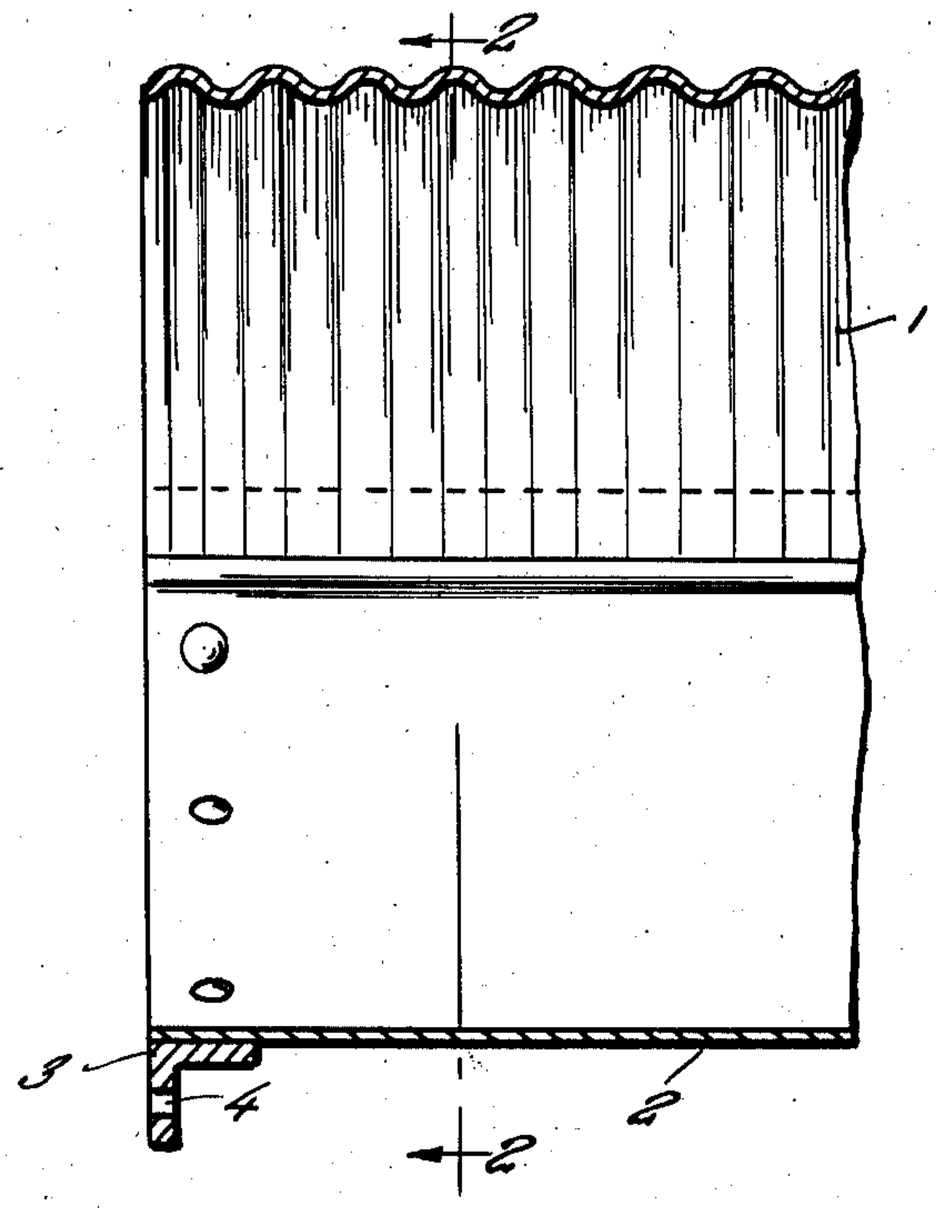


Fig. 1.

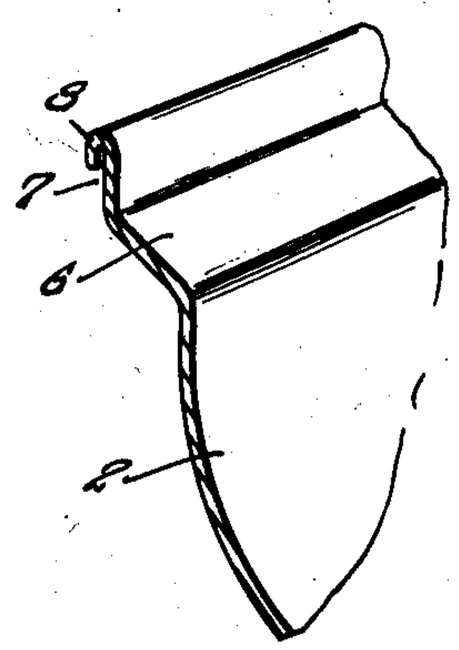


Fig. 3.

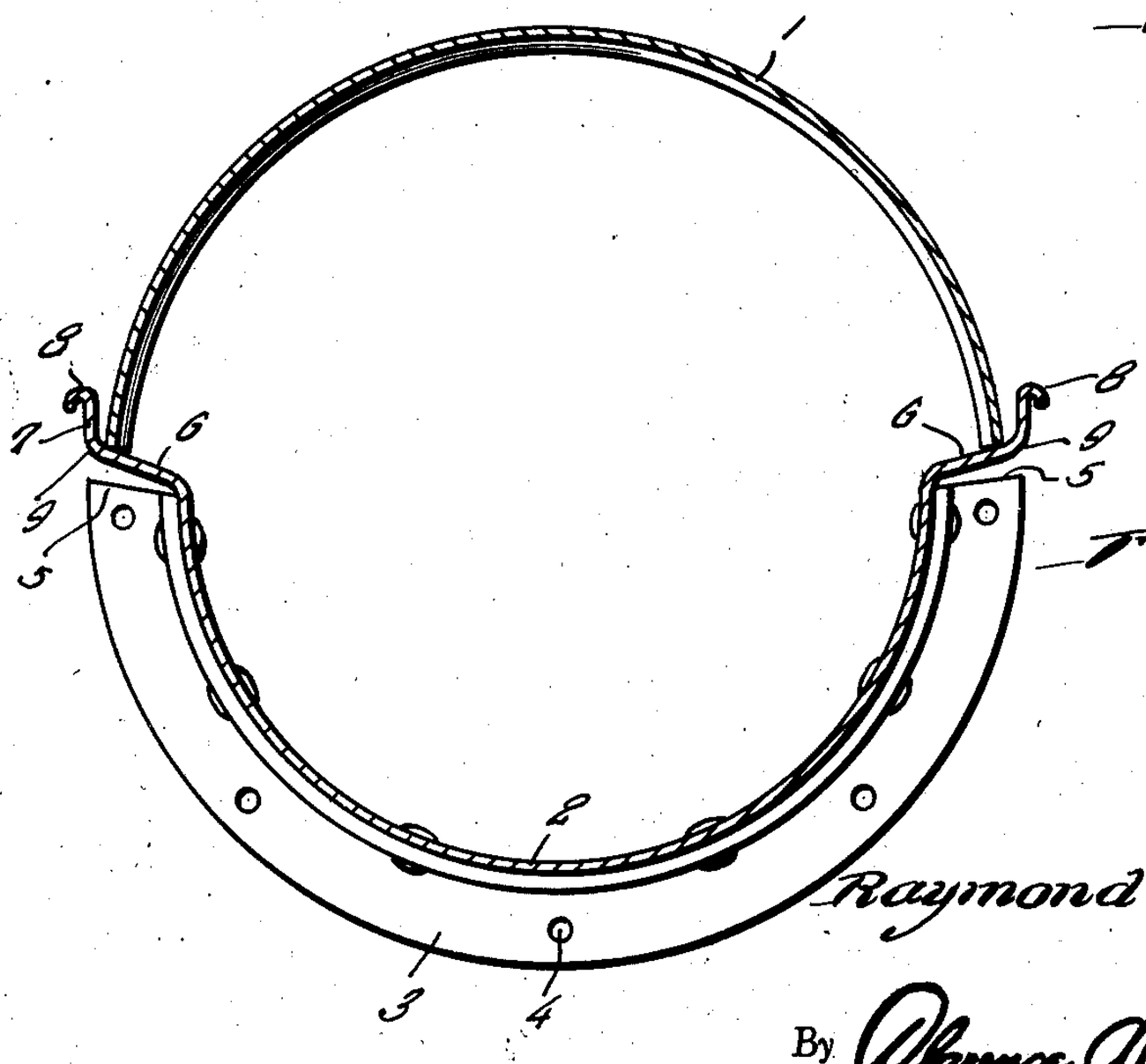


Fig. 2.

Inventor

Raymond T. Lane

By Clarence A. O'Brien

Attorney

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CULVERT

Raymond T. Lane, Bath, N. Y.

Application September 9, 1933, Serial No. 688,838

2 Claims. (Cl. 137—75)

This invention relates to a culvert, the present invention being an improvement over that forming the subject matter of my U. S. Patent No. 1,935,273, issued November 14, 1933.

The general object of this invention is to connect the shelves with the edges of the lower section of the culvert and to have these shelves normally occupy a position spaced from the ends of the cradles, these shelves, however, moving downwardly upon said ends of the cradles when the weight of the material on the upper section forces the parts downwardly so that this downward movement of the shelves will pack the material beneath for bearing value as well as causing this material to become more impervious to water seeping from above.

Another object of the invention is to make the shelves and the upper ends of the cradles slope inwardly so that any water flowing down the upper section will be caught by the shelves and directed into the culvert, thus preventing this water from washing out the material under the culvert.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claims.

In describing the invention in detail reference will be had to the accompanying drawing wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a fragmentary longitudinal sectional view through the improved culvert.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a fragmentary view showing how the shelf is formed with the lower section of the culvert.

In these views, the numeral 1 indicates the upper section of the culvert which is preferably corrugated, as shown, and the numeral 2 indicates the lower section which is made plain or smooth so that it will offer little resistance to the flow of water through the culvert. The semi-circular cradles are attached to the exterior of this lower section and one of these cradles is shown at 3, it being understood that as many of these cradles can be used as desired. The drawing shows a cradle at an end of the culvert and of angle shape in cross section and the end cradles may be formed with the holes 4 so that one section of a culvert can be attached to another section by placing bolts through these holes. This permits the culvert to be made as long as desired.

The end of each cradle slopes slightly inwardly, as shown at 5, and each side edge of the lower section 2 is bent to provide the shelf 6 and then bent again upwardly to provide the flange 7, the upper edge of the flange being rolled, as at 8, to reinforce the parts. However, instead of forming the section 2 and the flanges and the shelves of one piece of material, as shown in the drawing, the parts can be made of separate pieces suitably connected together. This is desirable where the culvert is of large construction.

The parts have a certain amount of resiliency as they are formed of spring steel or the like and the shelves 6 normally are spaced from the sloping ends 5 of the cradles, as shown in Figure 2. However, when the upper section 1 is placed on the shelves, as shown in Figure 2, and the dirt or other material placed thereon the weight will force the shelves downwardly upon the sloping ends 5 of the cradles, and this downward movement of the shelves will pack the dirt under the shelves which, as before stated, will form a bearing for the shelves and make the dirt more impervious to water seeping from above. The flanges 7 will prevent the side portions of the upper section from moving outwardly beyond the shelves and as the flanges are spaced from the sides of the section 1, they will catch any water flowing down the section 1 and the sloping shelves will direct this water into the culvert so that it will not wash the dirt from around the culvert.

The corrugated top section is formed slightly less than a true half circle and its edges rest upon the rounded parts 9 where the flanges 7 connect with the shelves 6. Thus the corrugated edges of the upper section, resting upon the rounded parts 9, provide sufficient opening for the passage of any water that has entered the space between the edges of the upper section and the flanges. If desired, however, notches or openings may be formed in the lower edges of the top section to provide for rapid passage of water into the culvert.

As will be seen, the horizontal diameter of the top section is much greater than this diameter of the bottom section and this construction, together with the smooth bottom section and the arrangement of the shelves, will provide a culvert which will carry considerably more water in a given length of time than culverts as now constructed of circular type.

It is thought from the foregoing description

that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What is claimed is:—

1. A culvert of the class described comprising a bottom section, cradles supporting the bottom section and connected with the outer face thereof, said cradles having inwardly and downwardly sloping ends, shelf forming portions connected with the upper portions of the bottom section and formed of resilient material and normally occupying a position above the ends of the cradles, upstanding flanges connected with the outer edges of the shelf forming portions, a top section having its edges resting on the shelf forming parts, said shelf forming parts moving downwardly under the weight of the material placed on the top section, whereby said shelf forming portions are supported by the ends of the cradles in an inwardly and downwardly sloping position to direct water from said shelf forming portions into the bottom section.

2. A culvert of the class described comprising a bottom section, cradles supporting the bottom section and connected with the outer face thereof, said cradles having inwardly and downwardly sloping ends, shelf forming portions formed with the upper edges of the bottom section and formed of resilient material and normally sloping upwardly and outwardly above the ends of the cradles, upstanding flanges formed with the outer edges of the shelf forming portions, the upper edges of said flanges being rolled outwardly and downwardly, and a top section having its edges resting on the shelf forming parts, said shelf forming parts moving downwardly under the weight of the load placed on the top section.

RAYMOND T. LANE.