

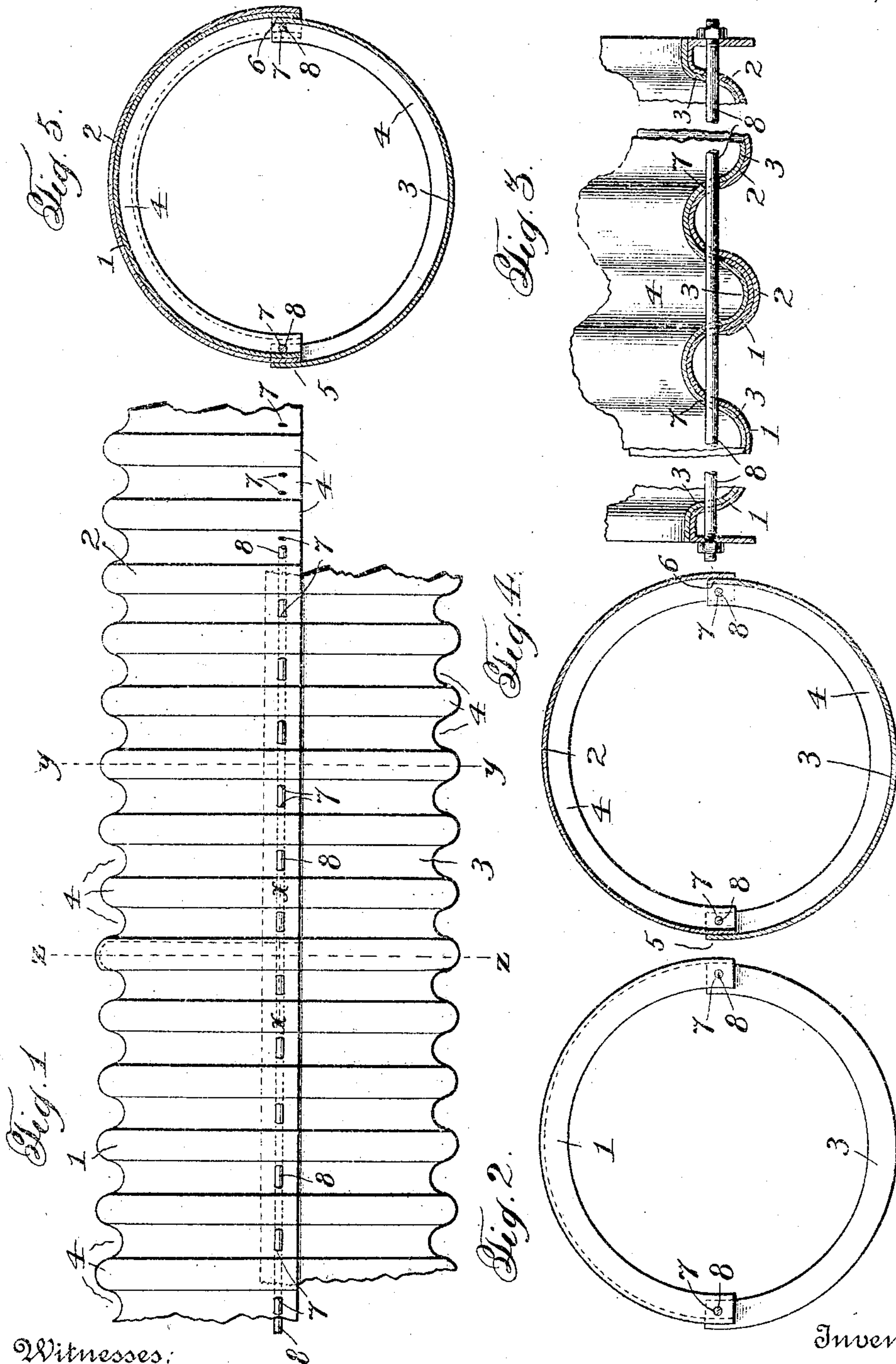
J. F. WHITE.

CULVERT.

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904,586.

Patented Nov. 24, 1908.



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UNITED STATES PATENT OFFICE.

JOHN F. WHITE, OF BLOOMINGTON, ILLINOIS.

CULVERT.

No. 904,586.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN F. WHITE, a citizen of the United States, residing at Bloomington, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Culverts, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to improvements in culverts, and has for its primary object the provision of a device of this kind which will be simple in construction, capable of being shipped in nested sections, which may be readily assembled by the user, and which will be strong and durable in use.

Heretofore, it has been attempted to produce sheet metal culverts possessing the general characteristics above referred to, but they possess needless projecting flanges or parts and consequent surplus metal, and an excessive number of securing bolts or devices, etc., thereby adding to the expense of the same and trouble encountered in their assembling, etc., which I overcome by the present improvements.

Novel characteristics of the invention embrace a culvert formed of adjoining sections having raised or depressed portions at their point or points of juncture adapted to be engaged by a rod or pin for uniting them together, and more specifically, such sections being composed of two or more longitudinally disposed members having overlapping edges, and said members being corrugated transversely or circumferentially of the culvert and provided with registering apertures or openings for the reception of a longitudinally extending rod designed to engage the apertured portions to secure the parts together, the proper insertion of the rod being enabled by reason of the alternate raised and depressed portions created by the corrugations referred to.

45 Novel details in the construction and arrangement of the several parts of my improved culvert will be apparent from the detailed description hereinafter contained when read in connection with the accompanying drawings forming part hereof wherein a convenient embodiment of the invention is illustrated.

In the drawings: Figure 1 is an elevation of a culvert made in keeping with the present invention, Fig. 2 is an end view, Fig. 3 is a longitudinal section, Fig. 4 is a section on the line $y-y$ of Fig. 1, and Fig. 5 is a section on the line $z-z$ of Fig. 1.

Referring more specifically to the drawings, wherein like reference characters designate corresponding parts in the several views, 1, 2, 3 represent the several sections of the culvert in their assembled relation, each of these sections being in general, trough-like in cross section, specifically semicircular, corrugated transversely as shown at 4, and of substantially the same length and size whereby to be arranged in break-joint or stepped relation with their adjoining edges overlapped as shown in Figs. 2 and 4, where at 5 and 6 it will be seen that the outer surface of the upper section abuts the inner surface of the lower section at one edge, while the inner surface of said upper section abuts the outer surface of the lower section at the opposite edge. Thus the normal, true, transverse formation of the sections is preserved and they are not weakened or bent, neither is the difficulty encountered, all of which would be inherent in the structure where both edges of the upper section are forced outside the adjoining edges of the lower section.

The ends of adjoining sections are secured together by simply superposing the corrugated portions of one upon the corrugated portions of the other.

To secure the sections firmly together, I provide either the depressed portions of the corrugations or the raised portions of the ribs thereof, with registering longitudinally aligned apertures 7 (in this instance shown as existing in the depressed portions of the corrugations) through which a rod 8 is passed, which rod, it is obvious, not only effectually fastens the edges of overlapped sections together, but also firmly maintains the mutual engagement of the superposed corrugated portions at the ends of the sections.

From the foregoing it will be appreciated that my culvert is of extreme simplicity, while possessing the necessary strength desired, that it may be assembled or taken apart with ease and expeditiousness; and that the sections may be nested to occupy

small space in shipping, while at the same time mutually preserving each other against substantial damage incident to accidental bending or distortion.

5 While I have herein referred to the sections of the culvert as being of substantially the same length, this is primarily for the sake of convenience in handling, shipping, etc., and may be departed from when found
10 expedient or desired. Of course where the sections are otherwise of this uniform length, one section at each end of the culvert will be of relatively short or half-length to permit said ends to be flush while enabling the stag-
15 gered or alternating arrangement of the joints.

The extremities of the sections are provided with outwardly turned flanges to strengthen the extreme ends of the culvert
20 and also to provide flat bearings for the heads of the securing rod or nuts thereon as is clear from Fig. 3.

It is also noted that although the culvert is preferably made up of trough-like sections, the same may in some instances be
25 formed of single piece tubular members or sections united along a single line by my improved connecting means.

I claim:—

30 1. A culvert composed of trough-like sections having overlapping side edges, and separate devices extending longitudinally of said sections engaging said overlapping side edges to secure the same together.

35 2. A culvert comprising trough-like sections having overlapping edges provided with apertured portions, registering longitudinally of the culvert and rods or pins engaging said apertured portions to secure the
40 sections together.

3. A culvert comprising trough-like sections having alternate transversely raised and depressed portions overlapping at their edges, similar portions of the several sections
45 being provided with apertures registering longitudinally of the culvert, and separate rods or pins engaging said apertured portions to secure the sections together.

4. A culvert comprising trough-like sections overlapping at their edges, and devices
50 engaging and detachable longitudinally of said edges for securing the same together.

5. A culvert comprising in part a section overlapping at its adjoining edges, and a rod
55 or pin engaging at separated points interfitting portions of said edges for securing them together.

6. A culvert comprising trough-like sections having their edges overlapping where-
60 by one edge of the upper section is on the outside of the lower section and its opposite edge inside said section, and rods engaging registering portions of the overlapping edges

at separated points for securing the overlapped edges together.

7. A culvert comprising transversely corrugated trough-like sections having the edges overlapped whereby one edge of the upper section is on the outside of the lower section and its opposite edge inside said section, and rods engaging registering portions of the overlapping edges at separated points for securing the overlapped edges together.

8. A culvert comprising a series of longitudinally divided sections overlapped at their ends and having relatively raised and depressed portions, in combination with means for engaging said raised and depressed portions for securing the ends together, said means also securing the edges of the divided sections together.

9. A culvert comprising adjoining sections overlapped at their edges and ends, and means engaging said overlapped edges longitudinally of the sections preventing relative rotation of the sections at said ends.

10. A culvert comprising longitudinally divided transversely corrugated sections overlapping at their ends, and means extending longitudinally of the sections engaging corrugated portions near said overlapped ends for securing the sections together and in place.

11. A culvert comprising trough-like sections arranged in break-joint relation and overlapping at their edges and ends, and single means for both securing the sections together at their edges and preventing relative rotation thereof.

12. A culvert comprising transversely corrugated trough-like sections arranged in break-joint relation and overlapping at their edges and ends, and single means for both securing the overlapping edges of the sections together and maintaining the engagement of the adjoining end portions.

13. A culvert comprising a tubular member having overlapping edges formed with complementary registering portions and a fastening device extending longitudinally of said member directly engaging said complementary registering portions of said overlapping edges to secure the same together.

14. A culvert comprising a tubular member having adjoining edges overlapped circumferentially and provided with openings adapted to register, and a removable rod or pin engaging said open portions to secure said adjoining edges together.

15. A culvert comprising a tubular member having adjoining edges formed with securing portions adapted to overlap to bring said securing portions into registration, and a rod or pin adapted to engage said securing portions longitudinally of the culvert to fasten said adjoining edges together.

16. A culvert comprising a tubular member having adjoining edges overlapped circumferentially and formed with complementary securing portions adapted to register, and a rod or pin adapted to engage said securing portions to fasten said adjoining edges together.

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

JOHN F. WHITE.

Witnesses:

B. E. KANE,

J. F. HEFFERNAN.