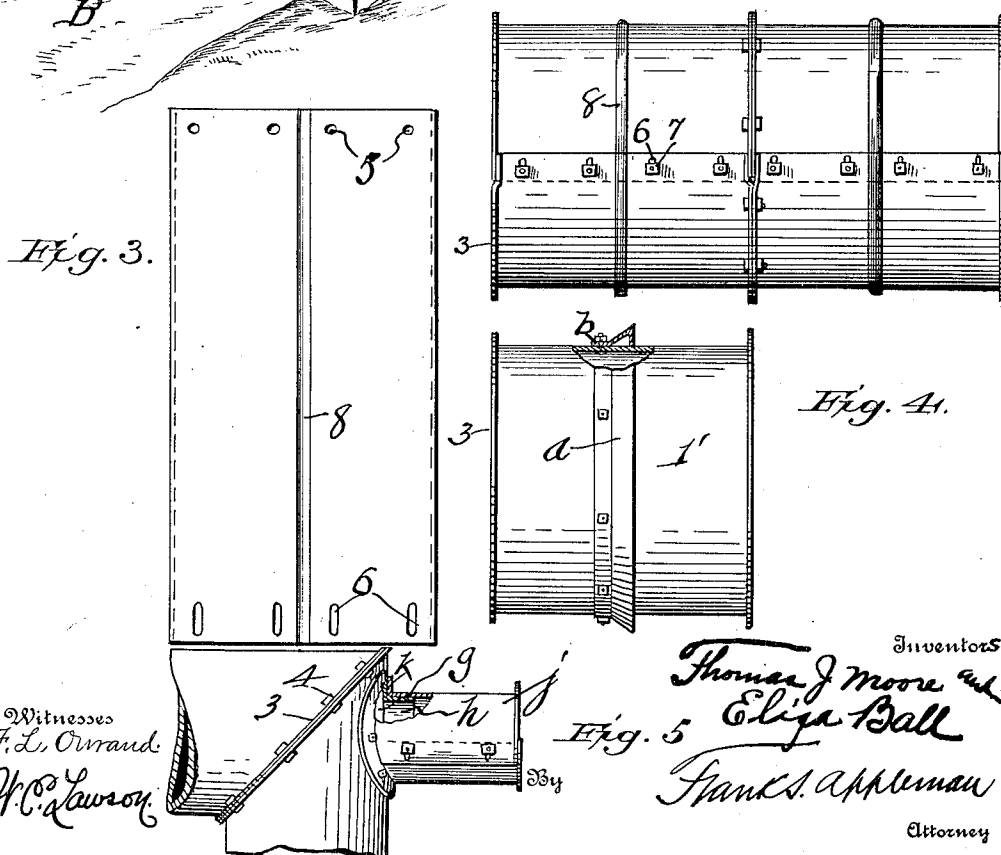
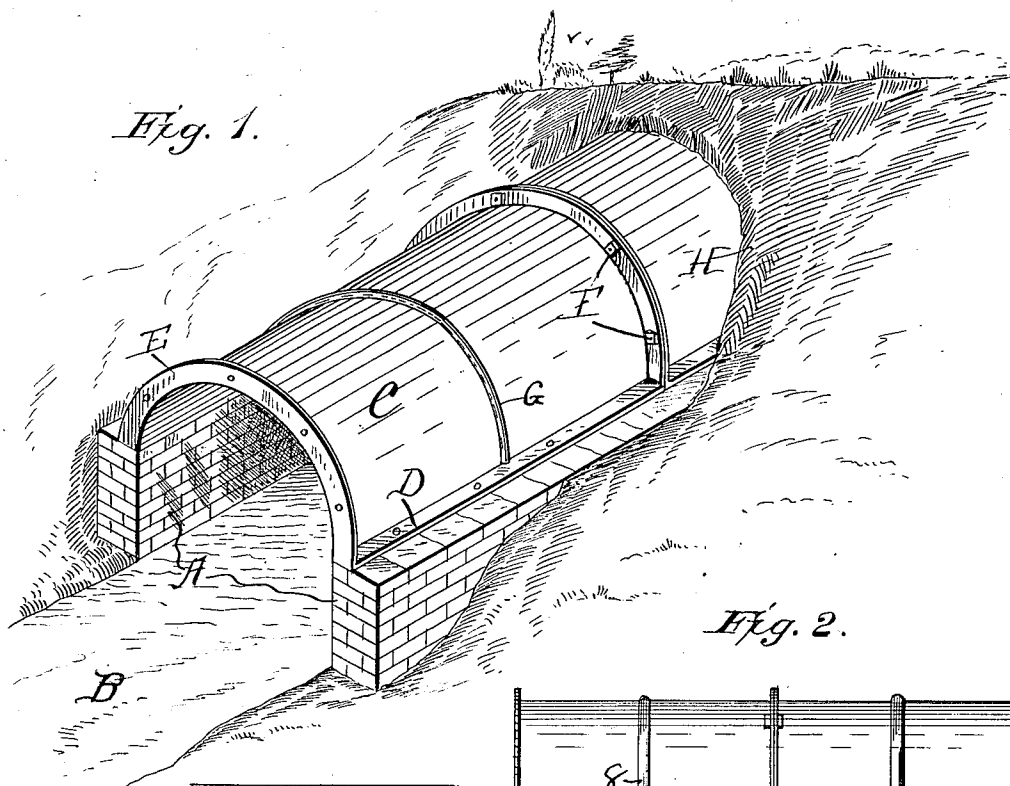


No. 838,263.

PATENTED DEC. 11, 1906.

T. J. MOORE & E. BALL.
METAL CONDUIT CONSTRUCTION.

APPLICATION FILED AUG. 21, 1905.



UNITED STATES PATENT OFFICE.

THOMAS J. MOORE, OF SANDUSKY, AND ELIGA BALL, OF MINDEN CITY,
MICHIGAN.

METAL-CONDUIT CONSTRUCTION.

No. 838,263.

Specification of Letters Patent.

Patented Dec. 11, 1906.

Application filed August 21, 1905. Serial No. 275,064.

To all whom it may concern:

Be it known that we, THOMAS J. MOORE, residing at Sandusky, and ELIGA BALL, residing at Minden City, in the county of Sanilac and State of Michigan, citizens of the United States of America, have invented certain new and useful Improvements in Metal-Conduit Construction, of which the following is a specification.

10 This invention relates to new and useful improvements in pipes, and is intended more especially for sewer-pipes and culvert construction or the like.

15 It is an object of the invention to construct a pipe of this character in such a manner as to allow for the expansion or contraction thereof as may be caused by the elements.

20 Furthermore, it is an object of the invention to furnish a foundation placed on steel girders in arched form for support for concrete for covering for large bridges or viaducts.

25 It is also an object of the invention to provide novel means on the outer surface of the culvert or pipe whereby earth or other filler is prevented from washing away.

30 Further, it is an object of the invention to provide a novel device of this character that will be simple in construction, efficient in practice, and economical to manufacture.

35 With the above and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

40 In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, wherein like characters denote corresponding parts in the several views, in which—

45 Figure 1 is a view in perspective showing the invention applied to a culvert or bridge covering. Fig. 2 is a view in elevation of a pipe constructed according to the invention. Fig. 3 is a view of Fig. 2 in the flat. Fig. 4 is a view of a modified form of the invention. Fig. 5 is a view in elevation, partly in section, of a further modified form of the invention.

50 In the drawings, Fig. 1, A indicates the walls of a culvert arranged to either side of the stream B. Bridging the stream and resting on the walls is the culvert C, which is formed of sheet metal, preferably galvanized iron,

and has its sides bent to form the flanges D, which are suitably secured to the walls A. 55 The ends of the culvert or culvert-sections C are also bent to form flanges E, which abut the flanges of the next succeeding section and are engaged by suitable bolts or rivets F for making one continuous culvert. 60

Intermediate its length each culvert-section is provided with a transverse corrugation G, which extends on the outer surface of the section. This corrugation is intended to strengthen the tube and to be engaged by 65 the earth or other filler H and to hold the same from being washed away, as is frequently the case in practice. The filler bears down against the corrugation, and said corrugation tends to act as an anchor therefor, 70 as is thought to be clearly apparent to those skilled in the art.

In Figs. 2 and 3, 1 indicates a sheet of rolled metal, preferably of galvanized iron; but of course it is to be understood that sheet metal 75 of any kind may be employed. In practice galvanized iron has proved the best. The ends of the sheet are bent at right angles to form flanges 3, each of which is provided with a series of apertures (not shown) for the 80 passage of bolts or rivets 4 when the sheet is in applied position. Along one side of the sheet at predetermined distances is arranged a series of apertures 5, while along the opposite side and alining with the apertures is a 85 series of transverse slots 6. The sheet is intended to be rolled into a cylindrical form with the sides overlapping, the apertures of one side registering with the slots of the opposite sides. Through the apertures and 90 slots pass bolts or rivets 7, which hold the sheet in its operative form. By means of the slots the sheet is permitted to expand or contract according to the elements, and thereby obviate the possibility of the pipe bursting. 95 The end flanges 3 are intended to contact with the end flanges of a succeeding pipe, and the bolts or rivets 4 are intended to engage the same in order that a continuous pipe may be formed. To prevent the pipe from buckling 100 and to keep the earth or other filler from washing away, transverse corrugations 8 are formed in the sheet 1, similar to those illustrated in the culvert, Fig. 1. These corrugations may be of any depth or width as the re- 105 quirements of practice may dictate.

In Fig. 4 in place of the corrugations is shown an angle iron or strip *a*. This strip is approximately V-shaped in cross-section and has arranged along one of its edges a flange *b*, which is secured to the sheet or pipe 1' in any suitable manner. The opposite edge of the strip is free. By this arrangement a yieldable strip is presented which will perform all the function of the corrugations and which will at the same time no wise interfere with the filling upon the expansion or contraction of the pipe.

In Fig. 5 is shown a corner or joint of a pipe constructed in accordance with this invention, together with a branch secured thereto. The angle of the branch is determined by the angle of the cut of the sheet, which is thought to be clearly apparent from the drawings. When a branch is to be connected to a section, said section is cut away to form an aperture *g*, the edge of which is turned up to form a flange *h*. The branch pipe *j* embraces the flange and is provided itself with a flange *k*, which is suitably connected to the pipe-section. The branch *j* is constructed similar to the pipe proper. It may be stated that the end of the branch engaging the pipe is so cut as to compensate for the curve of the pipe-section.

With pipes constructed according to this invention it is not necessary to ship the large

pipes in bulk; but the pipes can be forwarded flat and then assembled when at their destination. By this means a great saving in transportation is afforded. The same applies to culverts.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A conduit comprising in its construction a plurality of sections, and an angle-iron secured to each section, said angle-iron consisting of a strip of metal bent into an approximate V shape in cross-section, one edge of the iron being secured to the section while the opposite edge is free.

2. A pipe comprising a flexible sheet of metal, said sheet having a series of apertures along one edge and a series of slots along the opposite edge, the slots alining with the apertures and adapted to register therewith when the sheet is rolled, and means passing through the apertures and slots to hold the sheet in its rolled form.

In testimony whereof we affix our signatures, in the presence of two witnesses, this 17th day of August, 1905.

THOS. J. MOORE.
ELIGA BALL.

Witnesses:

WM. DAWSON,
R. J. LOREE.