

K. J. THORSBY.
TROUGH, FLUME, CONDUIT, AND THE LIKE.
APPLICATION FILED MAY 20, 1912.

1,036,029.

Patented Aug. 20, 1912.

2 SHEETS—SHEET 1.

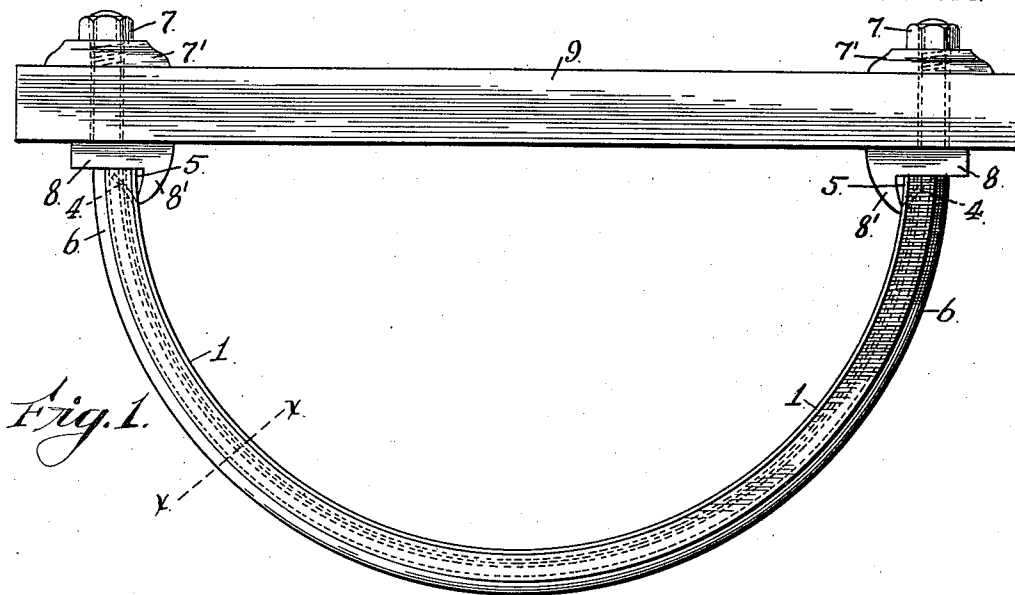


Fig. 1.

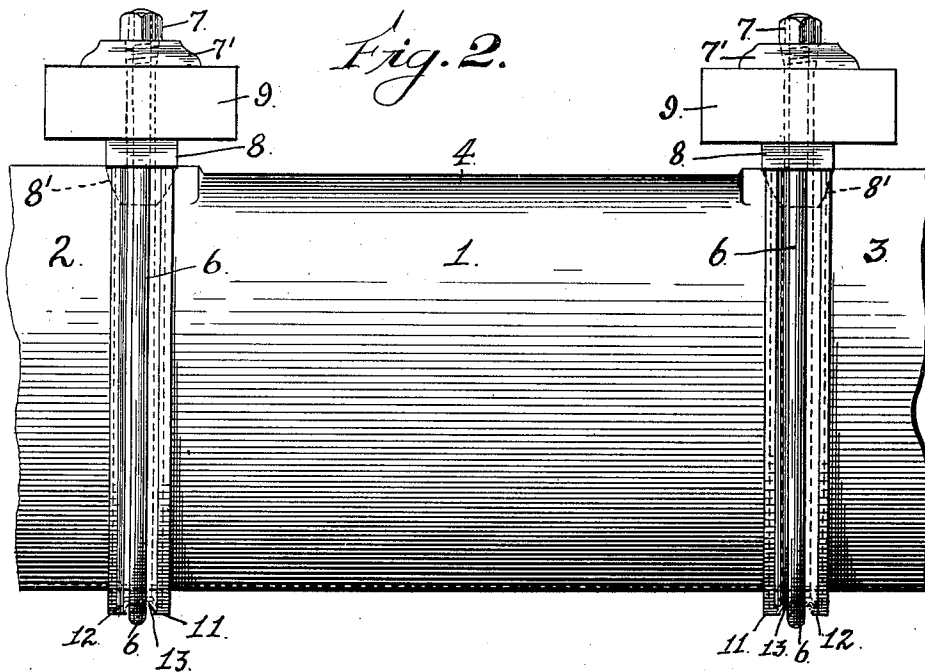


Fig. 2.

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Arthur L. Slee.
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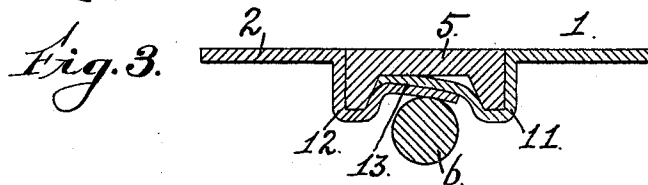
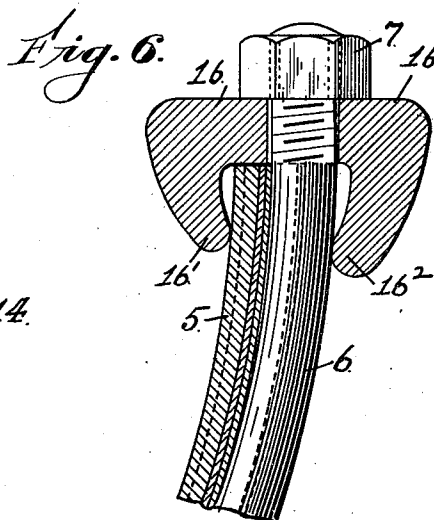
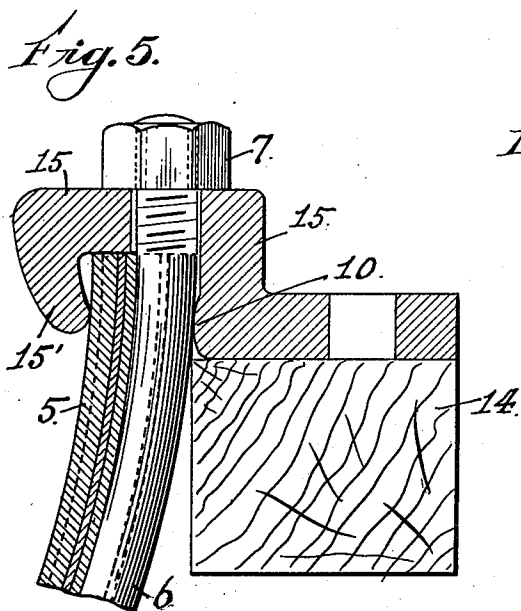
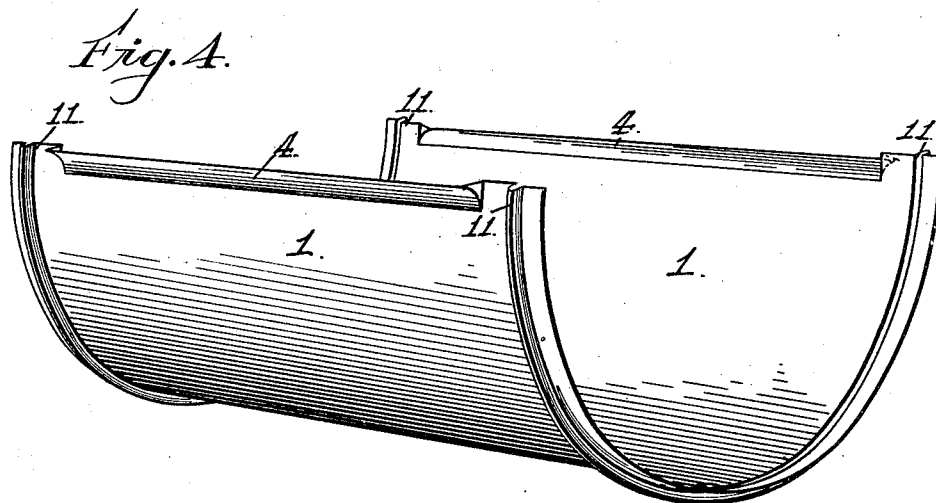
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2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

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

TROUGH, FLUME, CONDUIT, AND THE LIKE.

1,036,029.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed May 20, 1912. Serial No. 698,416.

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 Troughs, Flumes, Conduits, and the Like, of which the following is a specification.

My invention relates to troughs, flumes, conduits and the like for carrying or holding water for various purposes, and for lining irrigation or other ditches, so that they may be watertight.

One object of my invention is to provide an improved flume or conduit, formed of sheet metal sections with overlapping ends, and having means for joining said ends, resulting in a simple and effective, smooth and watertight joint of the sections, whereby the highest efficiency is obtained.

Another object is to provide a flume with simple and economical supports and clamping devices, and a third object of the invention is to so form the sectional sheets as to brace themselves against distortion which will have a tendency to occur along the edges of said sections when the distances between the supporting rods are comparatively great.

With these objects in view, my invention consists in the novel construction and arrangement of the trough, flume or conduit in these particulars, which I shall now fully describe by reference to the accompanying drawings, in which—

Figure 1 is an end view. Fig. 2 is a side view. Fig. 3 is a section on line *x-x* of Fig. 1. Fig. 4 is a perspective view of a metal sheet section of the trough or flume. Figs. 5 and 6 are sectional details showing modifications of the clamping members and supporting members.

The metal sectional sheets designated by 1, 2 and 3, are usually formed as shown in Fig. 4, namely semi-circular. In order to stiffen them, the edges may have an outward curvature, that is, a certain portion 4 along the edge is offset from the true shape of the flume, to act as a brace against any dis-

tortion along said edge that otherwise may occur. Fig. 2 shows a section 1, joined at one end to a section 2 and at the other end to a section 3. Fig. 3 shows how any two sections, such as 1 and 2 are joined together.

5 is a channel-shaped member, and the sheets 1 and 2 are formed at their meeting edges, as shown at 11 and 12, to conform with the said channel-shaped member, said edges overlapping as seen at 13. The main object of this joint is to construct a flume that will not require any skill or mechanical judgment to put together. The surface of the channel-shaped member 5 facing inward is in the same plane as the face of the flume itself, thus forming a continuous smooth surface without any obstructions or grooves around the joints which would give increased friction.

The sheet 1 may overlap the sheet 2 or vice versa, and still keep its perfect form; in other words, the ends of the sheets are interchangeable. The regular standard sized stock can be used for these members and thus reduce the cost to a minimum.

6 is the tightening rod used at the joints. In Figs. 1 and 2 the threaded ends of the tightening rod are shown as passing up through the ends of a cross carrier 9, and through clamping members 8 lying under the cross carrier and through washers 7' and nuts 7 lying above said carriers. In these figures the clamping member 8 consists of a plate having a lip 8' which bears upon the inner face of the channel shaped joint member 5. Now, upon tightening up the nuts 7 the rod 6 forces the sheet sections firmly up against the channel-shaped joint member 5, resistance being afforded by the lip 8' of the clamping member 8, and thus a watertight joint is made all around the flume. The clamping member 8 also serves as a washer, preventing the sheets and channel-shaped joint member from shearing the carrier 9.

In Fig. 5 I show a modified form of clamping device intended to replace the cross-carrier 9 of Figs. 1 and 2. In this case an outside support 14 is used, and upon

this is mounted the clamping member 15, which like the previous clamping member 8 receives the end of the rod 6 and takes the nut 7 and has an inner bearing lip 15' similar to the lip 8' of the said previous member 8. But said clamping member 15 has in addition an outer point 10 which rests against the rod 6 and prevents said member from turning from its proper position when tightening up the nut 7.

In Fig. 6, I show a form of clamping member 16 which is to be used in cases where carrying supports are not needed, as, for instance, when the device is used as a lining for ditches. In this case the clamping member 16 has both an inner bearing 16' on the joint member 5 and an outer bearing 16² on the rod 6.

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

1. Troughs, flumes, conduits and the like, comprising alined sections the adjacent ends of which are interiorly recessed with their extremities beyond the recesses overlapping; a joint-member common to both sections and seated in said recesses; and means for clamping the sections against the joint member to make a tight joint.

2. Troughs, flumes, conduits and the like, comprising alined sections the adjacent ends of which are interiorly recessed with their extremities beyond the recesses overlapping; a joint-member common to both sections and seated in said recesses, the inner surface of said joint-member being flush with the inner surface of the sections; and means for clamping the sections against the joint member to make a tight joint.

3. Troughs, flumes, conduits and the like, comprising alined sections the adjacent ends of which are interiorly recessed with their extremities beyond the recesses overlapping; a joint-member common to both sections and seated in said recesses; and means for clamping the sections against the joint member to make a tight joint, consisting of a tightening rod embracing exteriorly the overlapping extremities of the sections, clamping members on the upper ends of the rod bearing on the joint-member, and nuts on the rod ends to set the rod and clamping members.

4. Troughs, flumes, conduits and the like, comprising alined sections the adjacent ends of which are interiorly recessed with their extremities beyond the recesses overlapping; a joint member common to both sections and seated in said recesses; means for clamping the sections against the joint member to make a tight joint, consisting of a tightening rod embracing exteriorly the overlapping extremities of the sections, clamping members on the upper ends of the rod bearing on the joint-member, and nuts on the rod

ends to set the rod and clamping members; and supports for the clamping devices disposed at the top edges of the sections.

5. Troughs, flumes, conduits and the like, comprising alined sections the adjacent ends of which are interiorly recessed with their extremities beyond the recesses overlapping; a joint member common to both sections and seated in said recesses; means for clamping the sections against the joint member to make a tight joint, consisting of a tightening rod embracing exteriorly the overlapping extremities of the sections, clamping members on the upper ends of the rod bearing on the joint-member, and nuts on the rod ends to set the rod and clamping members; and supports for the clamping devices disposed at the top edges of the sections, said supports consisting of cross-carriers through which the ends of the tightening rod pass.

6. Troughs, flumes, conduits and the like, comprising alined sections the adjacent ends of which back of their extremities are formed with an interior peripheral recess, said extremities beyond the recesses overlapping, a joint-member common to both sections, said member being of channel section with its legs seated in said recesses; and means for clamping the sections against the joint-member to make a tight joint.

7. Troughs, flumes, conduits and the like, comprising alined sections the adjacent ends of which back of their extremities are formed with an interior peripheral recess, said extremities beyond the recesses overlapping, a joint-member common to both sections, said member being of channel section with its legs seated in said recesses, and its inner surface flush with the inner surface of the sections; and means for clamping the sections against the joint-member to make a tight joint.

8. Troughs, flumes, conduits and the like, comprising alined part-round sections having a portion of their edges bent outward from the line of curvature, the adjacent ends of said sections being interiorly peripherally recessed with their extremities beyond the recesses overlapping; a joint-member common to both sections and seated in said recesses; and means for clamping the sections against the joint member to make a tight joint.

9. Troughs, flumes, conduits and the like, comprising alined part-round sections having a portion of their edges bent outward from the line of curvature, the adjacent ends of said sections being interiorly peripherally recessed with their extremities beyond the recesses overlapping; a joint-member common to both sections and seated in said recesses; and means for clamping the sections against the joint member to make a tight joint, consisting of a tightening rod embrac-

ing exteriorly the overlapping extremities of the sections, clamping members on the upper ends of the rod bearing on the joint-members, and nuts on the rod ends to set the rod and clamping members.

5 In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

KARL JOHAN THORSBY.

Witnesses:

C. R. HODGKIN,

S. A. FORD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents.
Washington, D. C."