

A. LAURITZEN.

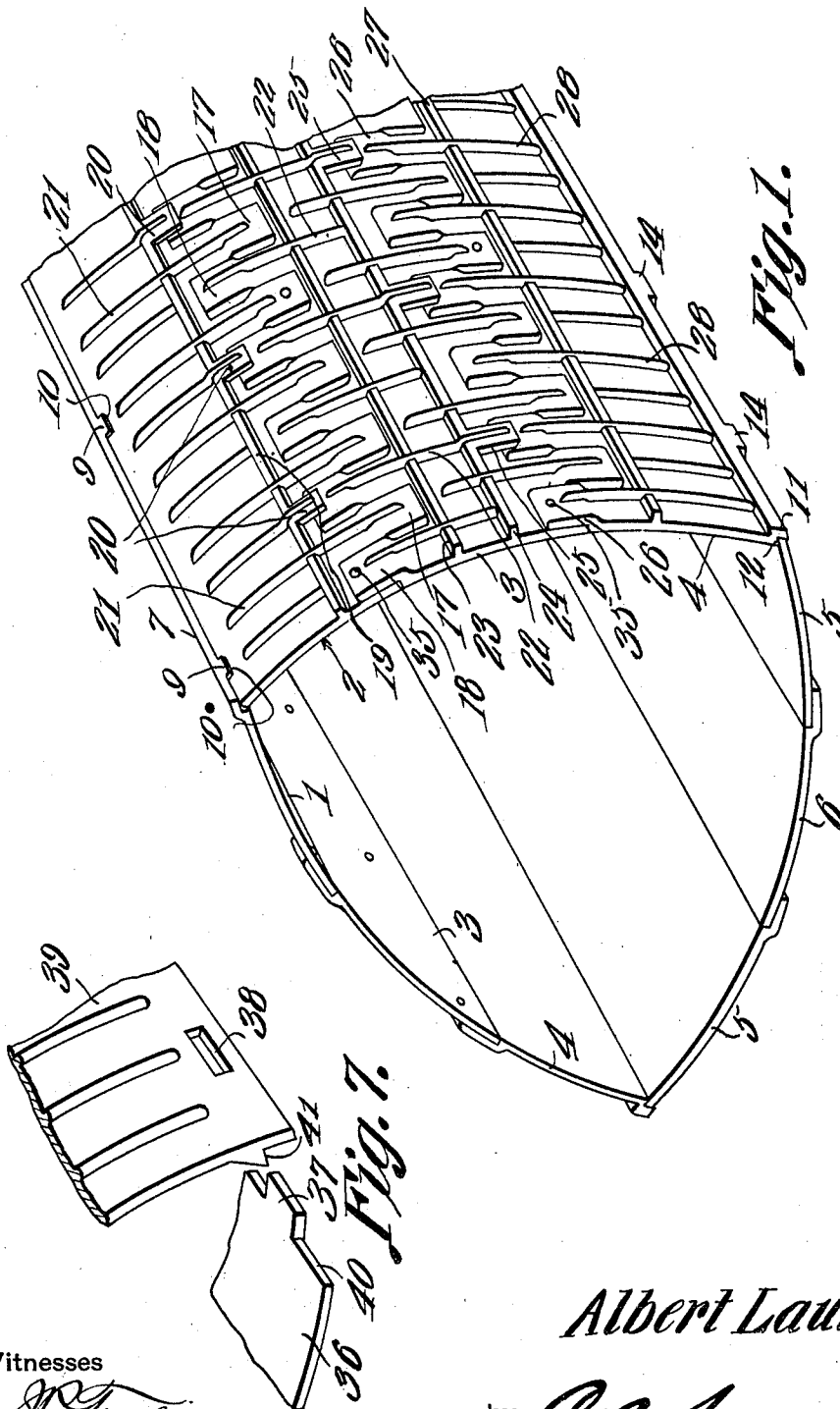
CULVERT.

APPLICATION FILED APR. 21, 1911.

1,003,759.

Patented Sept. 19, 1911.

2 SHEETS—SHEET 1.



Witnesses

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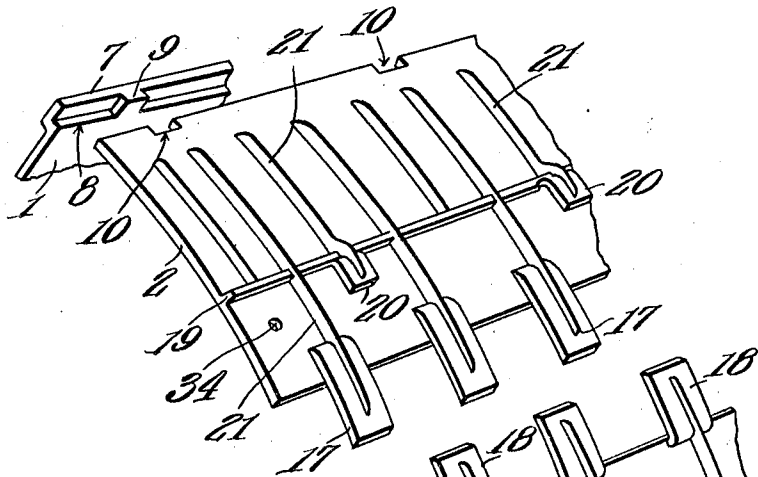


Fig. 2.

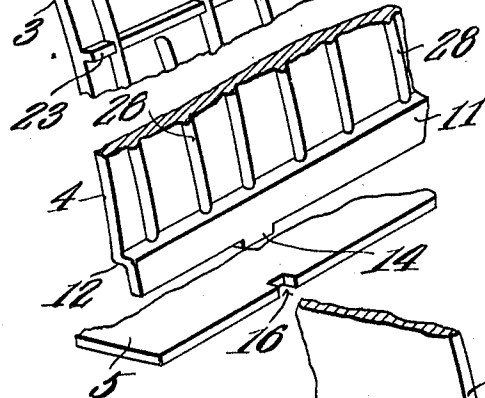


Fig. 3.

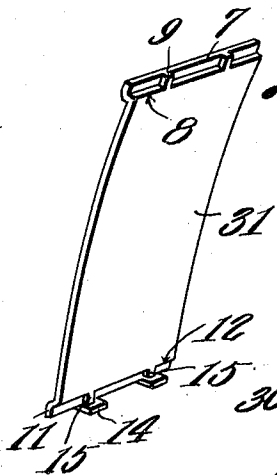


Fig. 4.

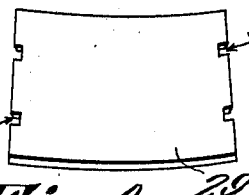


Fig. 5.

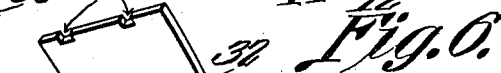


Fig. 6.

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UNITED STATES PATENT OFFICE.

ALBERT LAURITZEN, OF CHARLOTTE, MICHIGAN.

CULVERT.

1,003,759.

Specification of Letters Patent. Patented Sept. 19, 1911.

Application filed April 21, 1911. Serial No. 622,519.

To all whom it may concern:

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

It is one object of this invention to provide, in a culvert, interlocking elements upon the side-forming members of the culvert, and upon the bottom-forming members of the culvert, whereby the bottom-forming members of the culvert may be prevented from dropping downwardly.

Another object of the invention is to provide novel means for interlocking the side-forming members of the culvert.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings, Figure 1 shows one form of the invention in perspective; Fig. 2 is a fragmental perspective showing certain portions of the culvert in proper relative positions, but separated and broken away; Fig. 3 is a perspective showing a modified form of side member for the culvert; Fig. 4 is a perspective showing a modified form of bottom member for the culvert; Fig. 5 is a fragmental perspective showing a modified form of side member for the culvert, adapted to cooperate with the structure depicted in Fig. 3; Fig. 6 is a fragmental perspective of one of the side-forming members of the culvert, showing the means upon the member, whereby the bottom of the culvert is prevented from becoming displaced; and Fig. 7 is a fragmental perspective showing a modified means for preventing a displacement of the bottom of the culvert.

The culvert herein disclosed, consists of crown members 1 and 2, resting upon side members 3, the side members 3 resting upon

supporting members 4, carried by base members 5, between which base members, the bottom member 6 is interposed. It will be understood that the members 3 and 6 may be duplicated to any desired extent, over the showing of the drawings, so as to permit an enlargement in the size of the culvert. The members 3 and 4 will be referred to hereinafter as the side-forming members of the culvert, while the members 5 and 6 will be referred to as the bottom-forming members of the culvert.

Noting particularly Fig. 2, it will be seen that the crown member 1 is provided with an offset flange 7, defining a shoulder 8, there being a lug 9 located in the angle defined by the members 7 and 8, the lug 9 being multiplied to any desired extent. These lugs 9 are adapted to register in notches 10, formed in the upper edge of the crown member 2. The interlocking engagement between the elements 9 and 10, prevents relative longitudinal movement between the members 1 and 2.

Referring to the supporting member 4, and noting particularly Figs. 2 and 6, it will be seen that, at its lower edge, the member 4 is equipped with an offset flange 11, defining a shoulder 12 in the member 4. Projecting inwardly from the lower edge of the flange 11, is an integrally formed finger 14, there being an upright lug 15, united with the finger 14, and fitting into the angle formed by the shoulder 12 and the flange 11. This lug 15 is multiplied to any desired extent, and is adapted to register in a notch 16 formed in the edge of the base member 5, the base member 5 being supported by the inwardly projecting finger 14.

Referring particularly to the engagement between the crown member 2 and the side member 3, it will be seen, noting particularly Fig. 2, that the crown member 2 is provided, along its lower edge, with a plurality of outstanding primary tongues 17. These tongues project beyond the lower edge of the member 2, and are spaced from the plane of the said member, the tongues 17 being fashioned integrally with the crown member 2. These tongues 17 are adapted to overlap

the adjacent edge of the side member 3, and to fit between similarly formed tongues 18 upon the member 3, the tongues 18 overlapping the adjacent edge of the member 2.

5 Extended longitudinally of the crown member 2, is a rib 19, from which spring secondary tongues 20, these tongues 20 being spaced slightly from the plane of the crown member 2. When the members 2 and
10 3 are brought together, certain of the tongues 18 upon the member 3, will fit beneath the tongues 20 upon the member 2. The crown member 2 is equipped with a plurality of transverse reinforcing ribs 21,
15 certain of these ribs being extended upon the primary tongues 17, and upon the secondary tongues 20, as clearly appearing in Fig. 2. The side member 3 is similarly equipped, with transverse reinforcing ribs 22, extended
20 upon its tongues 18.

Noting Fig. 1 it will be seen that the side member 3 is provided with longitudinal ribs 23 and 24, the secondary tongues 25 of the member 3, springing away from the rib 24, for interlocking engagement with the
25 primary tongues 26 of the supporting member 4, the supporting member 4 being supplied with a longitudinal rib 27, and with transverse reinforcing ribs 28, extended
30 upon the tongues of the member 4, in the manner hereinbefore described.

It may be desirable, at times, to form a three-piece culvert, and under such circumstances, the structure appearing in Figs. 3,
35 4 and 5 may be employed. Referring to Fig. 4, the bottom 29 is provided in its edges with notches 30. These notches 30 are adapted to engage with the elements 15, hereinbefore described, upon a side member
40 31, the side member 31 being equipped at its upper edge with the elements 7, 8 and 9. The other side member 32 employed in connection with the members 29 and 31, is equipped in its upper edge, with the notches
45 10, hereinbefore referred to, these notches 10 engaging with the lugs 9 upon the member 31, as will be readily understood.

Reverting now to the structure shown in Figs. 1 and 2, it will be seen that the tongues
50 18, 17 or 26 are supplied with holes 33, adapted to register, respectively, with holes 34 in the crown member 2 and in the side member 3. Through these aligned holes, bolts 35 or the like may be passed, to hold
55 the structure assembled.

In Fig. 7 of the drawings, an auxiliary means is shown, for preventing a dropping of the bottom of the culvert. In Fig. 7, the bottom is denoted by the numeral 36, the
60 same having an outstanding tongue 37, adapted to register in an opening 38 in the side member 39, the edge 40 of the bottom 36 registering beneath a rib 41, projecting inwardly, from the inner face of the side

member 39. Obviously, when the tongue 37 registers in the opening 38, a dropping of the bottom 36 will be prevented.

It will be noted that in all forms of the invention, the culvert forming members are strongly interlocked at their places of meeting, the flow-line of the culvert, however, being unimpeded, none of the tongues, or the elements with which they engage, projecting inwardly, beyond the flow surface of the culvert.

At this point it may be stated that the several members 1, 2, 3, 4, 5 and 6, may be fashioned in any desired lengths. The means for preventing a dropping of the bottom of the culvert, and the interlocking
80 tongues upon the several portions of the culvert, are by no means to be confined to the specific structure shown, it being obvious that these elements may be employed upon culverts differing in a marked degree
85 from those shown. The novel features embodied in this application, are adapted to be employed in the structures shown in my former Patents numbered 769,703; 770,236;
90 746,112; and 770,237.

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

1. In a device of the class described, a side-forming member having an inwardly projecting finger, provided with an up-
95 standing lug; and a bottom-forming member adapted to rest upon the finger, and having an opening to receive the lug.

2. In a device of the class described, a side-forming member having an off-set
100 flange defining a shoulder in said member, there being a lug fitting in the angle formed by the flange and the shoulder, said member having a finger projecting from the flange across the bottom of the lug; and a
105 bottom member adapted to engage beneath the shoulder and to rest upon the finger, the bottom member having an opening to receive the lug.

3. In a device of the class described, cul-
110 vert forming members having outstanding primary tongues upon their meeting edges, the tongues of each member overlapping the other member, there being upon one of said members, secondary tongues, beneath which
115 certain of the primary tongues of the other member are adapted to fit.

4. In a device of the class described, cul-
120 vert-forming members having outstanding tongues upon their meeting edges, the tongues of each member overlapping the other member; there being upon one of said members, a longitudinally extended rib, from which outstands secondary tongues, be-
125 neath which tongues, the primary tongues of the other member are adapted to fit.

5. In a device of the class described, cul-
vert-forming members, provided with out-

standing tongues, the tongues of each of
said members being adapted to overlap the
other member; there being, in certain of the
tongues of one member, openings alined
5 with openings in the other member; and se-
curing elements inserted in said openings.
In testimony that I claim the foregoing

as my own, I have hereto affixed my signa-
ture in the presence of two witnesses.

ALBERT LAURITZEN.

Witnesses:

JAS. JACKLIN,
W. L. FILE.

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