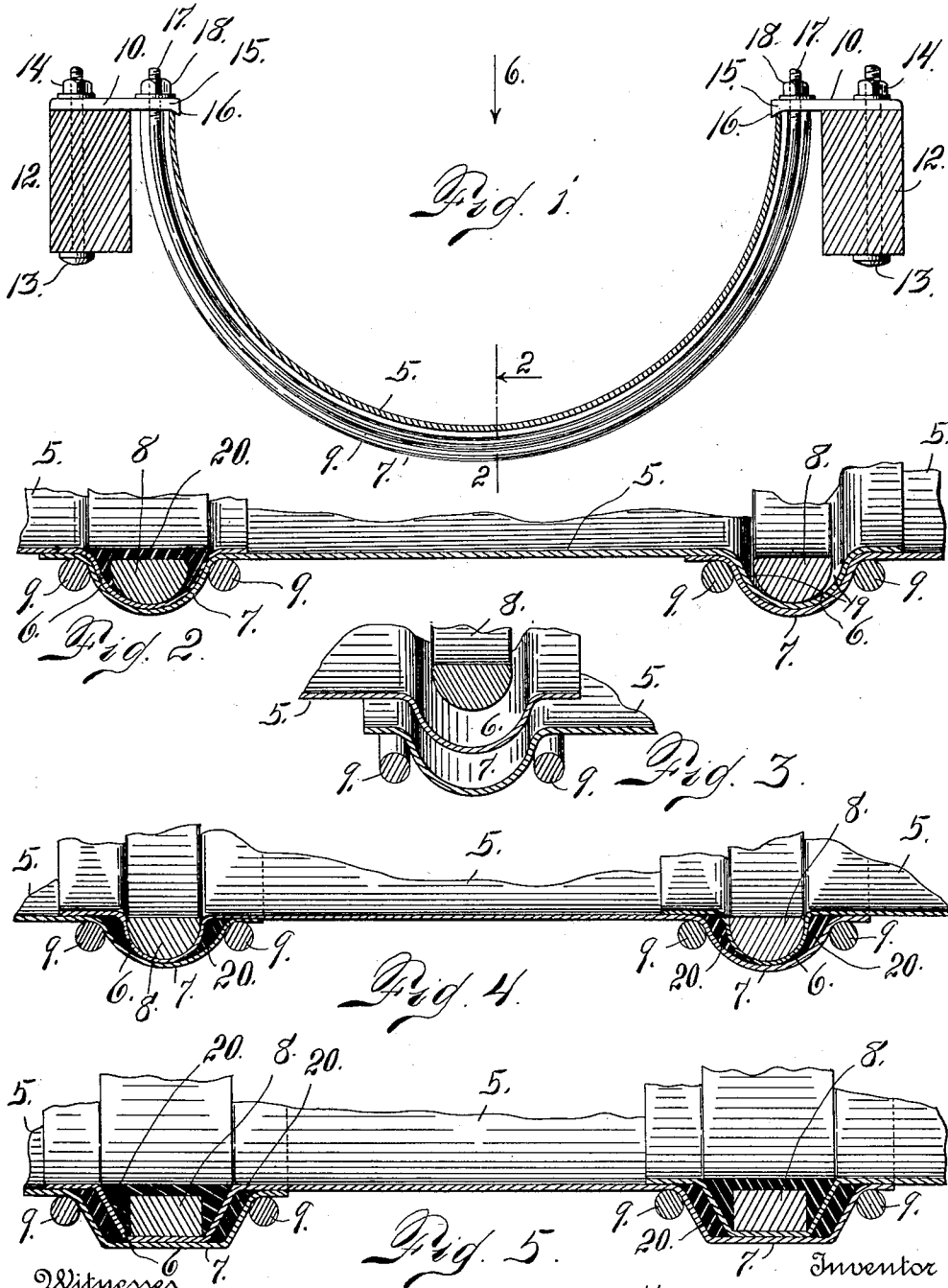


W. LENNON.
TROUGH OR FLUME.
APPLICATION FILED NOV. 29, 1913.

1,218,873.

Patented Mar. 13, 1917.
2 SHEETS—SHEET 1.



Witnesses
Otto E. Haddick.
L. E. Petersen.

Inventor
William Lennon.
By *A. J. Quinn* Attorney

W. LENNON.
TROUGH OR FLUME.
APPLICATION FILED NOV. 29, 1913.

1,218,873.

Patented Mar. 13, 1917.

2 SHEETS—SHEET 2.

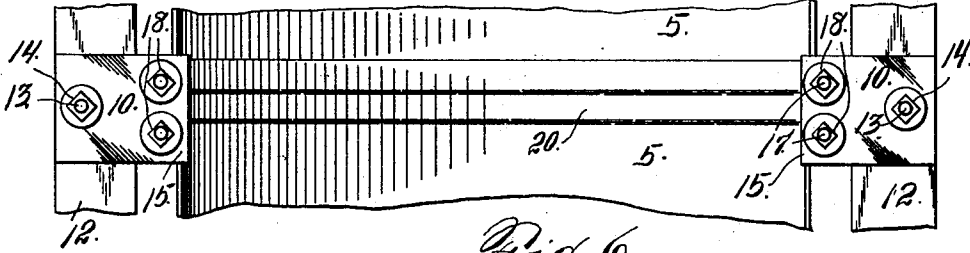


Fig. 6.

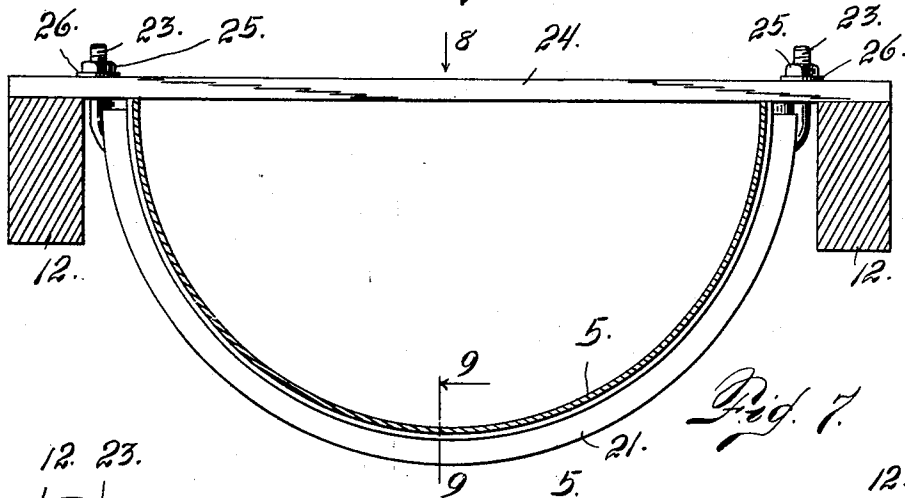


Fig. 7.

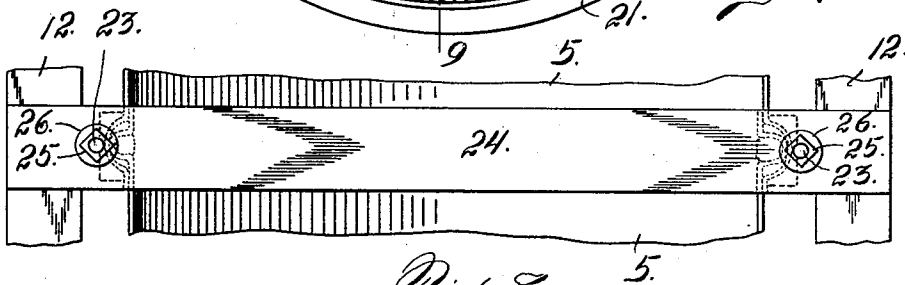


Fig. 8.

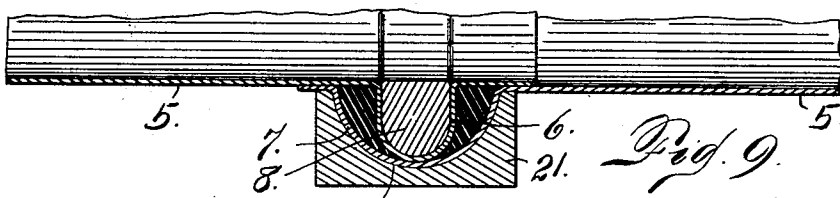


Fig. 9.

Witnesses.
Otto E. Hoddick.
L. E. Petersen.

Inventor
William Lennon.
By *A. J. Brin* Attorney

UNITED STATES PATENT OFFICE.

WILLIAM LENNON, OF MANITOU, COLORADO.

TROUGH OR FLUME.

1,218,873.

Specification of Letters Patent.

Patented Mar. 13, 1917.

Application filed November 29, 1913. Serial No. 803,667.

To all whom it may concern:

Be it known that I, WILLIAM LENNON, a citizen of the United States, residing at Manitou, county of El Paso, and State of Colorado, have invented certain new and useful Improvements in Troughs or Flumes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in troughs or flumes. My present invention relates particularly to the construction of the flume joints, one of the objects of the invention being to permit expansion at the joints, whereby the bulging or distortion of the flume due to expansion, is prevented.

This invention relates to that class of flumes composed of transversely curved sections, preferably composed of metal, the joints of the sections being beaded preferably exteriorly, the sections preferably overlapping each other, the bead of the inner section entering the corresponding bead of the exterior section, the said joint being completed by the use of an interior clamping member located within the bead of the inner section of the joint, exterior clamping means being applied to the exterior portion of the joint, the interior and exterior clamping means being connected to a suitable support arranged adjacent the upper edges of the flume, the interior and exterior clamping members being connected and secured in such a manner as to tightly clamp the parts of the flume joint, whereby a liquid tight closure is produced.

Heretofore, so far as I am aware, in joints of this general character, the beads of the interior and exterior sections of the flume have been made to fit closely, the one within the other, and the interior clamping member has been made to fill the bead of the interior section. My present invention involves making provision for longitudinal expansion of the flume sections at the joints and to this end the beaded parts may be spaced from each other, or these beaded parts may be made to fit one within the other, and the interior clamping band or rod made of such cross sectional area as to leave room for expansion; or expansion

space may be left both between the two beaded parts and also around the interior clamping member.

In order that the joint may be filled for all practical purposes and made liquid tight, the spaces at the joint should be filled with some suitable material which will soften under the same influence, namely heat, which serves to expand the flume sections, as mineral rubber, asphaltum, or similar material.

Having briefly outlined my improved construction, I will proceed to describe the same in detail, reference being made to the accompanying drawing, in which is illustrated an embodiment thereof.

In this drawing—

Figure 1 is a transverse section taken through the flume between joints, one of the joints being shown in side elevation.

Fig. 2 is a longitudinal section of the flume cutting two of the joints thereof. This view may be taken on the line 2—2, Fig. 1.

Fig. 3 is a section taken through one of the joints, cutting the interior and exterior clamping devices transversely, and the overlapping flume sections longitudinally, the parts of the joint being slightly separated in order to more clearly indicate the construction.

Fig. 4 is a section similar to Fig. 2, but showing a slightly modified form of construction.

Fig. 5 is still another view of the same general character, but showing still another modification.

Fig. 6 is a top plan view of the construction shown in Fig. 1.

Fig. 7 is a section of a flume showing another form of joint so far as the exterior clamping member is concerned, and with a cross bar extending entirely across the top of the flume.

Fig. 8 is a top plan view of the same.

Fig. 9 is a section taken on the line 9—9, Fig. 7, the parts being shown on a much larger scale.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate each of the flume sections, and 6 and 7, the interior and exterior beaded overlapping parts, respectively, which are employed in the formation of the joint. Let 8 designate the interior clamping member and 9, 9 two rods arranged on opposite sides of the beaded por-

tion of the joint and constituting the exterior clamping means.

In the preferred form of construction, the trough or flume is suspended from the inner extremities of hanger plates 10 which are secured to side sills 12 by means of suitable fastening devices as bolts 13, secured by nuts 14. The flume is suspended from the extremities 15 of the hanger plates which project inwardly beyond the side sills or supports.

As illustrated in the drawing, the upper extremities of the inner clamping member 8 engage the under surfaces of the hanger plates which are provided with downwardly projecting parts 16 forming stops to facilitate the holding of this member in place. The extremities of the exteriorly located clamping rods 9 pass through openings formed in the hanger plates, their protruding portions 17 being threaded to receive fastening nuts 18.

In the form of construction shown in Fig. 2 the beads 6 and 7 of the overlapping sections are in contact with each other and spaces 19 are left between the clamping member 8 and the bead 6, there being also a space left above the part 8 which spaces are all filled with mineral rubber, asphaltum or similar material 20 which is adapted to form a liquid tight joint and at the same time, fill the space above the member 8 so that the upper surface of the filling shall be flush or approximately flush, with the inner surface of the trough sections.

In the form of construction shown in Fig. 4, the member 8 fits closely within the bead 6, but the latter is separated from the bead 7 on opposite sides, this space being filled with the mineral rubber or other similar material 20.

In the construction shown in Fig. 5, the beads 6 and 7 are of somewhat different shape and the clamping device 8 is shown of different cross sectional area. In this form of construction, there is a space left between the two beads and also a space both above and on opposite sides of the member 8 within the bead 6, all of which spaces are filled with the material 20. In this form of construction, the joint possesses a great capacity for expansion, and compensation may be made for any degree of expansion that may possibly occur, without in any way injuring the flume.

It is assumed that the flume sections are made of metal which has a considerable coefficient of expansion, particularly in a direction extending longitudinally of the flume. It is evident that in hot weather, flumes of this character which are always exposed, to a greater or less extent, to the action of the sun, will expand considerably in a longitudinal direction. However, the heat which will produce this expansion will

soften the filling 20 and cause the beaded portions of the flume sections to yield longitudinally and to permit the necessary expansion without bulging the flume at the joints, or distorting the same in any way. It is also believed that the spaces left between the parts of the joint as heretofore explained also have an additional value as it is thought that the clamping devices will act to better advantage and bring the parts of the joint into more intimate contact by reason of the fact that the parts which are differently acted on by the clamping members may give or spring slightly as the nuts 18 are tightened.

While in the drawing I have illustrated and described herein a special construction for attaching the joint clamping devices at their upper extremities, it must be understood that my improved joint may be applied with equal advantage to flumes, while other forms of supporting means are employed. In fact, the improvement herein may be applied to any form of flume joint regardless of the manner of connecting the clamping devices to a suitable support at their upper extremities.

In the form of construction shown in Figs. 7, 8 and 9, an exterior clamping member 21 is employed, the said member being grooved as shown at 22 to receive the exterior bead 7 of one of the overlapping sections 5 of the flume. The upper extremities of this member 21 terminate in threaded portions 23 which pass through the extremities of a cross bar 24. In this instance, the clamping member 21 is held in place by nuts 25 which are screwed down upon washers 26 which engage the adjacent parts.

Attention is called to the fact that the distance between the spaced parts of the joint in this construction varies, whereby the said parts are non-uniformly spaced. This is an important advantage, since where a filling is employed, it has a sort of wedge-shaped arrangement in the joint, the point of the wedge being located or approaching a portion of the joint where two metal parts are in contact or approximately in contact. Again, where the space is not filled with the mineral rubber or other similar substance, the two metal parts are brought together, thus forming a tight joint at the point of contact, which result would not be obtained by the uniform spacing of the parts of the joint.

Having thus described my invention, what I claim is:

1. A flume composed of sections having overlapping extremities provided with interlocking beads, inner and outer clamping members, the inner clamping member being located within the bead of the adjacent section, the bead being larger than said member and the space within the bead around the

clamping member being non-uniform in depth and filled with material adapted to soften under the influence of a degree of heat sufficient to expand the flume in a lengthwise direction.

2. A flume composed of sections having overlapping extremities provided with interlocking beads, inner and outer clamping members, the inner clamping member being located within the bead of the adjacent section, the bead being larger than said member and the space within the bead around the clamping member being filled with material adapted to soften under the influence of heat, for the purpose set forth.

3. A flume composed of sections having overlapping extremities provided with interlocking beads, said flume including an inner clamping member located within the bead of the adjacent section, the bead being larger

than said member and the space within the bead around the clamping member being filled with material adapted to soften under the influence of heat, for the purpose set forth.

4. A flume having overlapping extremities provided with interlocking beads, said flume including an inner clamping member located within the adjacent bead which is larger than said member and so spaced therefrom that the bead and member engage each other at a single point only, the said space being filled with resilient material, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM LENNON.

Witnesses:

A. J. O'BRIEN,

A. EBERT O'BRIEN.

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