K. J. THORSBY.

FLUME.

APPLICATION FILED MAY 31, 1916.

1,219,681.

Patented Mar. 20, 1917.

2 SHEETS—SHEET 1.

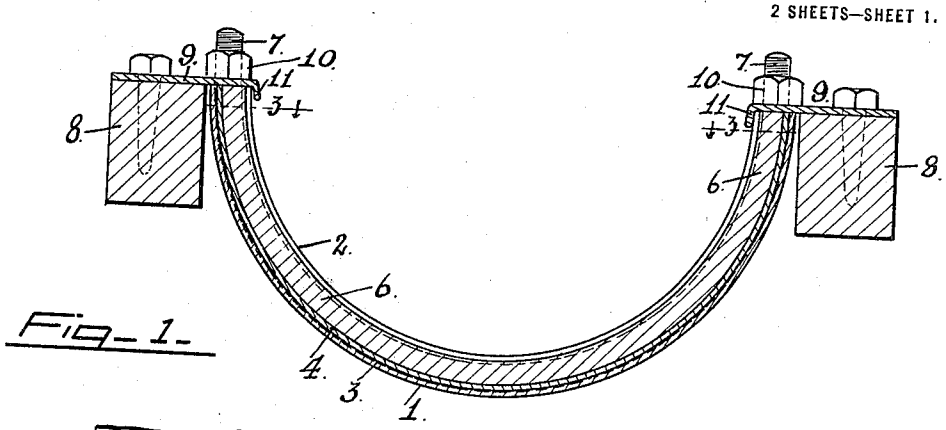


Fig. 1.

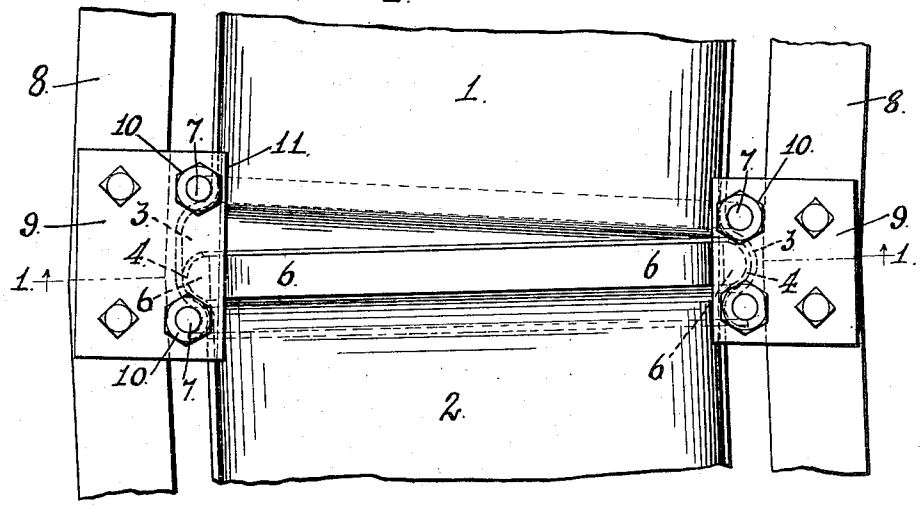


Fig. 2.

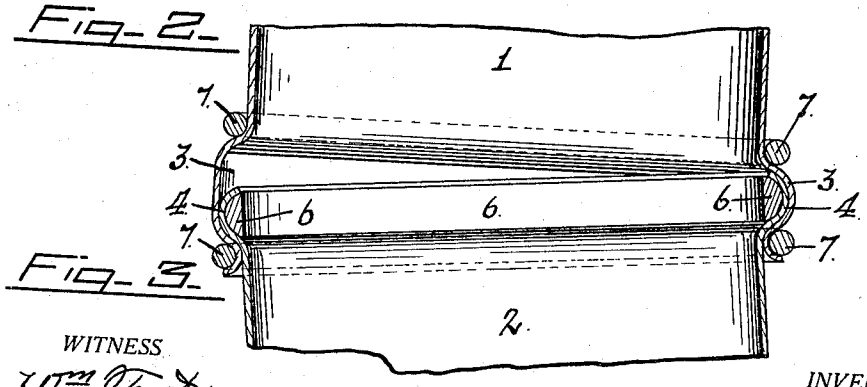


Fig. 3.

WITNESS

Wm. F. Drew

INVENTOR.

Karl Johan Thorsby

BY

Wm. F. Booth

ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

K. J. THORSBY.

FLUME.

APPLICATION FILED MAY 31, 1916.

1,219,681.

Patented Mar. 20, 1917.

2 SHEETS—SHEET 2.

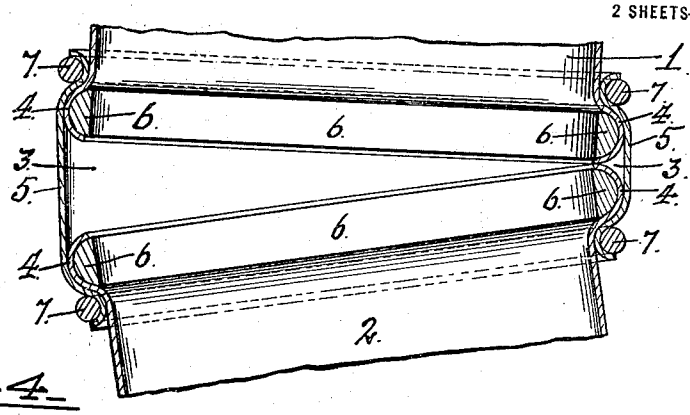


Fig. 4.

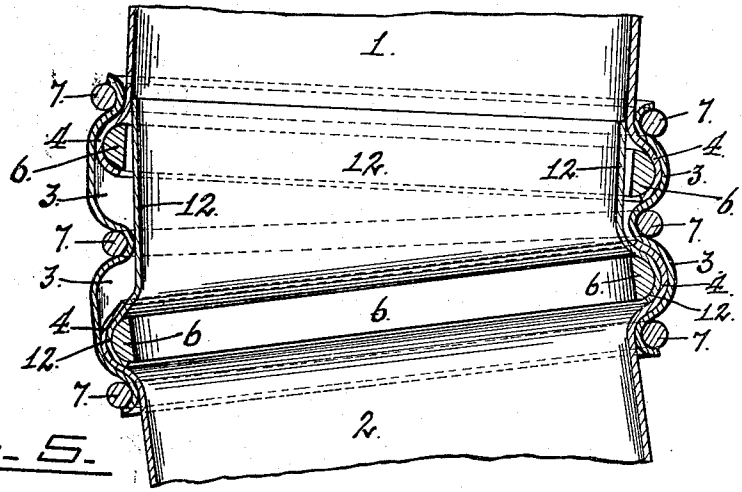


Fig. 5.

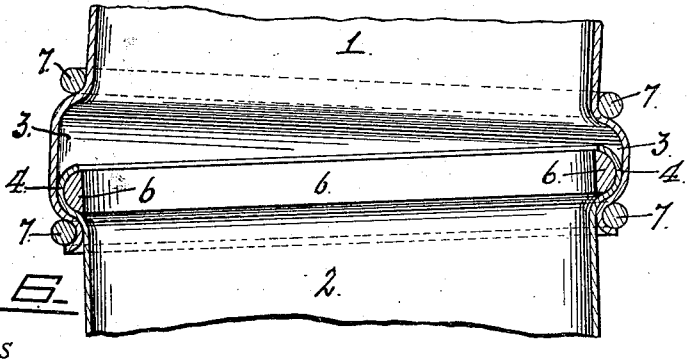


Fig. 6.

WITNESS

Wm. C. Drew

INVENTOR.

Karl Johan Thorsby

BY

Wm. F. Booth

ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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

FLUME.

1,219,681. Specification of Letters Patent. Patented Mar. 20, 1917.

Application filed May 31, 1916. Serial No. 100,848.

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 Flumes, of which the following is a specification.

My invention relates to the class of flumes, and particularly to flumes composed of sheet metal sections united by suitable joints.

The object of my invention is to provide a novel flexible joint which will greatly simplify the construction of metal flumes, and at the same time produce an effective connection of the flume sections at points where it is either impossible or impractical to employ standard flume sections, namely at curves and bends, and at such places where the expansion and contraction of the metal is pronounced and where ordinary flume joints would not give sufficient flexibility.

To this end my invention consists in the novel flume which I shall hereinafter fully describe by reference to the accompanying drawings, in which—

Figure 1 is a vertical cross section of my flume on the line 1—1 of Fig. 2.

Fig. 2 is a plan of the same.

Fig. 3 is a horizontal cross section on the line 3—3 of Fig. 1.

Fig. 4 is a horizontal cross section similar to Fig. 3, but showing a modification of the joint.

Fig. 5 is a similar cross section showing a further modification.

Fig. 6 is a cross section showing the application to my flexible joint of a feature of expansion and contraction, the illustration here used being for example, founded upon the disclosure of Fig. 3.

1 is one section of a flume and 2 is an adjacent section.

One of these sections, say section 1, is formed at or near its end with a rib which results in an inner pocket or recess 3, said pocket rib extending circumferentially of the section to its edges. The essential feature of this pocket is that it widens from one extremity to the other.

At the end of the other flume section 2 is formed a circumferentially directed outwardly projecting offset rib 4. This offset rib has a width such that when the adjacent ends of the two sections are fitted together in overlapping relation, it will lie within the pocket 3, and on account of the increasing width of the pocket, the rib may have therein an arcuate adjustment about one of its extremities as an axis, thereby providing for a flexible joint adapted for curves and bends in the flume. The axis of the curve or bend is at the narrow end of the pocket and in this axis the relative width of the pocket and offset may be such, as shown in Fig. 3, as to form a close fit. But, as shown in Fig. 6, if it be desired to incorporate in the joint a feature providing for expansion and contraction, the necessary relative or compensating movement of the sections in their interfitting relation may be had by having the narrow side of the pocket 3 sufficiently wider than the offset 4 to permit the play due to expansion and contraction.

It will thus be seen that as the essential feature of my invention is the construction of a joint comprising a pocket with a width increasing from one extremity to the other and an offset seated in the pocket and having an adjustment therein on an arc about an axis at the narrower end of the pocket to provide for a curve or bend in the flume, the particular means for reaching this end may be varied. In Figs. 3 and 6 I show this feature in its simplest form, that is, the complemental parts being formed directly in the overlapping ends of the adjacent flume sections. In Fig. 4, however, I show the widening pocket 3 formed in an independent connecting member 5; and an offset 4 formed upon the end of each flume section 1 and 2, both offsets lying in the single pocket of the independent connecting member 5. And, also, in Fig. 5 I show the independent connecting member 5 as formed with two widening pockets 3, the offset 4 of one flume section lying in one of said pockets and the offset of the other flume section lying in the other pocket.

It will be readily understood that the expansion and contraction feature of Fig. 6 may be applied also to the modifications of Figs. 4 and 5. Any suitable means may be employed to clamp the joint thus described.

For illustration I show an inner bar 6 fitted to the offset 4 and a plurality of outer bars or rods 7 applied, as in Fig. 3, to the overlapping flume section 1, and in Figs. 4 and 5 to the independent connecting member 5.

8 are the side timbers or supports. Upon

these supports are fastened the clamp plates 9, the inwardly projecting ends of which lie and press down upon the ends of the inner bar 6. The outer rods 7 pass up through the inwardly projecting portions of the clamp plates 9 and are fitted with any suitable tightening devices, such, for example, as the nuts 10.

The inner edges of the clamp plates 9 are formed with lips 11 which extending downwardly engage the inner surfaces of the flume section and the bar 6. By tightening up the nuts 10 the clamp plates 9 will force the rods 7 against the outer section and by bearing on the ends of the inner bar 6 will force said bar to hold the offset 4 in the pocket 3.

In Fig. 5 I show a cover sheet 12 extending over the pockets and giving a smooth interior. This sheet may be held under the inner clamping bar of either section.

I claim:—

1. In a flume, the combination with adjacent sections thereof of joining instrumentalities comprising interfitting pocket and offset members transverse to the flume axis, said pocket member having a width increasing from one extremity to the other and said offset member having a width adapting it for arcuate adjustment in the pocket member about one end as an axis; and means for clamping said members together.

2. In a flume, the combination with adjacent sections thereof of joining instrumentalities comprising interfitting pocket and offset members transverse to the flume axis, said pocket member having a width increasing from one extremity to the other and said offset member having a width adapting it for arcuate adjustment in the pocket member about one end as an axis; clamping members to hold the pocket and offset members together, and means for tightening said clamping members on their seats.

3. In a flume, the combination with adjacent sections thereof of joining instrumentalities comprising interfitting pocket and offset members transverse to the flume axis, said pocket member having a width increasing from one extremity to the other and said offset member having a width adapting it for arcuate adjustment in the pocket member about one end as an axis; outer and inner clamping members applied to said pocket and offset members respectively to hold them together; and means for tightening said clamping members on their seats.

4. In a flume, the combination of adjacent sections thereof with their ends in overlapping relation, one of said ends being formed with a pocket circumferentially directed from edge to edge of the section and increasing in width from one extremity to the other, and the other section being formed with an offset circumferentially directed from edge to edge of the section and having a width adapting it to fit within the pocket of the first section and to be adjusted therein about one end as an axis; and means for clamping said offset in said pocket.

5. In a flume, the combination of adjacent sections thereof with their ends in overlapping relation, one of said ends being formed with a pocket circumferentially directed from edge to edge of the section and increasing in width from one extremity to the other, and the other section being formed with an offset circumferentially directed from edge to edge of the section and having a width adapting it to fit within the pocket of the first section and to be adjusted therein about one end as an axis; and means for clamping said offset in said pocket comprising pressure members and means for tightening said members in their seats.

6. In a flume, the combination of adjacent sections thereof with their ends in overlapping relation, one of said ends being formed with a pocket circumferentially directed from edge to edge of the section and increasing in width from one extremity to the other, and the other section being formed with an offset circumferentially directed from edge to edge of the section and having a width adapting it to fit within the pocket of the first section and to be adjusted therein about one end as an axis; and means for clamping said offset in said pocket comprising outer and inner members applied to said pocket and offset respectively, and means for tightening said members in their seats.

7. In a flume, the combination of adjacent sections thereof; an independent connecting member enveloping the adjacent ends of said sections, said connecting member being formed with a pocket on its inner face circumferentially directed and having a width increasing from one extremity to the other; a circumferentially directed offset formed on the end of each flume section fitting the pocket of the connecting member and having a width adapting it for arcuate adjustment therein about one end as an axis; and means for holding said offsets and pockets together.

8. In a flume, the combination of adjacent sections thereof; an independent connecting member enveloping the adjacent ends of said sections and formed on its inner face with a pair of circumferentially directed pockets each having a width increasing from one extremity to the other; a circumferentially directed offset formed on the end of each flume section adapted to fit one of the pockets of the connecting member and having a width adapting it for arcuate adjustment therein about one end as an axis; and means for holding said offsets and pockets together.

9. In a flume, the combination with adjacent sections thereof of joining instrumentalities comprising interfitting pocket and offset members transverse to the flume axis, said pocket member having a width increasing from one extremity to the other and said offset member having a width adapting it for arcuate adjustment in the pocket member about one end as an axis; outer and inner clamping members applied to said pocket and offset members respectively to hold them together; means for tightening said clamping members on their seats; and a cover sheet held by the inner clamping member and lying over the pocket member of the joining instrumentalities to provide a smooth interior.

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,
W. E. COCHRAN.

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