K. J. THORSBY.

METALLIC CULVERT.

APPLICATION FILED MAR. 6, 1911.

996,166. Patented June 27, 1911.

Fig. 1.

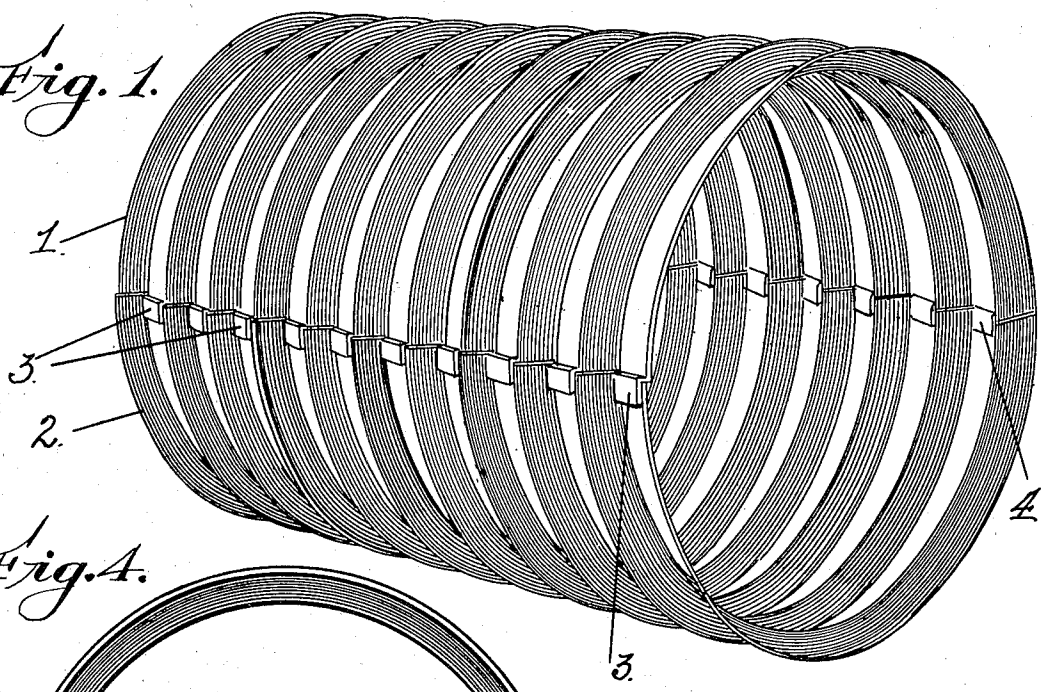


Fig. 4.

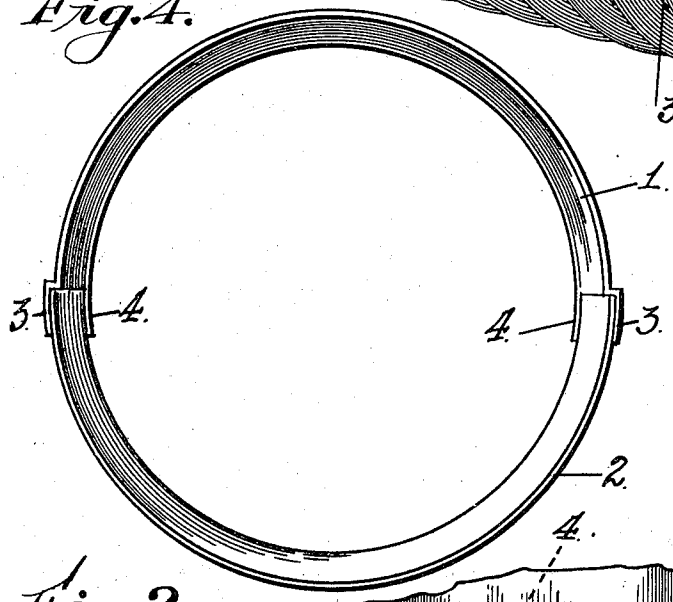


Fig. 2.

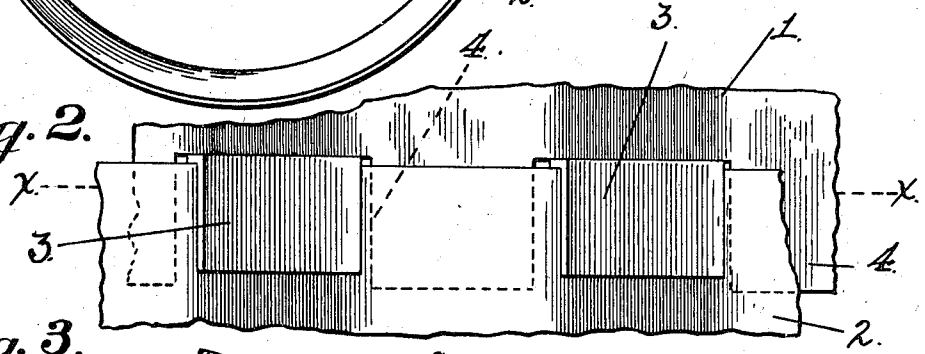
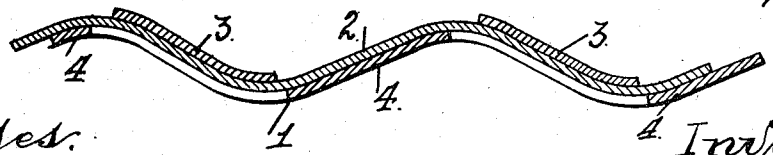


Fig. 3.



Witnesses:

Arthur L. Slee.

S. Constine.

Inventor

Karl Johan Thorsby

by Wm. F. Booth

his Attorney.

UNITED STATES PATENT OFFICE.

KARL JOHAN THORSBY, OF OAKLAND, CALIFORNIA, ASSIGNOR TO CALIFORNIA CORRUGATED CULVERT COMPANY, OF OAKLAND, CALIFORNIA, A CORPORATION.

METALLIC CULVERT.

996,166. Specification of Letters Patent. **Patented June 27, 1911.**

Application filed March 6, 1911. Serial No. 612,481.

To all whom it may concern:

Be it known that I, KARL JOHAN THORSBY, a subject of the King of Norway, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Metallic Culverts, of which the following is a specification.

My invention relates to that class of culverts composed of metallic sections, adapted, for convenience in transportation, to be nested, and provided with means for forming a joint at their meeting edges when the sections are fitted together to form the complete culvert or pipe.

My invention consists in the novel joint between the sections, and it has for its object the provision of a joint with a relatively extensive bearing surface, of great strength, and smooth inner surface, the joint being economical in manufacture, and easily established in installation.

Referring to the accompanying drawings:—Figure 1 is a perspective view of my culvert. Fig. 2 is a fragmentary side view, enlarged, of the same. Fig. 3 is a section on line *x*—*x* of Fig. 2. Fig. 4 is an end view of the culvert.

1 is the upper metallic section and 2 is the lower, both being of the usual corrugated type. The lower section is semicylindrical and its terminal surface on each side is left smooth throughout its length. The upper section is greater than semicylindrical, and its terminal portions are cut upward the distance of its excess of circumference to form separated lugs 3, which are offset outward as shown, a distance of twice the thickness of the plate, the material between said lugs being left as straight tongues 4. When the upper section is placed upon the lower section, the offset lugs 3 overlap the outer surfaces of the lower section, while the tongues 4 pass down upon and overlap the inner surfaces of said lower section. As shown in the drawings, and particularly in Fig. 3, the cuts by which the lugs 3 and the tongues 4 are formed are approximately in the apexes of the ridges and in the bottoms of the valleys of the corrugations, with the result that tongues 4, which lie on the inside of the culvert, have one end lying in approximately the circles of greatest interior diameter of said culvert. The shoulder formed by this end is, therefore, removed to the greatest distance from the main current of the material through the culvert, and presents the least obstruction to the flow of the material when the culvert is laid, as is intended, so that said flow is from right to left in said Fig. 3. Thus a smoother inner surface is presented to the flow. The joint thus formed has a relatively extensive bearing surface, and being formed of parts which are integral with the sections, is strong and reliable with no tendency to shear as would be the case if the lugs were separate pieces. Moreover, the effect on the inner surface is a smooth one, which is of importance in drainage culverts. The joint is economically practical in manufacture and is readily established in setting up the culvert.

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

1. A metallic culvert comprising circumferentially corrugated sections, the terminal surfaces of one of said sections being a flat plane in the direction of their length, and the terminal portions of the other section being cut circumferentially in approximately the apexes of the ridges and the bottoms of the valleys of the corrugations, to form separated lugs, said lugs being offset, the portions of said section between the lugs being left as straight tongues.

2. A metallic culvert comprising circumferentially corrugated complemental sections fitted together by means of alternating offset lugs and straight tongues, formed by circumferentially directed cuts made in approximately the apexes of the ridges and the bottoms of the valleys of the corrugations.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

KARL JOHAN THORSBY.

Witnesses:
WM. F. BOOTH,
D. B. RICHARDS.