

No. 864,714.

PATENTED AUG. 27, 1907.

C. E. WINTRODE.
METALLIC CULVERT.
APPLICATION FILED APR. 10, 1907.

Fig. 1.

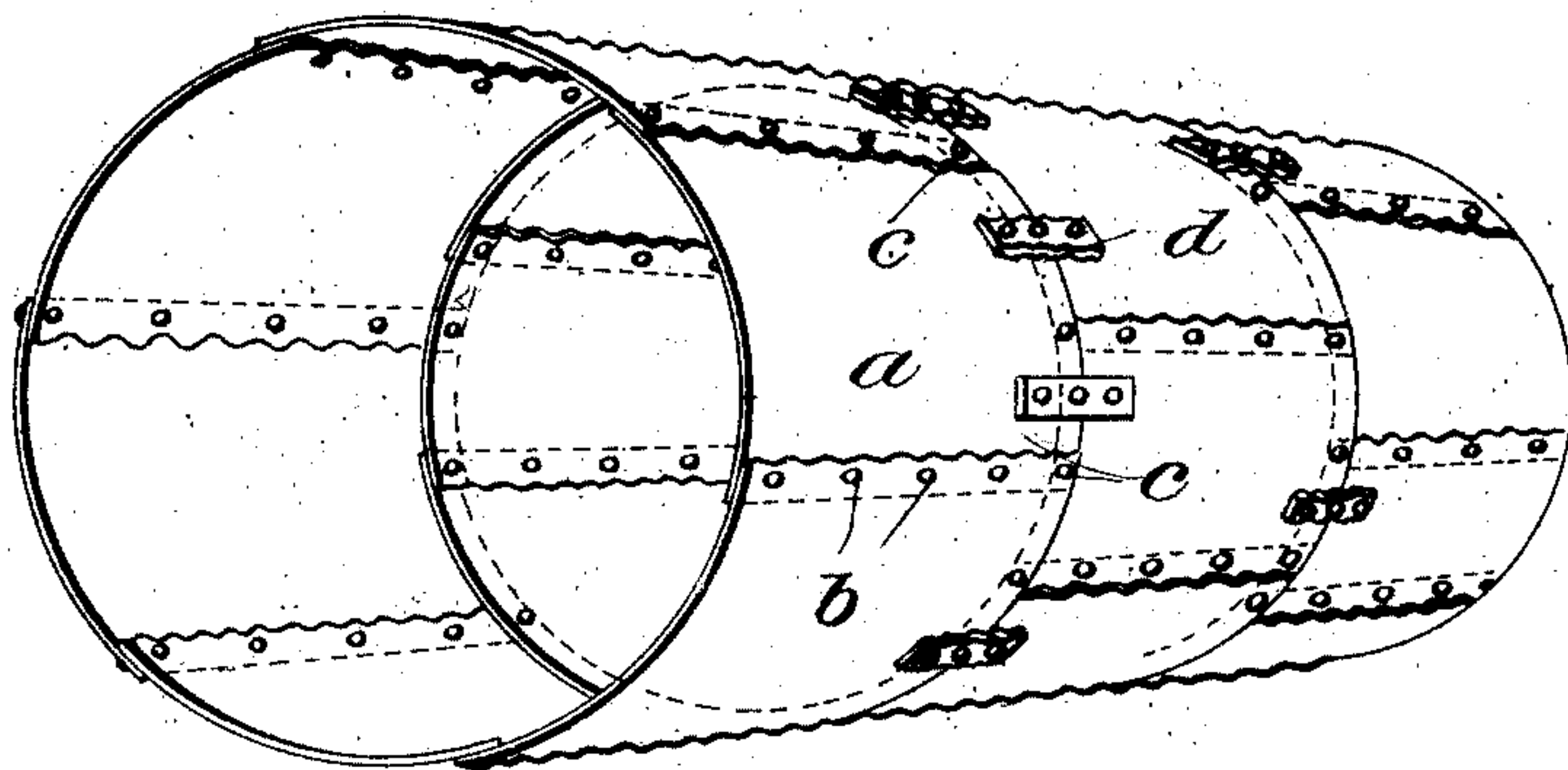


Fig. 2.

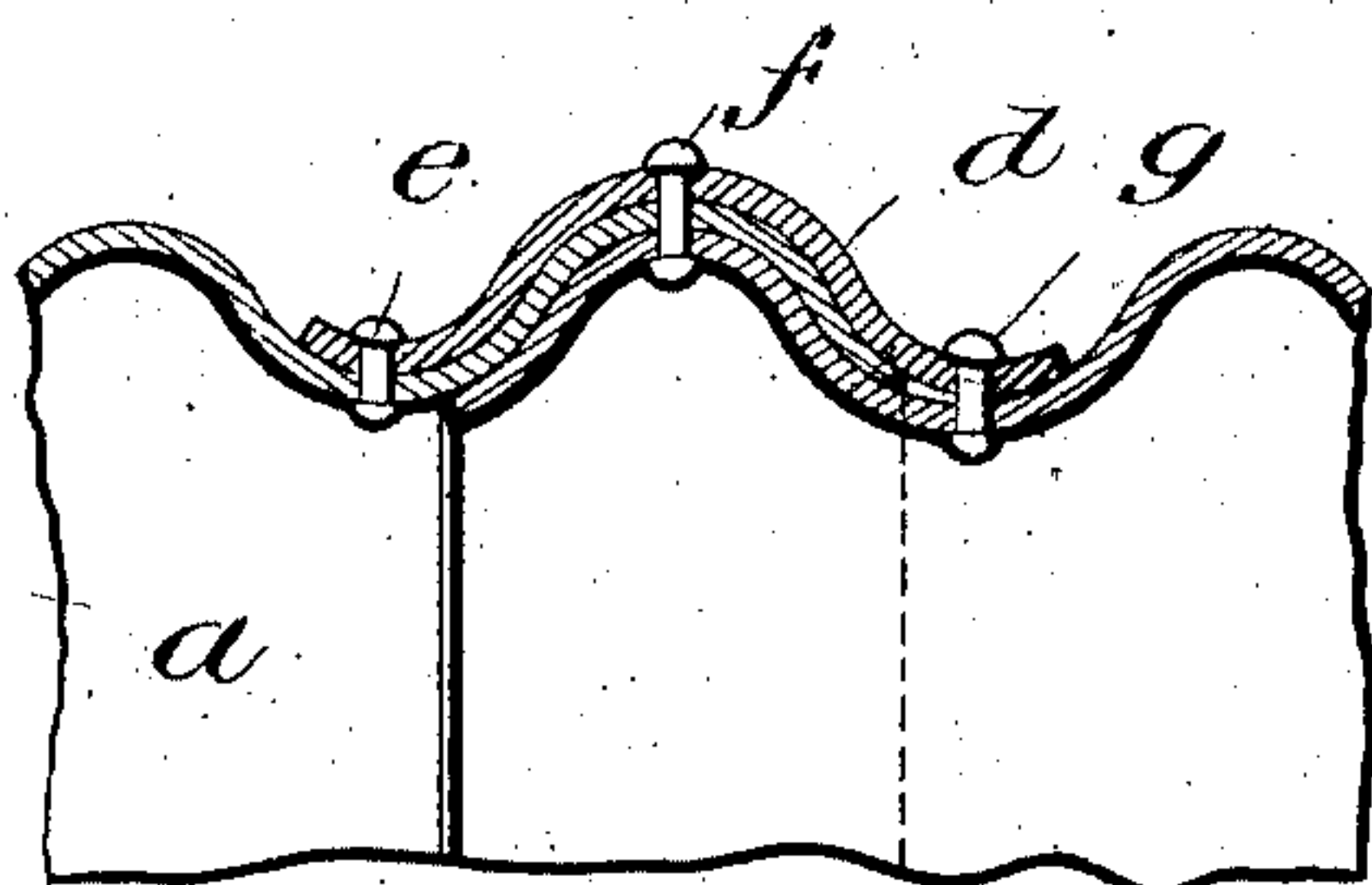


Fig. 3.

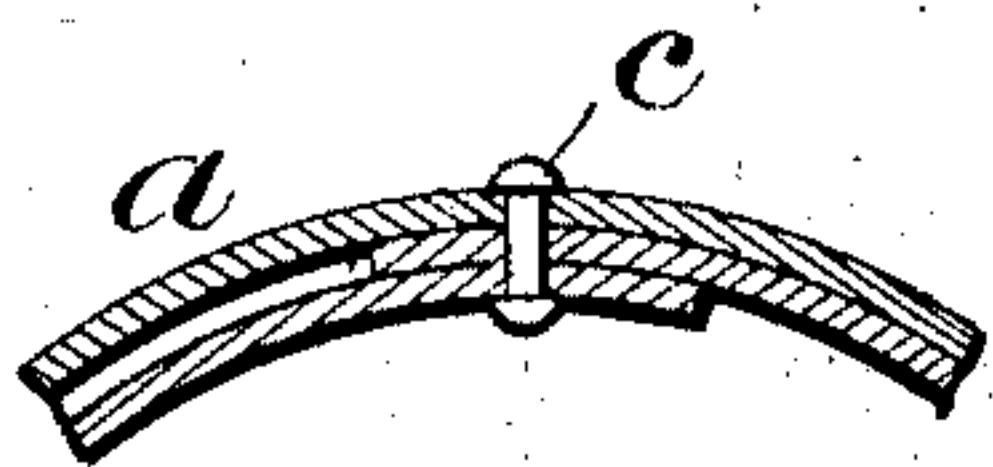


Fig. 5.

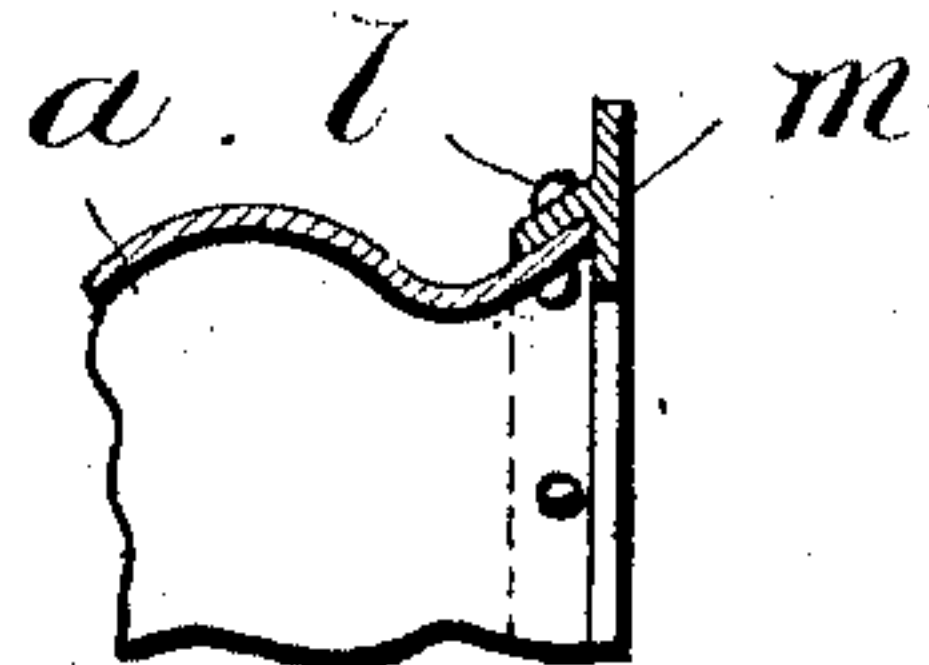
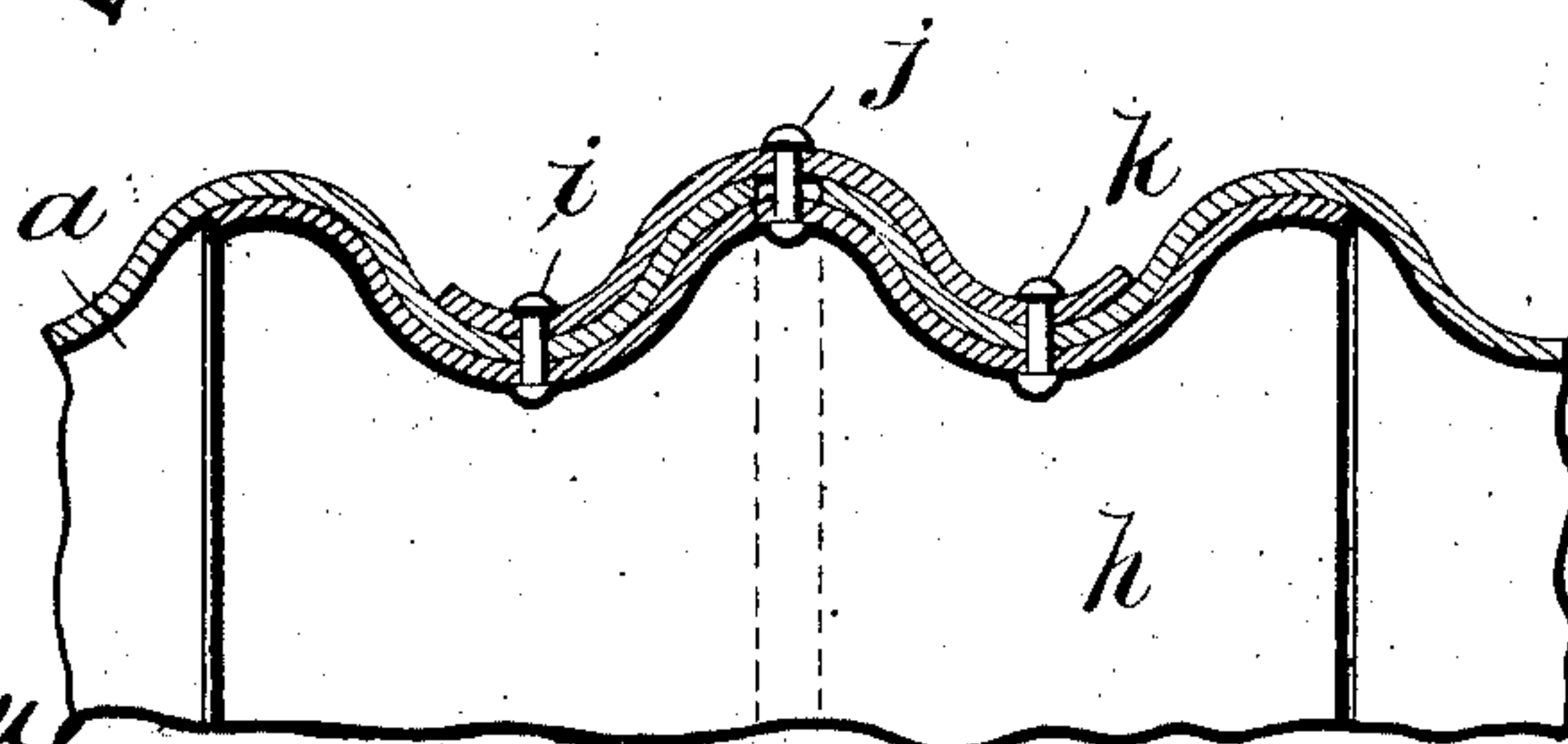


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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METALLIC CULVERT.

No. 884,714.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed April 10, 1907. Serial No. 367,429.

To all whom it may concern:

Be it known that I, CHARLES E. WINTRODE, a citizen of the United States, residing at Huntington, in the county of Huntington and State of Indiana, have invented certain new and useful Improvements in Metallic Culverts; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

10 My invention relates to improvements in metallic culverts, and the object of my invention is to form a culvert of corrugated metal plates, bent to form circular sections, the ends of adjacent sections being firmly secured together. Each of the pipe sections may be made 15 of a single corrugated plate bent so as to form a tube and having its edges riveted together, or it may be made of a number of such plates having their overlapping edges riveted together and the whole bent into the form of a tube.

20 Further objects will appear in the detailed description.

With this object in view, my invention consists in the construction and combinations of parts as hereinafter described and claimed.

25 In the accompanying drawing—Figure 1 is a perspective view of a part of a culvert built up, according to my invention, of corrugated metal plates. Fig. 2 is a longitudinal section of a portion of the same. Fig. 3 is a cross section through a part of the top of the same, taken 30 where the sections overlap. Fig. 4 is a longitudinal section of a modification, and Fig. 5 is a cross section of one of the ends of a section, showing strengthening means therefor.

35 *a* represents one of the pipe sections, made of corrugated sheet metal plates, bent into approximately circular form, the edges overlapping and riveted together by rivets *b*. One end of each section is left unriveted so that it may be slipped over the end of the adjacent section, so that one or two corrugations overlap, as 40 shown in Fig. 2. The unriveted end of a section is then drawn tightly against the end of the adjacent section by any suitable means such as a chain or rope passed around the section, the ends of said chain or rope being drawn together by a lever. Rivets *c* are then passed 45 through the overlapping section ends and the seam headed, holding the sections firmly together.

To still further strengthen the structure, I employ binding pieces or strips, through each of which three or more rivets are passed and headed, the central one 50 through the strip and both sections and the outer ones through the strip and one of the sections, these rivets being lettered *e* and *f* and *g*, Fig. 2.

In some cases I employ additional fastening means, as shown in Fig. 4. *h* represents a corrugated circular pipe, smaller than the pipe sections and adapted to fit 55 therein. The ends of two pipe sections are brought together, each overlapping the shorter and smaller pipe sections. The binding pieces *d* are then placed in position, overlapping the ends of the main pipe sections and rivets *i*, *j* and *k* headed through said binding pieces and 60 the interior pipe, some of these rivets passing through the main sections, binding the whole firmly together.

It should be noted that a complete culvert could be made up of separate pipe sections with their ends overlapped and riveted together, and that such a construction is a practical and useful one. The binding strips or 65 the inner tube described are used only as an extra precaution. At the ends of the pipe, so built up of sections, I provide strengthening pieces shown in Fig. 5; which consist of an angle iron *l* having a flat annular face *m*, 70 the angle iron being shaped to fit the corrugation at the end of a pipe section and riveted thereto.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:— 75

1. A culvert made up of sections, said sections being composed of corrugated metal plates bent into the form of a tube and having their edges riveted together, the adjacent ends of said sections overlapping each other and riveted together, substantially as described. 80

2. A metallic culvert composed of sections made of corrugated metal plates bent into tubular form and having their edges riveted together, said culvert being made up of a number of said pipe sections and said pipe sections overlapping each other at their adjacent ends, binding 85 pieces over said overlapping ends, and rivets passing through said binding pieces and said overlapping ends, substantially as described.

3. A metallic culvert made up of sections composed of corrugated metal plates bent into tubular form and having 90 their edges riveted together, said culvert being made up of a number of pipe sections, and binding pieces riveted to the end of adjacent pipe sections, substantially as described.

4. A metallic culvert made in sections, composed of corrugated plates bent into the shape of a tube and having 95 their edges riveted together, means for fastening said sections firmly together, and strengthening means for the end of said culvert, consisting of an annular angle iron riveted thereto and having one of its angles shaped to conform to the shape of the adjoining corrugated end of the end pipe section, substantially as described. 100

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

CHARLES E. WINTRODE.

Witnesses:

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