

No. 770,236.

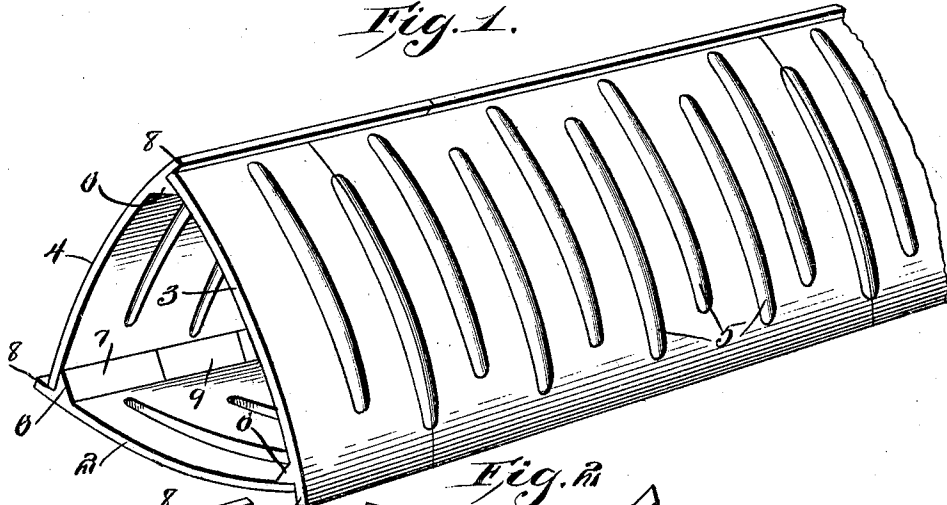
PATENTED SEPT. 13, 1904.

A. LAURIDTZEN.  
CULVERT.

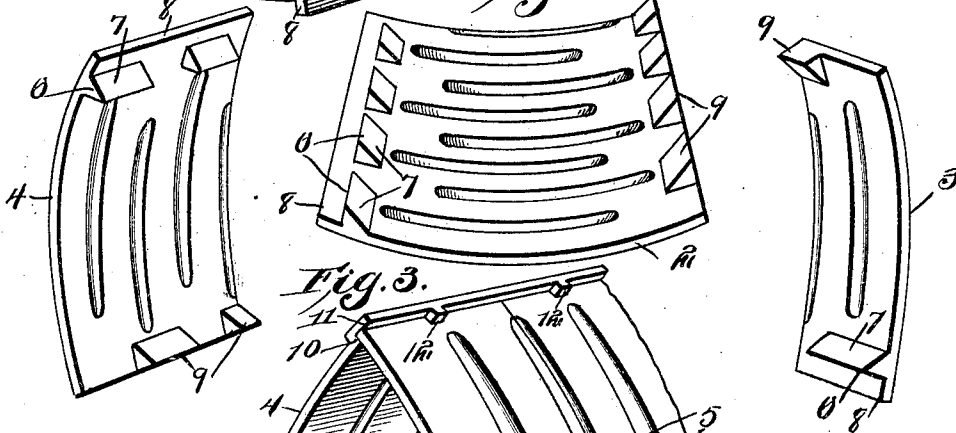
APPLICATION FILED OCT. 31, 1903.

NO MODEL.

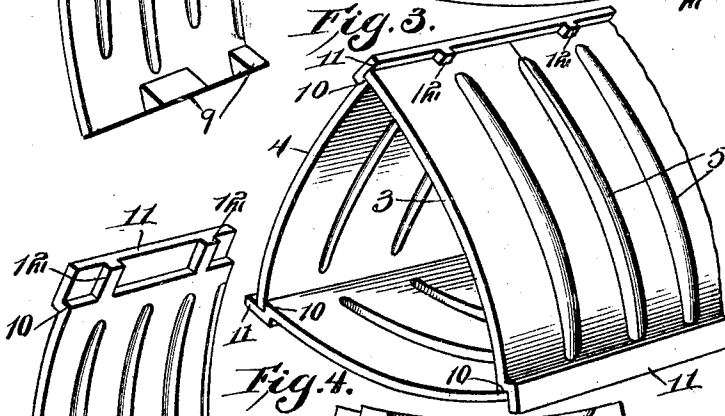
*Fig. 1.*



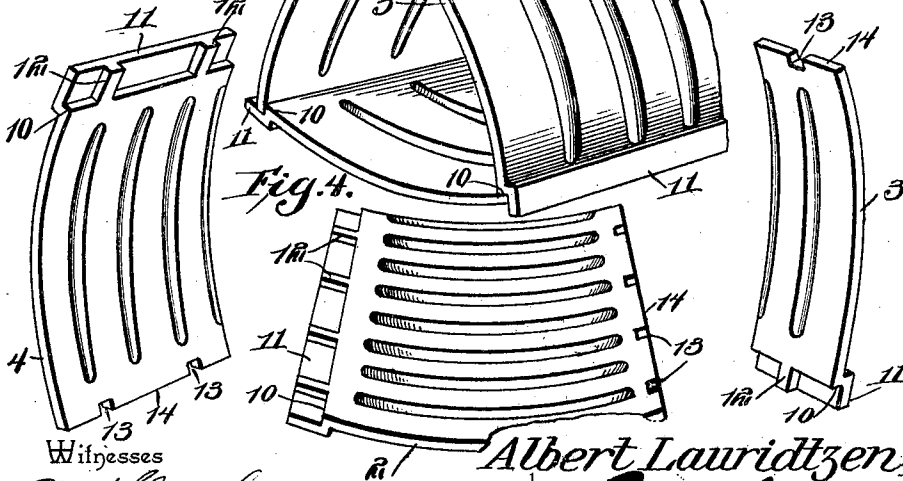
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

ALBERT LAURIDTZEN, OF LYONS, MICHIGAN.

## CULVERT.

**SPECIFICATION** forming part of Letters Patent No. 770,236, dated September 13, 1904.

Original application filed April 18, 1903, Serial No. 153,285. Divided and this application filed October 31, 1903. Serial No. 179,358. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT LAURIDTZEN, a citizen of the United States, residing at Lyons, in the county of Ionia and State of Michigan, have invented a new and useful Culvert, of which the following is a specification.

This invention relates to certain improvements in culverts of that general type illustrated in an application for Letters Patent of the United States filed by me on the 18th day of April, 1903, under Serial No. 153,285 and of which the present application is a division.

The object of the invention is to provide an inexpensive, efficient, and durable device of this character adapted for use beneath railway-tracks, roadways, and the like or in the construction of sewers, conduits, and similar structures.

A further object of the invention is to provide a culvert formed of a plurality of interlocking and interchangeable sections capable of being quickly assembled and securely locked in position without the employment of skilled labor and which may be readily knocked down and compactly arranged for shipment or transportation.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

In the accompanying drawings, Figure 1 is a perspective view of a culvert constructed in accordance with my invention. Fig. 2 is a detail perspective view of the several sections or plates of the culvert detached. Fig. 3 is a perspective view of a modified form of culvert, and Fig. 4 is a detail perspective view of the sections or plates of Fig. 3 detached.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The culvert, which is preferably triangular in cross-section, comprises a base-plate 2 and

sectional side plates 3 and 4. The plates are made in suitable length, abutting at opposite ends and arranged to break joint at their longitudinal junctures, as clearly shown in Fig. 1 of the drawings. The base-plate 2 and side plates are preferably formed of metal, being slightly curved in cross-section and formed with a series of transversely-disposed ribs or corrugations 5, varying in number and distance apart, according to the size of the plates and strength required for the culvert. The base-plate 2 and side plates 3 and 4 are each provided with upwardly-extending locking-lugs 6, having inclined faces 7, said lugs being spaced a short distance from one edge of each plate to form a seating-flange 8, adapted to receive the edge of the adjacent plate when said plates are assembled, as clearly shown in Fig. 1. The opposite edge of each plate is provided with correspondingly-shaped marginal lugs 9, arranged out of alinement with the lugs 6 or in staggered relation thereto, so as to permit said lugs to intermesh when the culvert is set up, and thereby prevent independent longitudinal movement of the plates. The lugs 6 form shoulders against which the edges of the adjacent plates abut, preventing said plates from being pressed inwardly, while the flanges 8 form guides permitting the plates to expand and contract laterally when outward pressure is exerted on the interior walls thereof—as, for instance, when water freezes in the culvert. The base and side plates being formed of metal will also have a tendency to give or yield slightly when subjected to any great external strain or pressure incident to the expansion of the earth surrounding the culvert, thereby preventing said plates from being broken or otherwise injured.

In laying a culvert a ditch is first dug where the culvert is to be formed and a number of base-plates laid end to end at the bottom of the ditch. The culvert is then formed from one end by placing a one-fourth plate on one side and a one-half plate on the other, the locking-lugs 6 intermeshing with the lugs 9 and interlocking said plates with the base and with each other. Long plates are then placed in position on each side to any desired length

and the culvert finished with a one-fourth plate on one side and a half-plate on the bottom, after which the ditch is filled in, covering and protecting the culvert.

5 The sectional plates comprising the culvert are so constructed as to be readily interchanged, thereby permitting either side plate to be used for the base or foundation plate when desired. The seating-flange of each  
10 plate or section extends from the edge of the plate to the inner line of the lugs, so that between the outer line of the lugs and the edge of the plate there is a continuous seat for the edge of an adjacent plate, and the spaces between the lugs form an interrupted seat for  
15 the lugs of said adjacent plate.

In Figs. 3 and 4 I have shown a modification in which each plate comprising the culvert is provided with a shoulder or offset 10,  
20 defining a flange 11, provided with locking-lugs 12, which engage corresponding notches or recesses 13, formed in the edge 14 of the adjacent plate. The flanges in this case serve the double purpose of guiding and limiting  
25 the inward movement 7 of the plates, while the interlocking lugs prevent independent longitudinal movement thereof.

From the foregoing description it will be seen that I have provided an extremely simple  
30 and durable culvert capable of being manufactured at a small cost and so constructed as to be readily set up for use without the aid of skilled labor.

By having the several sections comprising the culvert formed with transversely-disposed  
35 corrugations it not only strengthens the culvert, but also causes the earth to engage the outer corrugations, preventing endwise movement of said sections.

40 Having thus described the invention, what is claimed is—

1. A sectional culvert comprising a plurality of sections each provided at one edge with a seating-flange and at its opposite edge with  
45 means for interlocking with the flanged edge of an adjacent section and preventing independent longitudinal movement of said section.

2. A sectional culvert comprising a plurality of interchangeable plates each provided at  
50 one edge with a seating-flange and at its opposite edge with means for interlocking with the flanged edge of an adjacent plate and preventing independent longitudinal movement  
55 of said plates.

3. A sectional culvert comprising a plurality of interchangeable plates each provided at one edge with upwardly-extending locking-

lugs spaced therefrom, the opposite edge of each plate being seated against the inner wall  
60 of the adjacent plate and provided with corresponding lugs adapted to interlock with the lugs thereon.

4. A sectional culvert comprising a plurality of interchangeable plates each provided at  
65 one edge with a seating-flange and at its opposite edge with means for interlocking with the flange on the adjacent plate, all of said plates being adapted to break joint with each  
70 other.

5. A sectional culvert comprising three interchangeable plates arranged in triangular  
75 form, each provided at one edge with longitudinally-disposed locking-lugs spaced therefrom to form a continuous seating-flange, the opposite edge of each plate being seated on the continuous flange of the adjacent plate and provided with corresponding lugs adapted to interlock with and seat between the lugs thereon.

6. A sectional culvert comprising a plurality of interchangeable corrugated plates, one  
80 edge of each plate being provided with a series of locking-lugs having inclined faces and spaced from each other and from the edge of the plate to thereby form a seating-flange, the  
85 opposite edge of each plate being seated on the flange of the adjacent plate and provided with corresponding lugs adapted to interlock with the lugs thereon.

7. A sectional culvert comprising a series  
90 of interlocking plates in which one uninterrupted edge of each plate seats against the inner face of an adjacent plate and its opposite edge extends beyond the outer wall of a second plate, all of said plates being free to  
95 separate laterally.

8. A sectional culvert composed of three interchangeable plates arranged in triangular  
100 form and comprising a base-plate, and side pieces adapted to interlock with each other, one of the side pieces extending below the base-piece and the other being supported flush therewith and extended beyond the opposite  
plate.

9. A sectional culvert comprising a plurality  
105 of sections having locking-lugs on their inner faces engaging each other to prevent independent longitudinal movement.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in  
110 the presence of two witnesses.

ALBERT LAURIDTZEN.

Witnesses:

FITCH H. BEACH,  
W. L. KELLEY.