No. 890,256.

PATENTED JUNE 9, 1908.

J. S. BAYER.

CULVERT.

APPLICATION FILED JAN. 20, 1908.

2 SHEETS—SHEET 1.

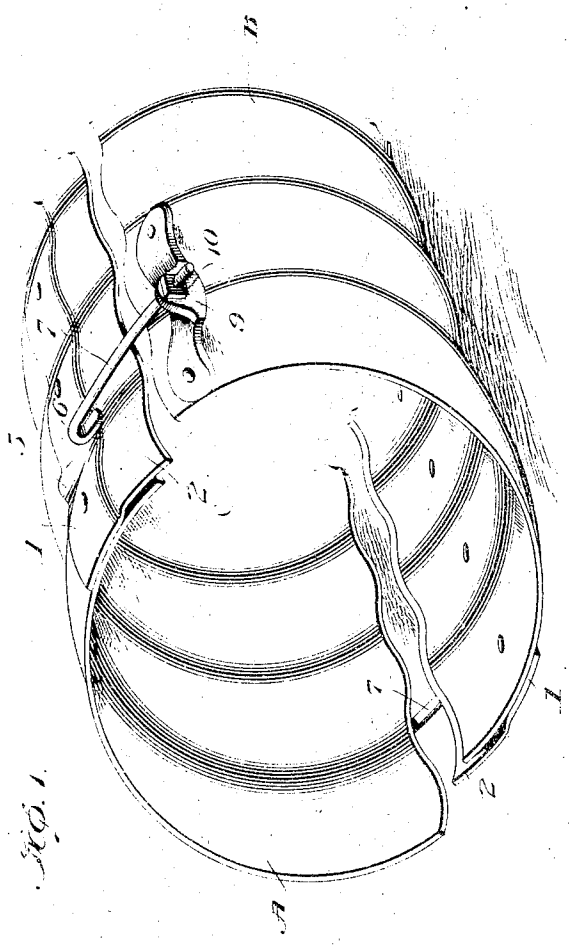


Fig. 1.

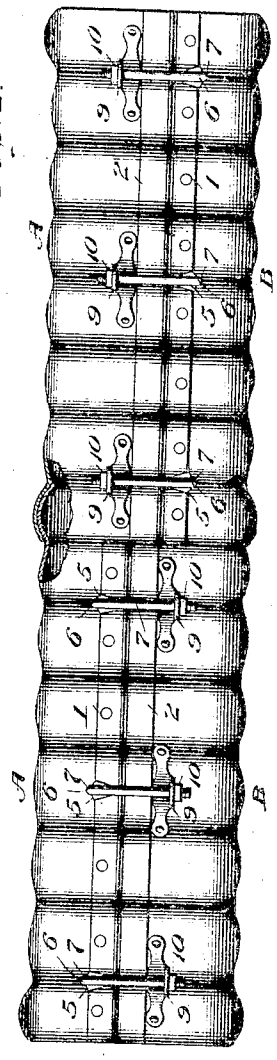


Fig. 2.

Witnesses

A. A. Hammond.

Inventor

John S. Bayer

By Addison G. Dayton

his Attorney

No. 890,256. PATENTED JUNE 9, 1908.

J. S. BAYER.

CULVERT.

APPLICATION FILED JAN. 20, 1908.

2 SHEETS—SHEET 2.

Fig. 3.

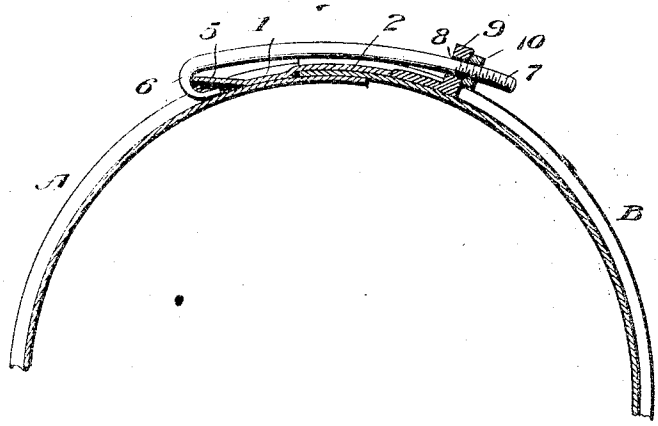
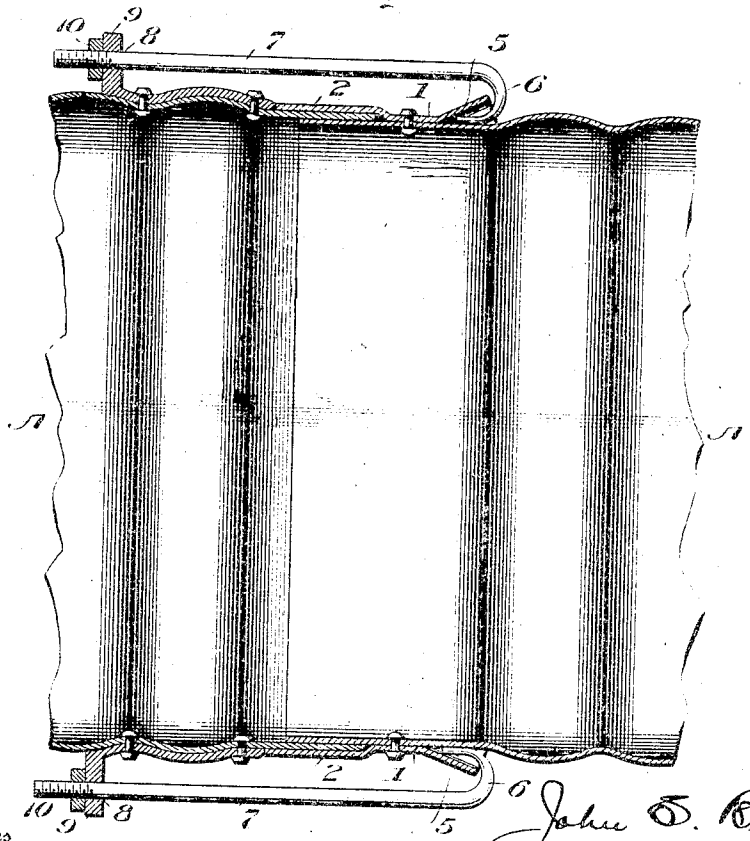



Fig. 4.




Witnesses

W. F. Shuck.

A. A. Hammond.

Inventor

John S. Bayer

By Addison & DuBois

his Attorney

# UNITED STATES PATENT OFFICE.

JOHN S. BAYER, OF WARREN, PENNSYLVANIA.

## CULVERT.

No. 890,256. Specification of Letters Patent. Patented June 9, 1908.

Application filed January 20, 1908. Serial No. 411,748.

*To all whom it may concern:*

Be it known that I, JOHN S. BAYER, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented certain new and useful Improvements in Culverts, of which the following is a specification.

My invention relates to an improvement in culverts. In a previous patent, I disclosed a culvert made of corrugated sheet metal with a bell-shaped mouth which was adapted to be bent around the end corrugations of the next section, whereby the sections were held together.

My present invention relates more particularly to improvements in fastening means for securing the sections together or when the pipes are made of half sections, for securing those half sections together; and among the objects accomplished by my invention, it may be mentioned that no special machinery is required in the manufacture of the culvert, which is quite a desideratum; another object is to provide a culvert in which the ends of the sections when made in a single piece, or the edges when in half sections, are reinforced whereby to give them greater strength; another object is to provide a culvert which may be put together as it is put in place, so that the entire roadway does not have to be closed as the culvert is being put in.

A further object is to provide a culvert which may be made in half sections if desired, so that the sections may be nested in transportation whereby the cost of handling and freight is decreased, and when thus made in sections, the sections are precisely alike, so that they may be easily and quickly fitted together.

With the foregoing objects in view, my present invention consists in certain novel features of construction and combinations of parts which will be hereinafter described and pointed out in the claims.

In the accompanying drawings:—Figure 1 is a perspective view of two half sections separated. Fig. 2 is a plan view showing two main sections secured together. Fig. 3 is a detail in transverse section through the fastener. Fig. 4 is a fragmentary view in detail showing the application of the improvement to the ends of sections made in a single piece.

In the preferred form, the construction in which the culvert is made in half sections as shown in Fig. 1, A and B are the two sections. These are made of corrugated sheet metal precisely alike so that they are interchangeable and can be fitted together in any manner. On one edge of each section, a plate F is riveted or otherwise secured, the outer edge having an offset flange 2 whereby a socket is formed to receive the corresponding edge of the other half section. This plate not only forms a simple and an effectual joint at the edge, but also reinforces the half sections at opposite edges longitudinal of the culvert sections, thus giving additional strength. On the inner edges of this plate, lips 5, 5, may be formed to receive the hooked ends 6, 6, of the bolts 7, 7, and these bolts extend through the holes 8, 8, in the lugs 9, 9, secured on the other sections, after which the nuts 10, 10, are screwed tight, and the half sections are held together.

In forming a culvert and assembling the sections, the ends of the half sections are separated to receive the adjacent ends of the next section, after which they are clamped securely together, thereby making a rigid and effectual joint which will not pull apart. In the construction shown in Fig. 4, this same idea is applied to the end of the culvert sections, the sections in this instance being made in a single piece, instead of two half sections.

The great advantage of this invention is, and especially when the culvert is made in half sections as indicated, that these half sections may be nested, and thus the cost of handling and freight is reduced to a minimum. There are many other advantages, some of which I have already specified in the statement of the object of the invention, but it is perfectly obvious that the assembling of the parts is simple and effectual and is of such a character that it may be accomplished where the work of putting in a culvert is being carried on, which is a very material advantage over building the culvert at the factory, which is exactly what is required for the culvert to be built in accordance with the present practice. The fact that each half section is an interchangeable part is a very decided advantage as it makes the section light, easy to manufacture, without requiring special machinery, and just as easy to put together, and it makes it very convenient and simple to assemble or handle the culvert, and to lock them together so that they are inseparable.

Another advantage of this form of culvert is that the punching and riveting may be all done by machinery which is impossible in a construction where the rivets are located a long distance from the edge as all of these rivet holes and rivets are either at the end edge of a section made all in one piece, or at the side edges of a half section, where a length made in half sections.

More or less slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth, but:—

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

1. A culvert, each section of which is made of sheet metal having a flanged plate secured at one edge whereby to form a socket to receive an edge of the next section, bolts for fastening the said adjacent edges, and means for tightening said bolts whereby to draw the sections securely together.

2. A culvert, each section of which is made of corrugated sheet metal having a flanged plate secured at one edge whereby to form a socket to receive an edge of the next section, bolts for fastening the said adjacent edges, and means for tightening said bolts whereby to draw the sections securely together.

3. A culvert, the lengths of which are composed of half sections made of sheet metal and having a flanged plate secured to one edge whereby to form a socket to receive an edge of the other half section, and adjustable fastening means for securing the half sections together.

4. A culvert, the lengths of which are composed of half sections made of corrugated sheet metal and having a flanged plate secured to one edge whereby to form a socket to receive an edge of the other half section, and adjustable fastening means for securing the half sections together.

5. A culvert composed of corrugated sheet metal half sections, all of which are alike, a flanged plate secured to one side edge of each half section, hooked bolts adapted to be connected with the adjacent edges of said half sections, and nuts thereon for drawing them up to secure the half sections together.

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

JOHN S. BAYER.

Witnesses:

VERNON E. HODGES,

JULIEN C. MATTERN.