

J. R. RANKIN & J. H. LARRICK.
METALLIC CULVERT.
APPLICATION FILED DEC. 15, 1910.

1,013,440.

Patented Jan. 2, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

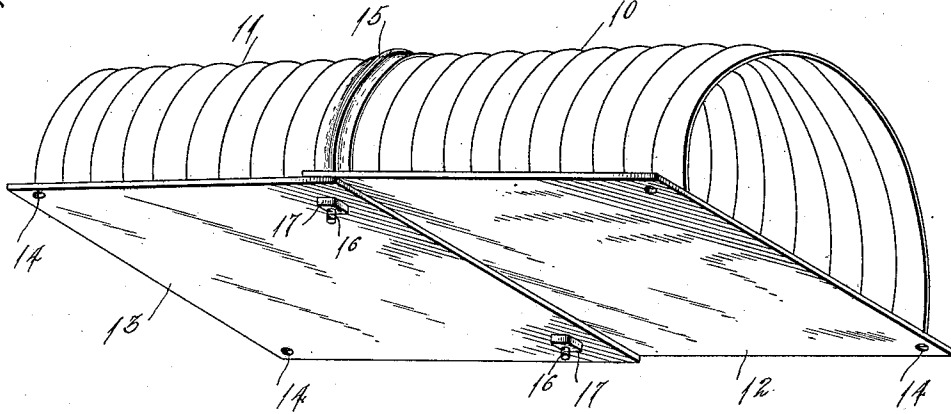


Fig. 2.

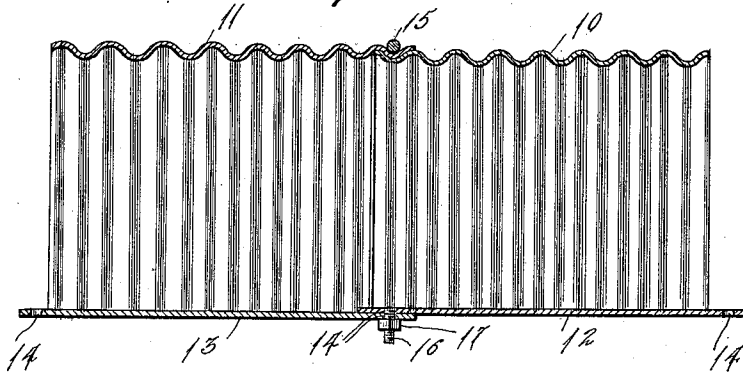
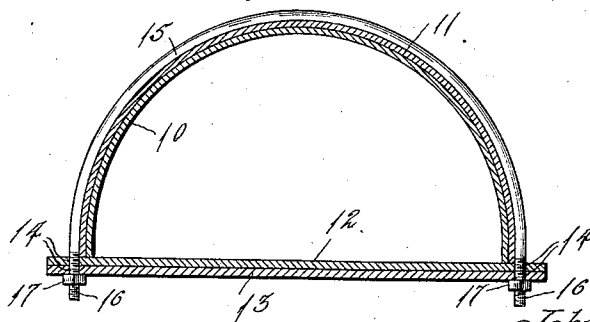


Fig. 3.



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Fig. 4.

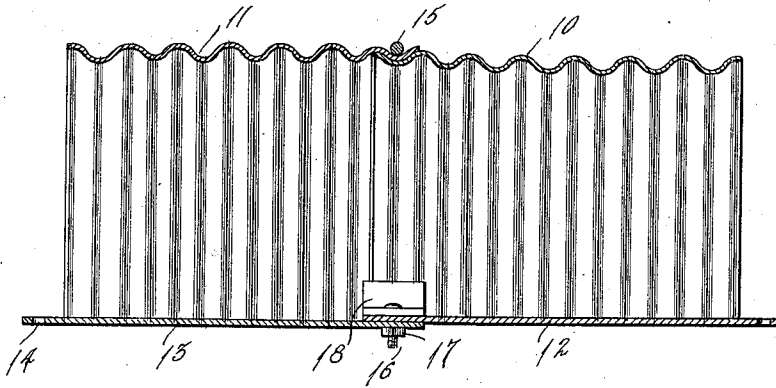


Fig. 5.

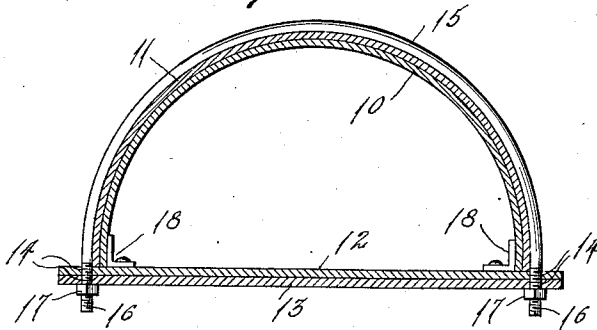
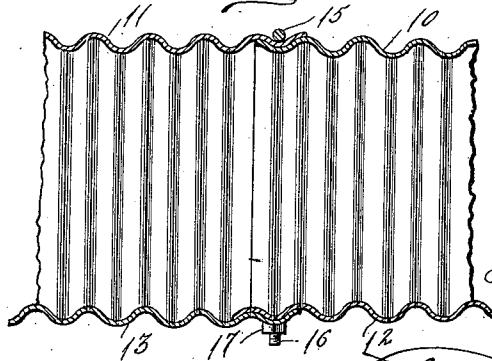


Fig. 6.



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METALLIC CULVERT.

1,013,440.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed December 15, 1910. Serial No. 597,500.

To all whom it may concern:

Be it known that we, JOHN R. RANKIN and JAMES H. LARRICK, citizens of the United States, residing at La Junta, in the county of Otero, State of Colorado, have invented certain new and useful Improvements in Metallic Culverts; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as it will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to metallic culverts.

The object of the invention resides in the provision of a culvert which will consist of comparatively few parts, which may be easily and quickly assembled, and will be strong, durable and efficient in use.

A further object of the invention resides in the provision of a culvert which will offer a minimum resistance to the flow of water and the parts of which may be stored in an exceedingly small space for the purpose of shipment.

With these and other objects in view, the invention consists in the details of construction and the arrangement and combination of parts to be hereinafter more fully described and particularly pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings, wherein like characters of reference denote corresponding parts in the several views; and in which,

Figure 1 is a perspective view of a portion of a culvert constructed in accordance with the invention; Fig. 2, a longitudinal section of Fig. 1; Fig. 3, a transverse section through the connection between the sections of the culvert; Fig. 4, a longitudinal section through a portion of a culvert showing a modified form of construction; Fig. 5, a transverse section through the connection between the culvert sections illustrated in Fig. 4; and Fig. 6, a vertical longitudinal section through a portion of a culvert illustrating still another modified construction.

Referring to the drawings, the portion of the culvert illustrated in Fig. 1 is shown as comprising transverse corrugated body sections 10 and 11, the adjacent ends of which are disposed in overlapping relation. The bottom of the culvert is formed of sections 12 and 13 which are of flat sheet metal and serve as a support for the side edges

of the body portions 10 and 11, said bottom sections 12 and 13 being of such a width that their side edges lie outwardly of the side edges of the body sections 10 and 11. Each of the bottom sections 12 and 13 is provided with openings 14 so positioned that when said bottom sections are disposed with their adjacent ends in overlapping relation, the openings 14 disposed on the same side of the overlapping ends will be positioned in alinement. The culvert sections heretofore mentioned are secured together by means of an arched tie rod 15 which embraces the overlapping ends of the body sections 10 and 11, and has its terminals threaded, as at 16, and extending through the alining openings 14 on opposite sides of said bottom sections respectively. Nuts 17 are mounted on the threaded ends of the tie rod 15 respectively and serve to force the bottom sections 12 and 13 into engagement with the side edges of the body sections 10 and 11, and also secure said body sections together.

In the modified construction illustrated in Figs. 4 and 5, the bottom section 12 has secured thereto longitudinally at each side angle-irons 18, one portion of each of which engages the adjacent inner face of the arched body section 10. These angle-irons serve to greatly strengthen the general structure of the culvert inasmuch as they tend to hold the same against collapsing when the nuts on the tie rod are moved against the adjacent bottom section and also increase the efficiency of the water-tight connection between the sections.

In the modified form illustrated in Fig. 6, the bottom sections 12 and 13 are transversely corrugated so as to permit the culvert to respond without injury to the expansive and contractive force of the metal of which it is constructed, such expansion and contraction arising as a result of extreme changes in temperature.

From the foregoing, it will be apparent that there has been described a culvert which may be easily utilized as a closed flume by inverting the same, such a flume offering the advantages of less evaporation of the water passing therethrough, which is a very important matter where there is a scarcity in the supply of water.

What is claimed is:

1. A metallic culvert formed of a plurality

of transversely corrugated arched body sections, and a plurality of flat bottom sections upon which the ends of the body sections rest, the adjacent body sections and the adjacent bottom sections having their ends overlapped respectively, and a tie rod embracing the overlapped ends of the adjacent body sections and extending through the overlapped ends of adjacent bottom sections, whereby the arched body sections are secured together and the bottom sections bound to said arched body sections.

2. A metallic culvert formed of a plurality of transversely corrugated arched body sections, and a plurality of flat bottom sections upon which the ends of the body sections rest at a point inward of the sides of said bottom sections, an arched tie rod embracing the overlapped ends of adjacent body sections and having its terminals threaded and extending through alining openings in the overlapped ends of the bottom sections, and a nut mounted on each threaded end of said tie rod for forcing the bottom sections into engagement with the body sections and securing the latter together.

3. A metallic culvert formed of a plurality of transversely corrugated arched body sections, and a plurality of flat bottom sections upon which the ends of the body sections rest, the adjacent body sections and the adjacent bottom sections having their ends

overlapped respectively, an angle-iron secured longitudinally to one of the adjacent bottom sections near each side thereof, said angle-irons engaging the inner face of one of the bottom sections at each side of the latter, and a tie rod embracing the overlapped ends of adjacent body sections and extending through the overlapped ends of adjacent bottom sections, whereby the arched body sections are secured together and the bottom sections bound to said arched body sections.

4. A metallic culvert formed of a plurality of transversely corrugated arched body sections, and a plurality of transversely corrugated flat bottom sections upon which the ends of the body sections rest, the adjacent body sections and the adjacent bottom sections having their ends overlapped respectively, and a tie rod embracing the overlapped ends of adjacent body sections and extending through the overlapped ends of adjacent bottom sections, whereby the arched sections are secured together and the bottom sections bound to said body sections.

In testimony whereof, we affix our signatures in presence of two witnesses.

JOHN R. RANKIN.

JAMES H. LARRICK.

Witnesses:

WILL H. RANKIN,

L. E. THOMPSON.