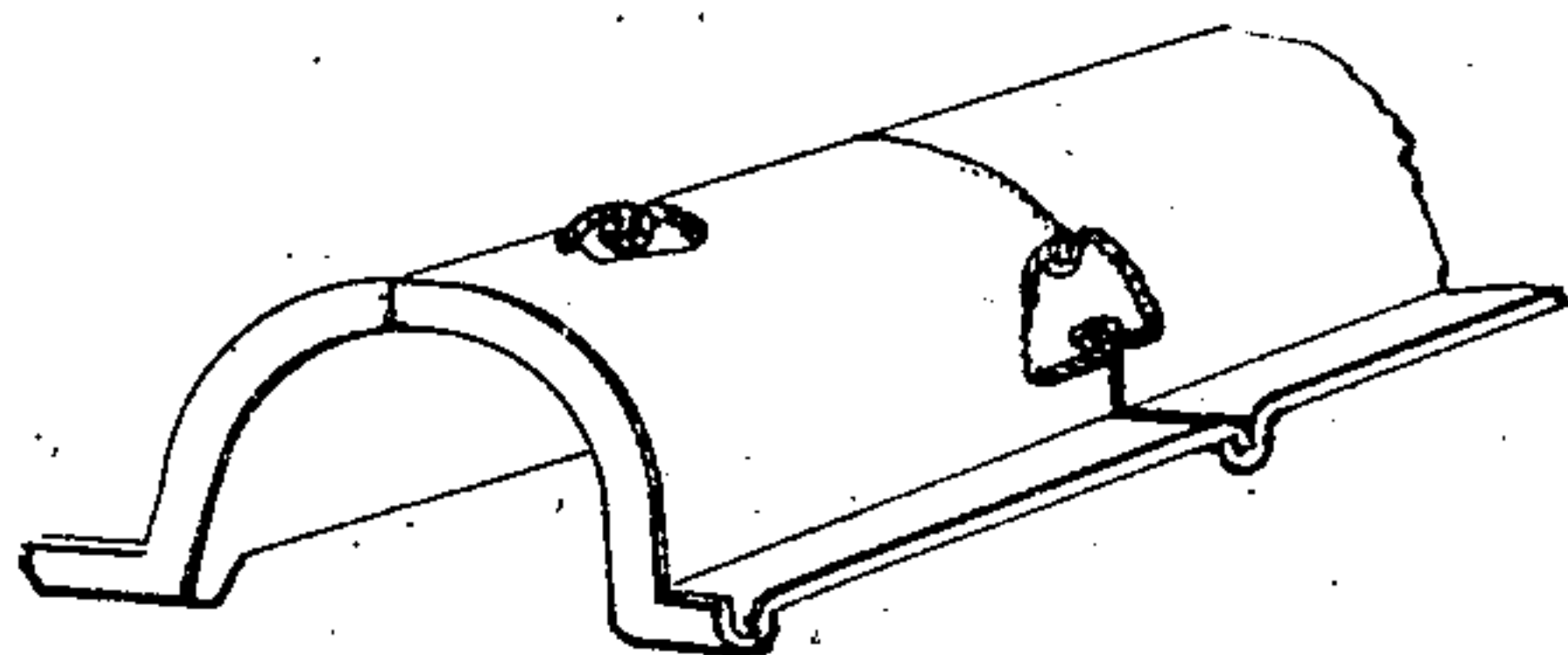
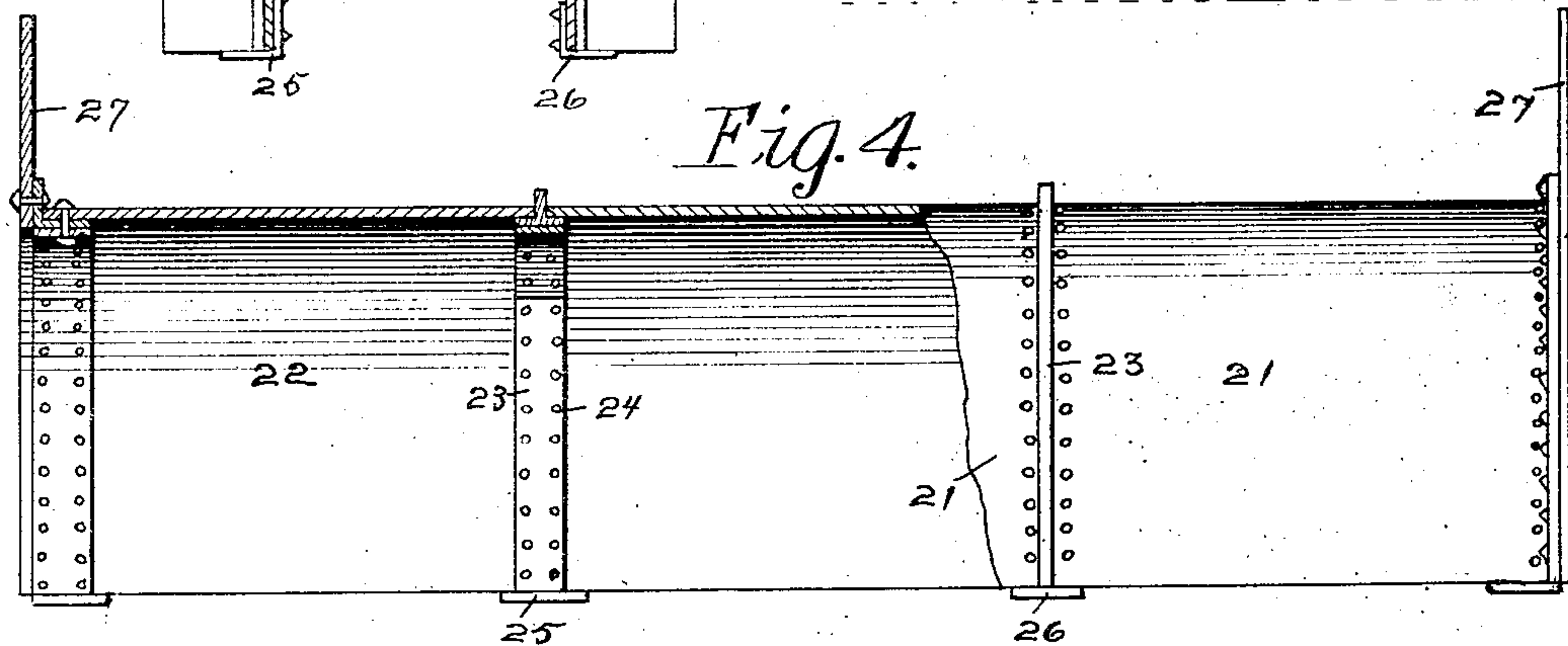
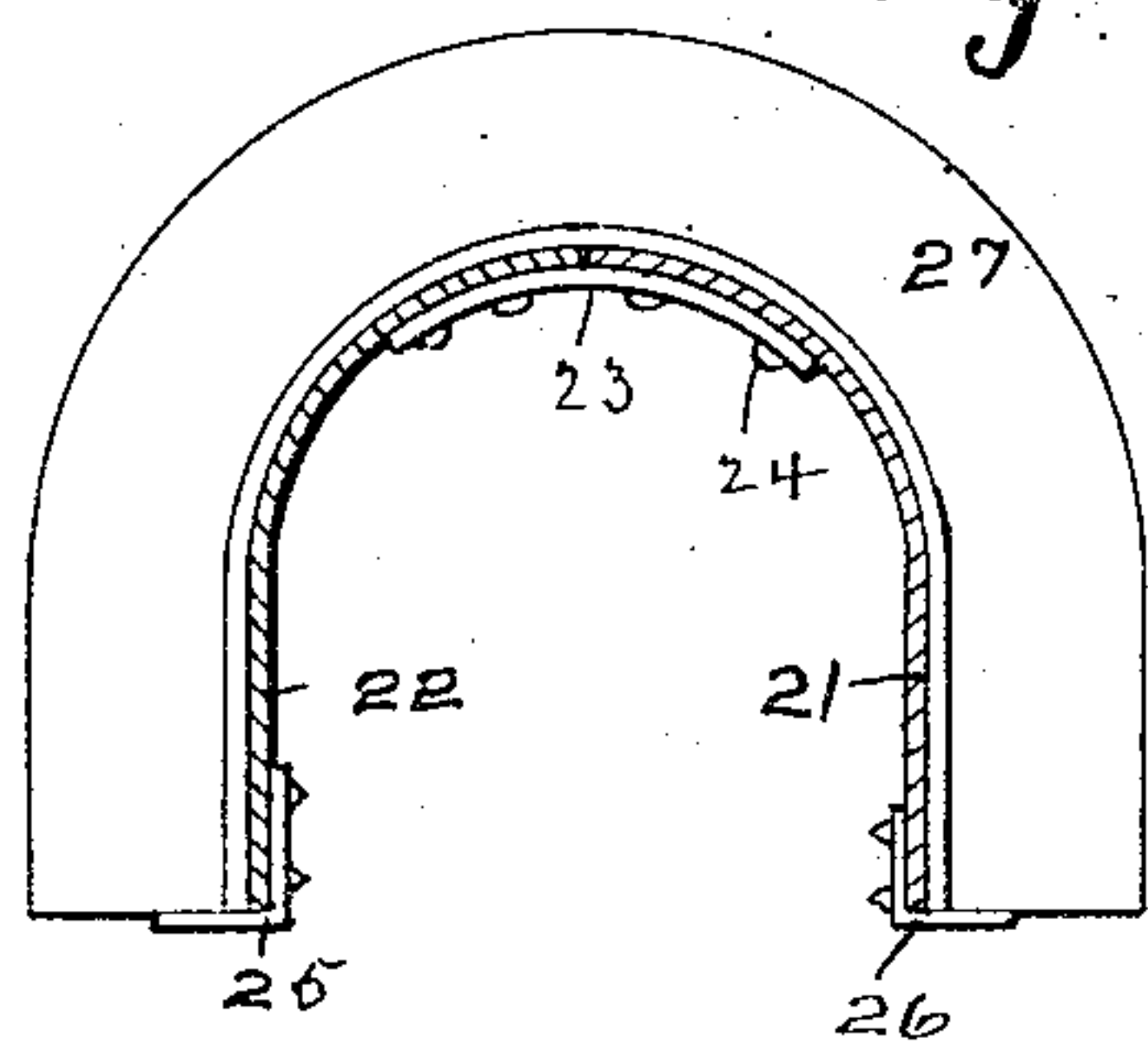
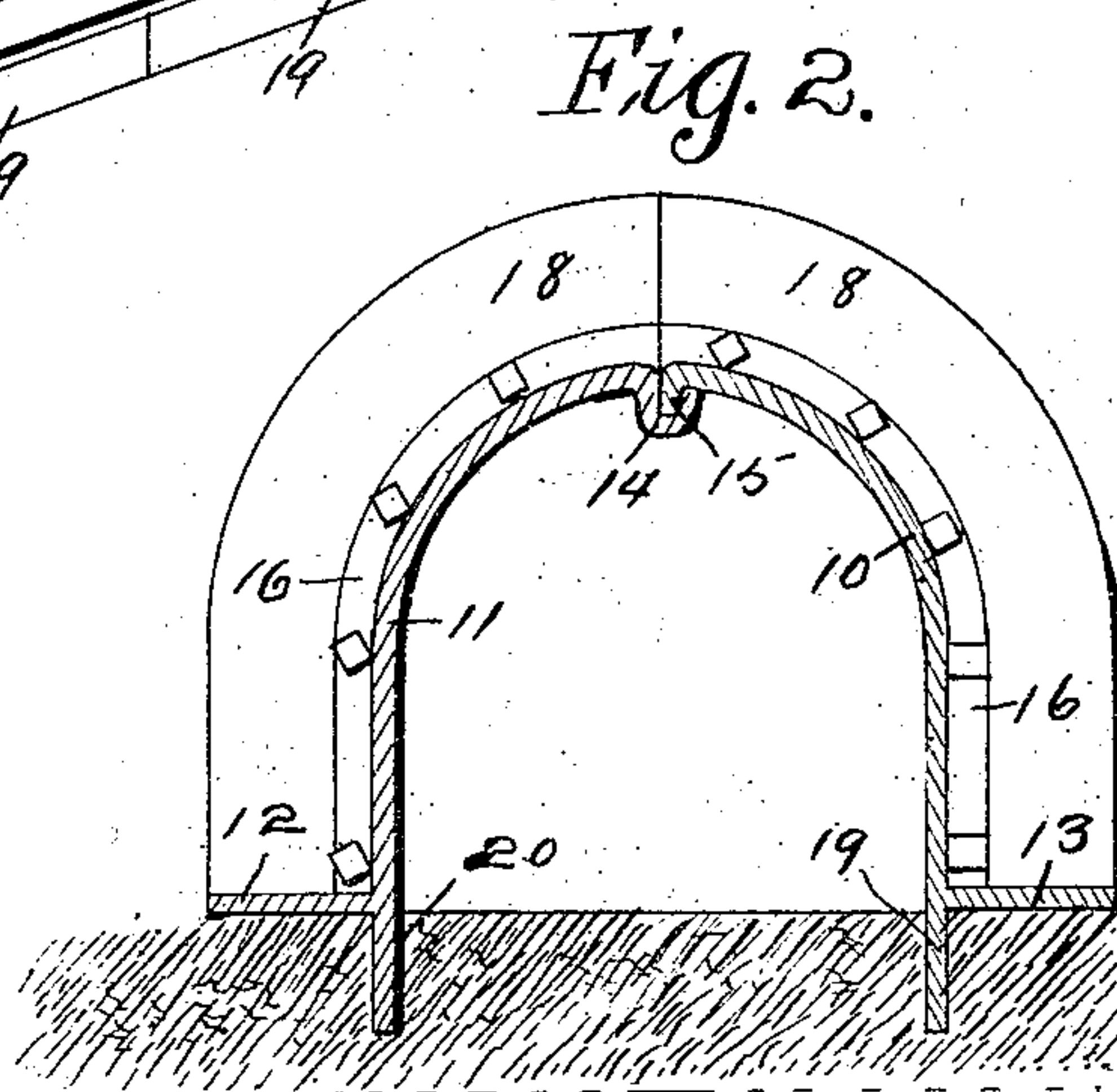
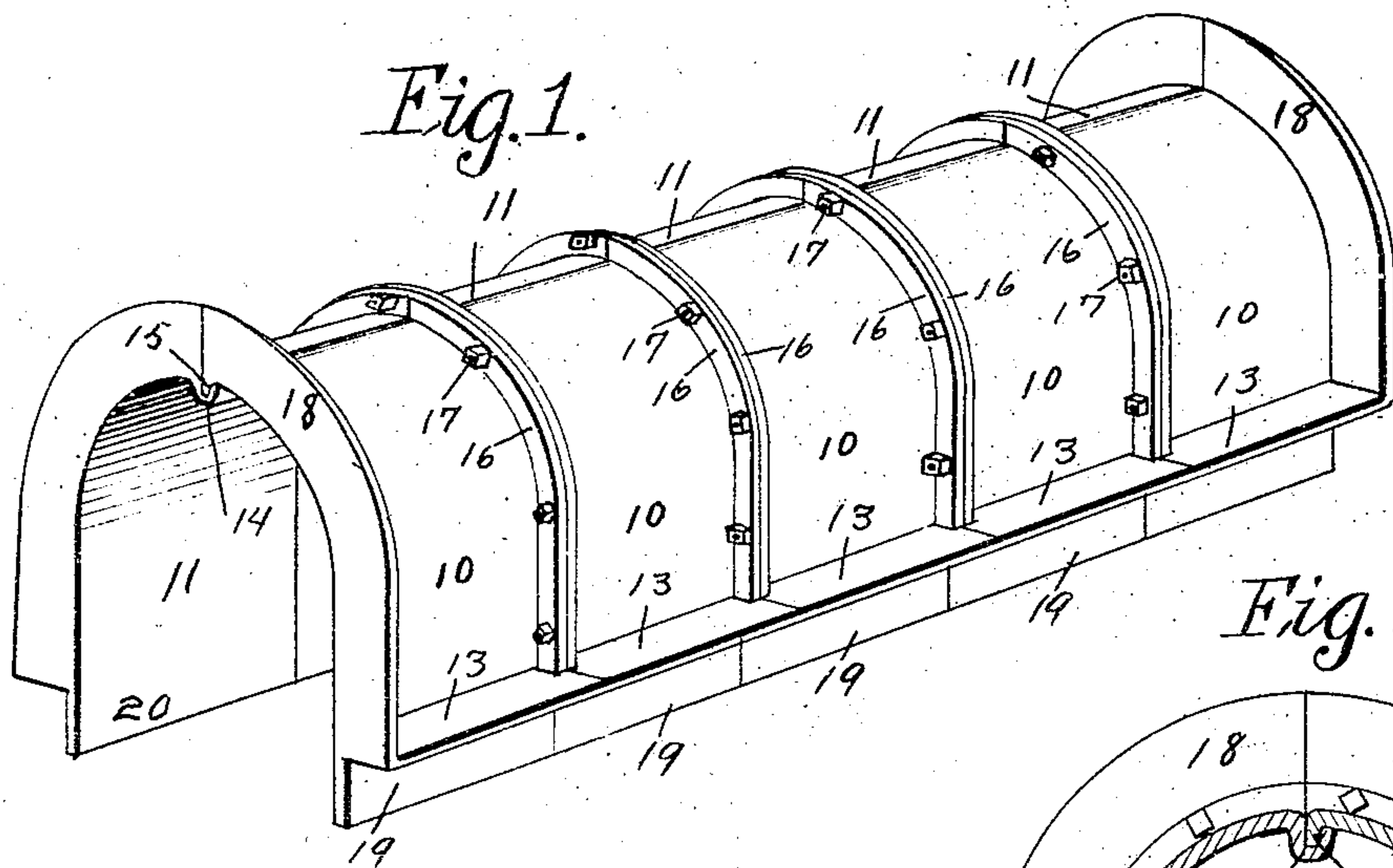


No. 832,017.

PATENTED SEPT. 25, 1906.

F. HUMMEL.
CULVERT.

APPLICATION FILED JAN. 7, 1905.



Witnesses

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UNITED STATES PATENT OFFICE.

FRANK HUMMEL, OF NEWTON, IOWA.

CULVERT.

No. 832,017.

Specification of Letters Patent.

Patented Sept. 25, 1906.

Application filed January 7, 1905. Serial No. 240,034.

To all whom it may concern:

Be it known that I, FRANK HUMMEL, a citizen of the United States, residing at Newton, in the county of Jasper and State of Iowa, have invented certain new and useful Improvements in Culverts, of which the following is a specification.

The objects of my invention are to provide a culvert of simple, durable, and inexpensive construction, the parts of which are detachable one from the other and are adapted for easy transportation and also so constructed that they will be held rigidly together when the culvert has been set in the ground by the mechanisms which I have provided.

It is also my object to provide a protector for the ends of the culvert, designed to prevent the dirt getting into the openings at the ends, and also to provide means for preventing the culverts settling at either side of it or from being forced laterally by the pressure of earth upon it.

My invention consists in certain details in the construction, arrangement, and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim, and illustrated in the accompanying drawings, in which—

Figure 1 shows in perspective the complete culvert as set up. Fig. 2 is a sectional view of the culvert. Fig. 3 is a sectional view of the modified form of the culvert; and Fig. 4 is a modified form of the culvert, part of this view being in section. Fig. 5 is a detail view of a modified form of the device, showing the same means for securing the sections together as is used for securing the parts of each section to each other.

Referring to the accompanying drawings, it will be seen that there are a series of sections, each of which is composed of the two parts 10 and 11. The part 11 has a lateral support 12 near its lower outer portion and some distance above the lower outer portion of the part 11. The part 10 also has an outwardly-projecting support 13 some distance above the lower outer portion of the part 10. In the upper portion of the part 11 there is a channel 14 provided with short extensions throughout the length of the part. On the part 10 there is a projection 15 extending throughout the entire length of the part 10 and designed to enter the channel 14 to hold the upper portion of the parts 10 and 11 in

position relative to each other. When these parts are properly positioned relative to each other, an arch is formed by them and an opening between them, which is substantially semicircular at its upper portion. Each of these parts 10 and 11 has a flaring rib 16 at one end. Two of these sections which are formed of the parts 10 and 11 are placed adjacent to each other, and the bolts 17 are passed through the ribs 16 of one section into the rib 16 of the adjacent section to secure these sections in position relative to each other. On the middle sections there is a rib 16 on each of the sections, so that the sections may be rigidly held together by the bolts passing through the ribs. At the ends of the outer sections there is a protector 18, which extends upwardly a considerable distance from the outer ends of these outer sections, so arranged that they will prevent the dirt, which is placed on top of the culvert when completed, from getting into the opening formed by the culvert. When all of these sections are attached together in the manner above indicated—that is, the parts 11 and 12 of the sections are connected by placing the projections 15 in the channels 14, and each section connected with the section adjacent to it by means of the bolts 17 passed through the adjacent ribs 16, as shown in Fig. 1—the culvert may be placed in a hole which has been dug for the purpose and the lower ends 19 and 20 of the parts 10 and 11 of the sections placed in channels dug in the ground at the bottom of the hole in such a way that the supports 12 and 13 will rest on the ground. Then the culvert will be in the position in which it is maintained after it is covered by earth and accomplishes the usual results obtained by the use of culverts.

In setting up the culvert the channels for the lower ends 19 and 20 are dug in the earth at the bottom of the hole made for the culvert, and the culvert is set up in sections, and the sections are then attached to each other and the earth thrown upon these sections. The parts of these sections are preferably made of cast metal, the parts 11 and 12 being cast in one piece and then attached together and the sections attached to each other by the bolts. However, I do not limit myself to the use of metal, as various forms of material may be used in the construction of my culvert.

In the modified form of the device, as shown in Figs. 3 and 4, the sections are made

of metal and have the two parts 21 and 22 corresponding to the parts 10 and 11, respectively, to form the various sections, and these sections are connected with each other 5 by the reinforcing-plates 23, which are attached to the adjacent ends of each of the sections by means of rivets 24, and supports 25 and 26 are provided and are attached to the lower ends of the parts 21 and 22, respectively, by means of rivets. A protector 10 27 is also attached to the outer ends of the outer sections by means of rivets. These protectors correspond to the protectors 18.

Having thus described my invention, what 15 I claim, and desire to secure by Letters Patent of the United States therefor, is—

An improved metal culvert, comprising a

number of metal arches, each formed of two parts, one of said parts having at its upper edge a groove open at its top and the other 20 part having a downwardly-projecting shoulder to enter said groove, each of said parts formed with a horizontal flange at its bottom and each of said arches formed with a grooved portion at one end open at its top 25 and including the base-flanges and also formed at its other end with a downwardly-projecting flange to enter the groove of a mating arch.

FRANK HUMMEL.

Witnesses:

JOHN G. HARRAH,
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