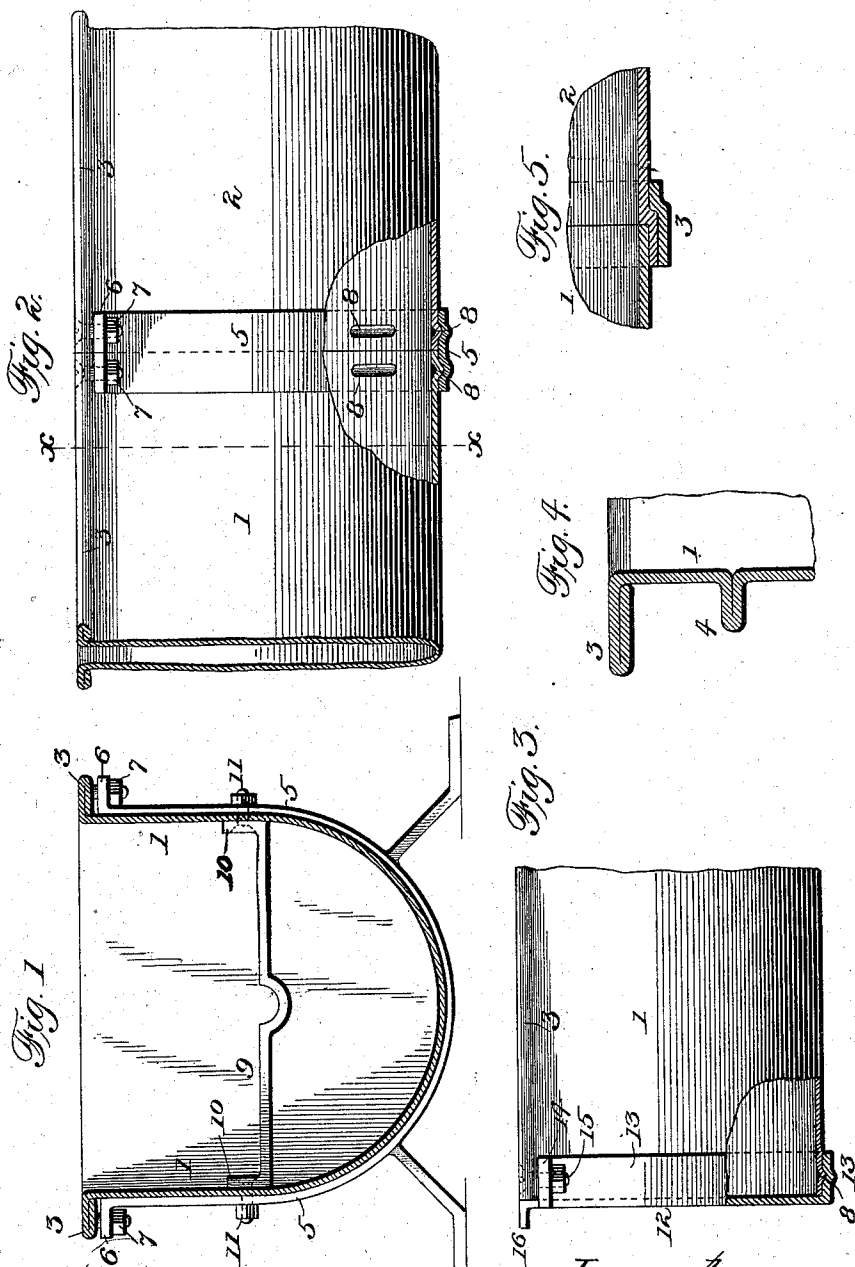


(No Model.)

P. A. LORENZ.  
SHEET METAL TROUGH OR CONDUCTOR.

No. 559,338.

Patented Apr. 28, 1896.



Attest:  
John Enders, Jr.  
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by Robert Burns Attorney.

# UNITED STATES PATENT OFFICE.

PETER A. LORENZ, OF CHICAGO, ILLINOIS.

## SHEET-METAL TROUGH OR CONDUCTOR.

SPECIFICATION forming part of Letters Patent No. 559,338, dated April 28, 1896.

Application filed December 22, 1894. Serial No. 532,741. (No model.)

*To all whom it may concern:*

Be it known that I, PETER A. LORENZ, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sheet-Metal Troughs or Conductors; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to that form of troughs or conductors for endless screw conveyers and like uses that are formed of sheet-metal sections secured together to afford the desired length; and the objects of the present improvements are as follows: to provide a simple and effective means for attaining a very substantial and tight joint between the sections of the conductor or trough, and, further, to provide a simple and durable construction and mode of attachment for the ends or heads of the conductor or trough, as will hereinafter more fully appear, and be more particularly pointed out in the claims. I attain such objects by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a transverse sectional elevation at line *x x*, Fig. 2, of a trough or conductor constructed in accordance with my present invention; Fig. 2, a longitudinal elevation of the same with portions of the joint in section; Fig. 3, a side elevation of one end of the trough or conductor, illustrating the attachment of an end head thereof; Figs. 4 and 5, detail sections of modifications.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 and 2 are continuous trough-sections formed of sheet metal of the required length and gage—that is, bent into the required trough shape—with the edges bent outward to form longitudinal side flanges 3, the required stiffness being imparted thereto by folding the metal thereof upon itself, as shown. These flanges are for the threefold purposes of strengthening the trough, affording means for attaching a cover, and mainly to afford means for securing the sections together.

4 is a longitudinally-extending flat bead

formed in the body of the trough at one or both sides thereof and some distance below the flanges 3 to afford additional stiffness thereto when required.

The adjacent ends of the sections may be butted together, as shown in Fig. 2, or lapped together, as shown in Fig. 5, in which latter case one section will be offset so as to receive the other and impart a smooth or plane inner surface to the trough.

5 is a straining or coupling band, either of wrought or cast metal, having a curved body portion corresponding in form with that of the trough-sections 1 and 2 and having flanges 6 at each side by which it is attached in place, as hereinafter set forth. It is material to the present invention that this coupling-band 5 be somewhat less in height, so that when it embraces the joined ends of the trough-sections 1 and 2 its flanges 6 will be some distance away from the flanges 3 of the trough-sections in order to admit of a tight clamping of the parts together.

7 are bolts, rivets, or other equivalent attaching means that pass through the respective flanges 6 and 3 of the coupling-band and the trough-sections, screw-bolts, as shown in the drawings, being preferred as affording the most ready means for straining the parts together in joining up the trough-sections.

8 are projections or beads on the ends of the trough-sections adapted to fit in corresponding recesses in the coupling-band 5, to aid in forming a stronger union of the different parts, and these projections may be more or less continuous around the ends of the trough-sections, as found most desirable or convenient.

In the practical carrying out of my present invention the coupling-band 5 may form a part of the supporting-bracket of the trough, as illustrated in Fig. 1.

9 is a hanger-bracket within the trough, by which an endless screw conveyer may be supported, and in the present invention this hanger will be provided with flanges 10, through which the attaching-bolts 11 pass, as well as through the coupling-band 5, so as to attain a more strong and rigid attachment.

12 is an end plate for closing the end of the trough, and in the present invention this end plate will be provided with a flange 13, that

corresponds with the coupling-band 5, and is provided with similar top flanges 14, by which it is attached by bolts 15 to the end of the trough, such bolts passing through the side flanges 3 of the trough.

16 is a longitudinal flange at the top of the end plate 12, and arranged in a plane with the top of the main trough, so as to afford a smooth and uniform surface at the top of the completed trough and afford a close fit for the usual cover thereof.

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

1. An open-topped trough or conductor, consisting of sections that are formed with outwardly-projecting and longitudinally-extending marginal flanges 3, in combination with a coupling-band 5, having outwardly-extending flanges 6 on its respective ends, and means for attaching the trough-flanges 3 and coupling-band flanges 6 together, the same consisting of rivets or bolts 7, passing through orifices in said flanges, substantially as and for the purpose set forth.

2. An open-topped trough or conductor consisting of sections that are formed with outwardly-projecting and longitudinally-extending marginal flanges 3, and beads or projections 8 in combination with the coupling-band 5 having outwardly-extending flanges 6, and recesses adapted to receive the beads 8, and means for attaching the flanges 3 and 6 together, substantially as and for the purpose set forth.

3. An open-topped trough or conductor body, having outwardly-projecting and longitudinally-extending marginal flanges 3, in

combination with the end plate or head 12, having a flange 13, corresponding in shape to the body of the trough and adapted to fit the outside of the same, and outwardly-extending flanges 14 at its upper corners, and means for attaching the flanges 3 and 14 together, substantially as and for the purpose set forth.

4. An open-topped trough or conductor body, having outwardly-projecting and longitudinally-extending marginal flanges 3, in combination with the end plate or head 12, provided with an outwardly-projecting flange 16, on a level with the top surface of the trough-body 1, a flange 13 corresponding in shape to the trough-body and adapted to fit the outside of the same, and outwardly-extending flanges 14 at its upper corners, and means for attaching the flanges 3 and 14 together, substantially as and for the purpose set forth.

5. An open-topped trough or conductor having outwardly-projecting and longitudinally-extending marginal flanges 3, in combination with the clamping-band 5 having outwardly-projecting flanges 6 on its respective ends, means for securing said flanges together, a transversely-extending hanger-bracket 9 having flanges 10 and attaching rivets or bolts 11, passing through the flanges 10, the walls of trough, and the clamping-band 5, substantially as and for the purpose set forth.

In testimony whereof witness my hand this 14th day of December, 1894.

PETER A. LORENZ.

In presence of--

ROBERT BURNS,  
GEO. H. ARTHUR.