J. H. SCHLAFLY.

CULVERT.

APPLICATION FILED SEPT. 28, 1908.

904,651.

Patented Nov. 24, 1908.

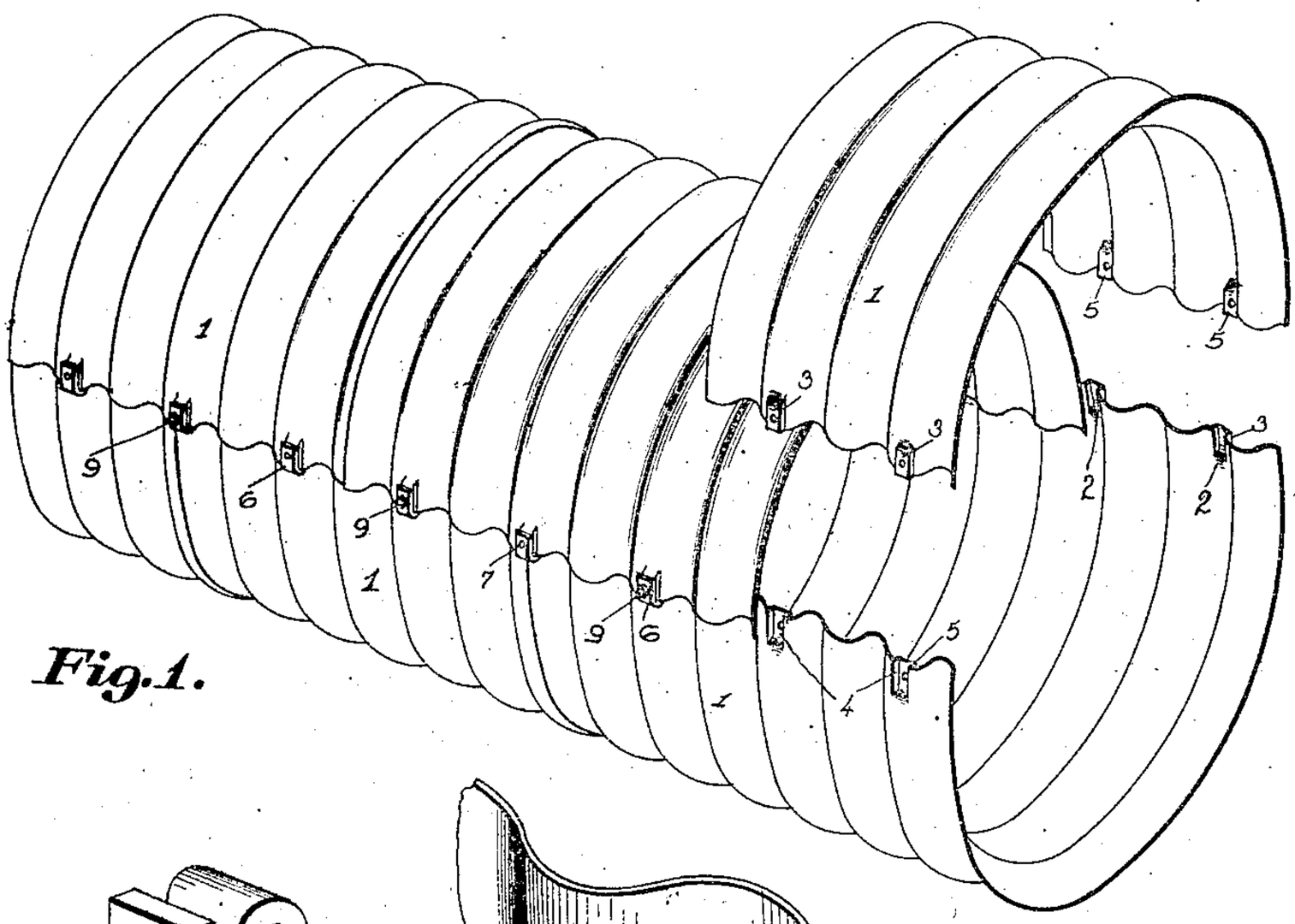

Fig. 1.

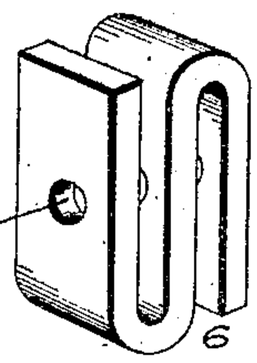

Fig. 3.

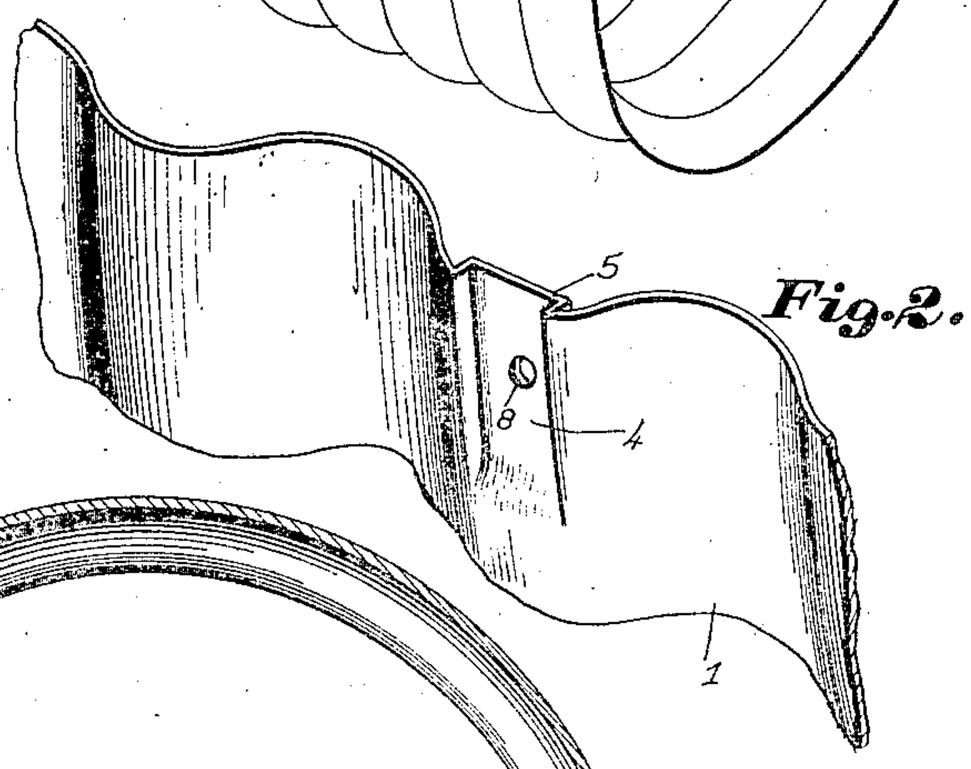

Fig. 2.

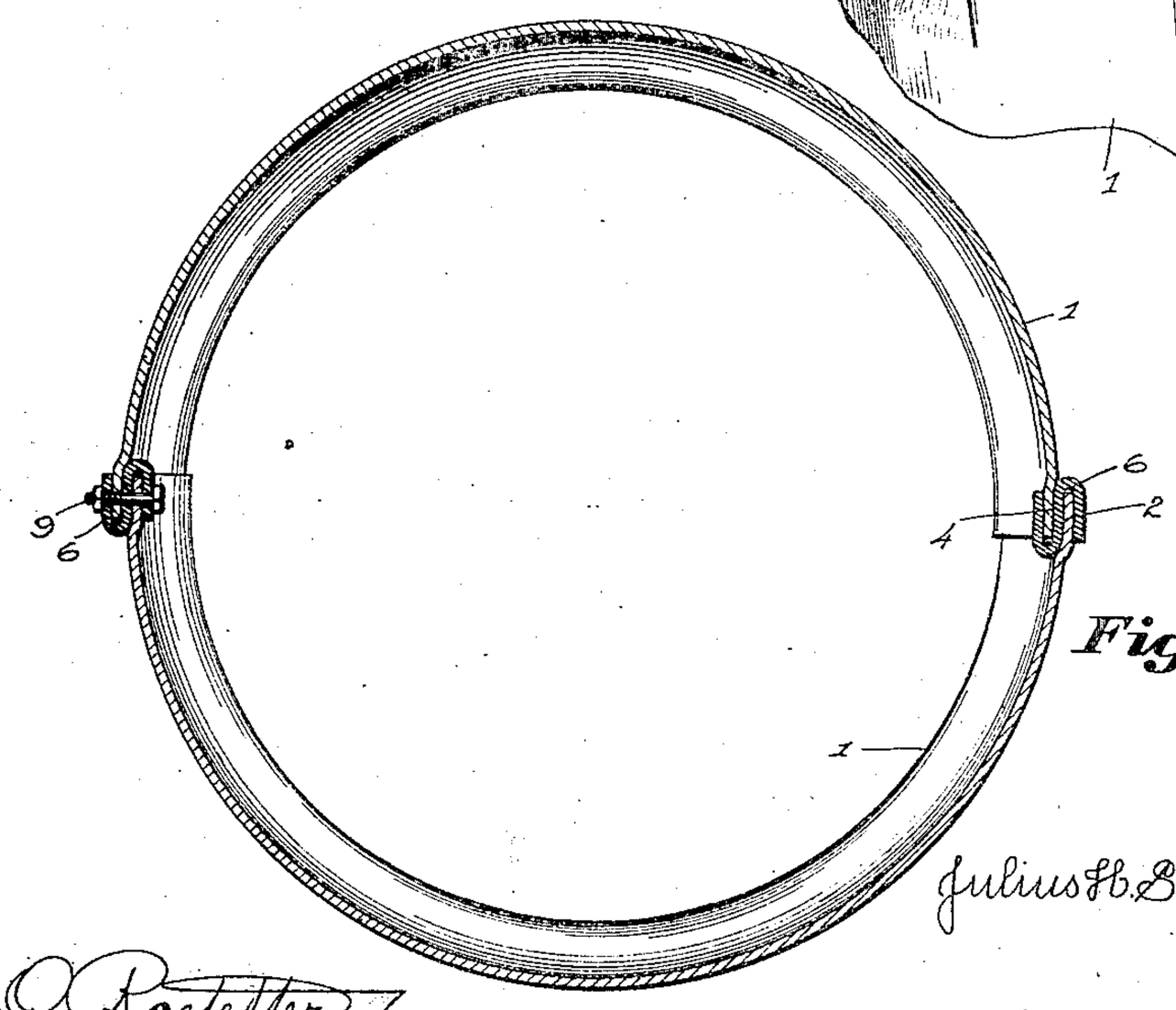

Fig. 4.

Witnesses

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CULVERT.

No. 904,651. Specification of Letters Patent. Patented Nov. 24, 1908.

Application filed September 28, 1908. Serial No. 455,001.

To all whom it may concern:

Be it known that I, JULIUS H. SCHLAFLY, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented a new and useful Culvert, of which the following is a specification.

My invention relates to improvements in the construction of nestable, sectional culverts made of sheet metal, and the object of my improvement is to provide a means for connecting the said sections together to form a complete pipe or culvert, said means being simple, cheaply constructed, strong and durable and well adapted to the purpose for which it is intended. I attain this object and other objects readily apparent to those skilled in the art by the construction illustrated in the accompanying drawing, in which—

Figure 1 illustrates a culvert composed of semi-cylindrical sections arranged as top and bottom sections to form a complete culvert, one of said sections being removed to further disclose the construction. Fig. 2 is a perspective view of a portion of the edge of one of the sections, the portion illustrated including one of the clip recesses. Fig. 3 is one of the **S** shaped clips used in connecting the sections. Fig. 4 is a transverse sectional view through upper and lower sections properly joined, said view being taken on a plane cutting two of the clips.

Throughout the several views similar numerals of reference indicate similar parts.

The complementary, semi-cylindrical sections 1 may be corrugated or plain, the corrugated form being preferred because of its greater strength. Upon one edge of each section recesses, 2, are provided, said recesses being pressed out from the inside of the section, producing the prominence 3 upon the outside of said section. On the opposite edge are provided the recesses 4 similar to the recesses 2, except that the recesses 4 are pressed in from the outside of the culvert and the prominences 5 thus produced are on the inside of the culvert. The clips 6 are formed of short strips of metal and are bent into the form of a flattened letter **S** as shown in Fig. 3. The recesses 2 and 4 are of the same width as the clip 6 and the depth of each recess is one-half the thickness of the metal used in the said clip. When the sections are to be assembled the edges of said sections should be so turned with reference to each other that the recesses 2 of one section will be adjacent the recesses 4 of the complementary section in such way as to accommodate the clips without spacing the overlapping edges of the sections from each other. This feature is well illustrated in Fig. 4 where it will be seen that the edges of the sections bear against each other along the longitudinal seam except at the recesses, where the metal of one section is pressed outwardly, while the metal of the complementary section is pressed inwardly for the purpose of accommodating the **S** clip as heretofore described.

If desired the clips 6 may be provided with the apertures 7 extending through the three portions of the clip and apertures may be provided in the recesses, at 8, to permit bolts, or their equivalents, 9, to be inserted therethrough for the purpose of clamping the parts together. It should be understood that in some instances the bolts or their equivalents may be omitted, as the clips being adapted to fit closely into the recesses would prevent any longitudinal movement with reference to the complementary sections, and if the said sections are corrugated such corrugations overlapping each other provide additional means for holding said sections against relative displacement.

In arranging the complementary sections it is well to locate the overlapping ends of longitudinally adjacent sections at a point intermediate the ends of the lower complementary sections as illustrated in Fig. 1, thus breaking the joints and producing a substantial construction. It will be noted that the culvert is composed of complementary half-sections with recesses so arranged that all sections are alike, and that a culvert may be produced from any two of such sections which may be in stock. However, if desired, the sections might be constructed with the recesses pressed inwardly on the two edges of one section and with the recesses pressed outwardly on the two edges of the complementary section. It should be also noted that a culvert might be constructed with similar means of fastening the seam where there is only one seam to the complete culvert, the same not being made in sections, and likewise more than two sections may be

employed if it is found practical or expedient to do so. With either construction the erection of a complete culvert is very easily accomplished by any person even though unskilled in mechanics.

I claim—

1. A culvert section provided with edges and recesses pressed into said edges, substantially as and for the purpose specified.

2. A culvert section provided with unflanged edges, and recesses pressed into said edges, substantially as and for the purpose specified.

3. As an article of manufacture, a culvert section constructed of sheet metal bent into cylindrical form and having its edges overlapped along the longitudinal seam, recesses located in said edges, and means located in said recesses for fastening said edges together.

4. A semi-cylindrical culvert section provided with unflanged edges, and recesses pressed into said edges.

5. A corrugated culvert section provided with edges, and recesses pressed into said edges.

6. In a culvert of the class described, a series of sections adapted to be lapped longitudinally one upon the other at their edges, and S shaped clips engaging said lapped edges, whereby said edges are fastened to each other.

7. In a culvert of the class described, a series of sections adapted to be lapped longitudinally one upon the other at their edges, S shaped clips engaging said lapped edges, and means extending through said clips and edges for the purpose of fastening said clips and edges together.

8. A sheet metal culvert having a longitudinal seam, the edges forming the seam being provided with recesses, and means located in said recesses for fastening said edges together.

9. A sheet metal culvert having a longitudinal seam, the edges forming the seam being provided with recesses, and S shaped clips located in said recesses for fastening said edges together.

10. A sheet metal culvert having a longitudinal seam, the edges forming said seam over-lapping each other, and S shaped clips engaging said edges for holding said edges against relative displacement.

11. A corrugated sheet metal culvert having a longitudinal seam, the edges forming the seam being provided with recesses, and means located in said recesses for fastening said edges together.

12. A corrugated sheet metal culvert having a longitudinal seam, the edges forming the seam being provided with recesses, and S shaped clips located in said recesses for fastening said edges together.

13. A corrugated sheet metal culvert having a longitudinal seam, the edges forming said seam over-lapping each other, and S shaped clips engaging said edges for holding said edges against relative displacement.

14. A culvert composed of sections, all of which are alike, each section having seam edges, recesses pressed inwardly upon one seam edge, and recesses pressed outwardly upon the other seam edge of each section.

15. A culvert composed of corrugated sheet metal sections, all of which are alike, each section having seam edges, recesses pressed inwardly upon one seam edge and recesses pressed outwardly upon the other seam edge of each section.

16. A sheet metal culvert having longitudinal seam edges, S shaped clips engaging said edges, apertures extending through said clips and edges, and fastening means arranged in said apertures for binding the said clips and edges together.

17. A sectional culvert, each section made of corrugated sheet metal having longitudinal seam edges, recesses pressed into said edges, and S shaped clips located in said recesses and engaging said edges, whereby to hold the said edges together.

18. The combination of two complementary culvert sections provided with recesses in their edges, the recesses in the edges of one section being adjacent the recesses in the edges of the other section, and means common to both sections, located in said adjacent recesses, for binding said sections together.

19. The combination of complementary culvert sections, the edges of one section over-lapping the edges of the other section, and S shaped clips arranged upon the said edges for the purpose of fastening said edges to each other.

20. A culvert composed of half-sections made of sheet metal and having a recess located in one half-section, a recess located in the other half-section, the edges of said half-sections over-lapping the recess in one half-section being adjacent the recess in the other half-section, and means located in said recesses for holding said half-sections together.

21. A culvert composed of half-sections of corrugated sheet metal and having a recess located in one half-section, a recess located in the other half-section, the edges of said half-sections over-lapping, the recess in one half-section being adjacent the recess in the other half-section, and means located in said recesses for holding said edges together.

22. A culvert composed of sections, all of which are alike, each section having seam edges, recesses pressed inwardly upon one seam edge and recesses pressed outwardly upon the other seam edge, said sections arranged with their seam edges over-lapping each other, the said recesses in one seam edge

being adjacent the recesses in the other seam edge, and S shaped clips located in said recesses and engaging said edges, whereby the said edges are fastened to each other.

23. A sectional sheet metal culvert composed of complementary half-sections provided with circumferential corrugations, said half-sections provided with longitudinal seam edges, recesses pressed into said edges, and S shaped clips, said half-sections assembled with the said seam edge of one half-section over-lapping the seam edge of its complementary half-section, the S shaped clips arranged in the recesses of the over-lapping edges, and the terminal corrugations of longitudinally adjacent half-sections over-lapping.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

JULIUS H. SCHLAFLY.

Witnesses:

F. A. SCHWERTNER,

HARRY G. GELTZ.