(No Model.) 2 Sheets—Sheet 1.

W. J. GORDON.

SHEET METAL ELBOW OR SHOE.

No. 455,910. Patented July 14, 1891.

Fig. 1.

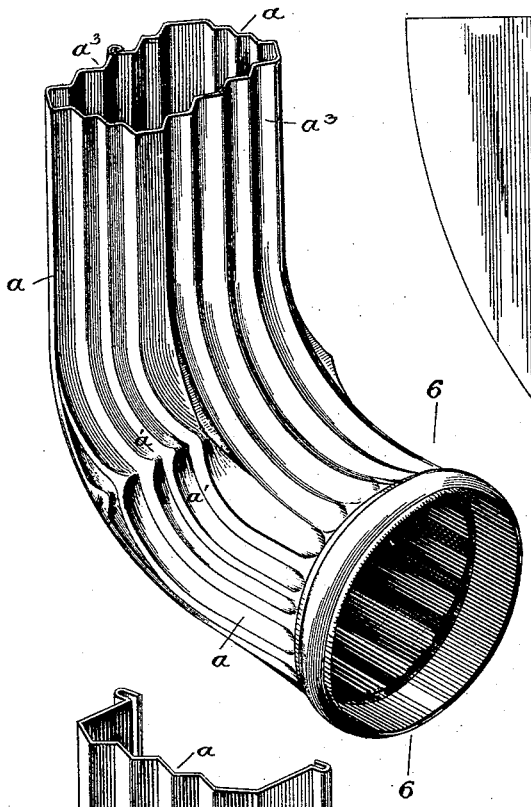


Fig. 2.

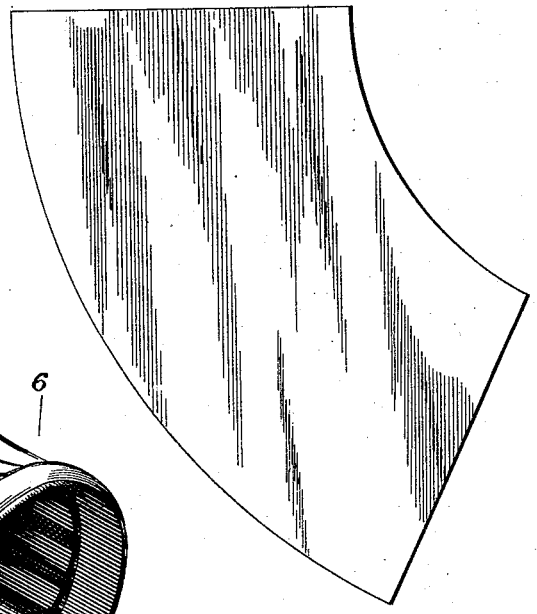


Fig. 3.

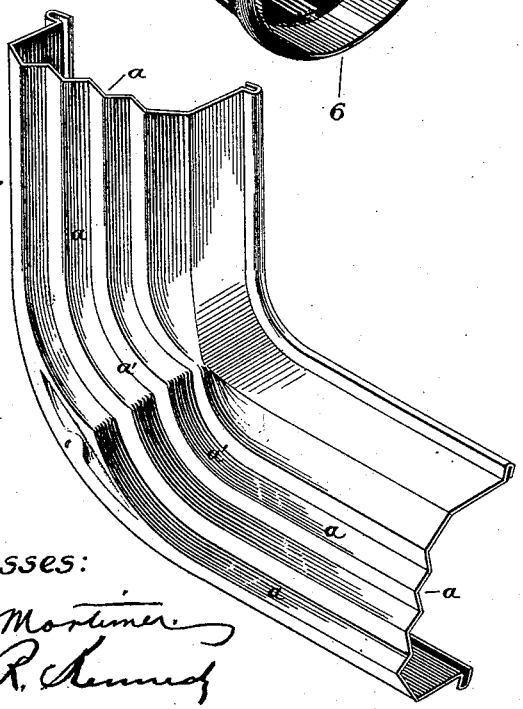
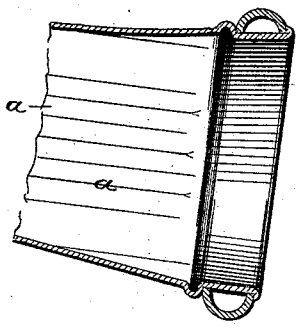


Fig. 6.
on line 6-6



Witnesses:
W. W. Mortimer
A. R. Kennedy

Inventor:
W. J. Gordon
By his Atty
Phil. T. Dodge

(No Model.) 2 Sheets—Sheet 2.

W. J. GORDON.

SHEET METAL ELBOW OR SHOE.

No. 455,910. Patented July 14, 1891.

Fig. 4.

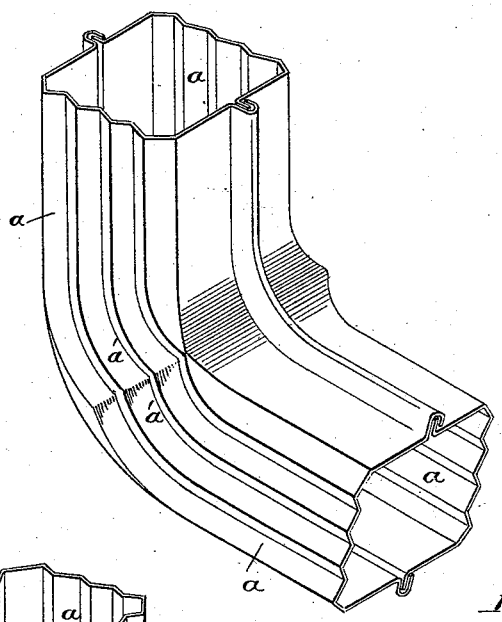


Fig. 5

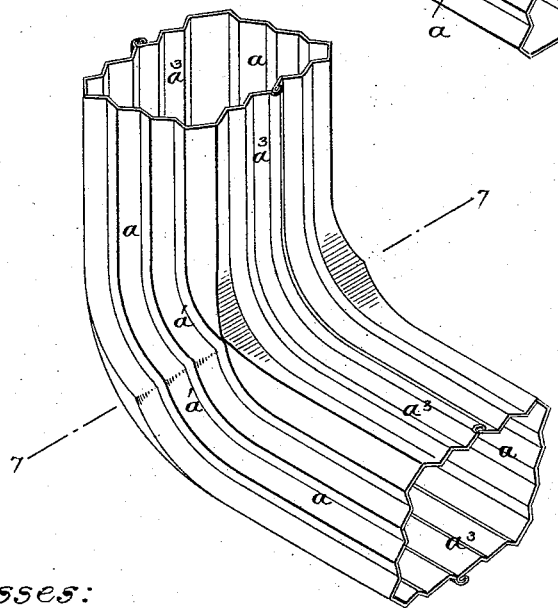
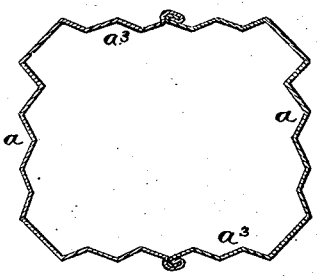


Fig. 7. on line 7-7



Witnesses:

M. M. Mortimer

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UNITED STATES PATENT OFFICE.

WILLIAM J. GORDON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO BENJAMIN P. OBDYKE, OF SAME PLACE.

SHEET-METAL ELBOW OR SHOE.

SPECIFICATION forming part of Letters Patent No. 455,910, dated July 14, 1891.

Application filed April 22, 1891. Serial No. 389,886. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. GORDON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Sheet-Metal Elbows or Shoes, of which the following is a specification.

My invention relates to an improved construction of the elbows and the terminal shoes for corrugated sheet-metal water-spouts. At the present time it is the common practice in the art to flute or corrugate water-spouts and other sheet-metal water-conductors longitudinally in order to give them a more ornamental appearance and increased rigidity and to admit of their expanding in the event of ice being formed therein without being ruptured. In Letters Patent granted to myself and E. D. Gilbert on the 19th day of March, 1889, No. 399,664, is described an elbow for corrugated pipe of this character, having in general outline a circular form in cross-section.

The present invention relates more particularly to elbows or shoes for corrugated pipe, having a rectangular outline in cross-section; and the invention consists in an improved manner of constructing and uniting the parts, whereby it is rendered extremely cheap, strong, and ornamental.

In the accompanying drawings, Figure 1 is a perspective view of my improved shoe to form the lower or discharging end of a water-spout. Fig. 2 is a view of one of the blanks from which the shoe is constructed. Fig. 3 is a view showing the form which this blank first assumes on being pressed into shape to form one-half of the shoe or elbow. Fig. 4 is a perspective view showing the manner in which the complementary parts are united to form an elbow. Fig. 5 is a perspective view of the completed elbow. Fig. 6 is a cross-section through the mouth of the shoe on line 6 6 of Fig. 1. Fig. 7 is a cross-section on the line 7 7 of Fig. 5.

In proceeding to construct an elbow or shoe on my plan I provide two sheet-metal blanks, such as shown in Fig. 2, and by means of suitable dies or otherwise press each of these blanks into the form shown in Fig. 3—that is to say, so that it is curved longitudinally and is of U form in cross-section. The dies are so formed that they produce in the flat surface of the blank, which is to form one side of the elbow, longitudinal flutes or corrugations a. These corrugations extend in straight parallel lines from the ends of the blank toward the middle of its length; but as they approach the middle they are deflected or curved toward the concave side, as plainly shown at a' in the several figures. The purpose and effect of this deflection are to shorten or take up the surplus metal on the inner or concave side of the elbow, that it may be pressed into the curved trough-like shape without rupturing the metal and without producing transverse wrinkles or seams therein. After forming two of the complementary blanks, such as shown in Fig. 3, their edges are properly trimmed and flanged outward and joined and seamed together, thus producing, as shown in Fig. 4, an elbow having in outline a rectangular cross-section and two longitudinal seams only. After thus forming the elbow I form in its inner and outer—that is to say, in its concave and convex surfaces—the longitudinal corrugations a^3, extending in parallel lines from end to end, as shown in Fig. 5, thus completing the elbow.

If the device is to be used as a shoe or mouth-piece for the delivery end of the pipe, I spread or expand the same at one end to a smooth circular form, as shown in Fig. 1, thereby causing the corrugations to gradually disappear toward the end and giving the mouth an enlarged or flaring form, so that the water and ice may be readily discharged therefrom.

In constructing my elbow or shoe I prefer to make the corrugations a' in the side faces of increasing depth as they approach the inner or concave side, as plainly shown in Fig. 7, and this in order the more effectually to take up the surplus metal and shorten the blank on the inner side.

What I claim is—

1. A pipe elbow or shoe of rectangular outline in cross-section, consisting of the two complementary sheet-metal parts seamed together longitudinally, their vertical side faces having the longitudinal corrugations curved or deflected inward, substantially shown at a'.

2. A pipe elbow or shoe of rectangular outline in cross-section, having in its inner and outer faces the continuous corrugations a^3 and in its side faces the deflected or interrupted corrugations a', substantially as and for the purpose described.

3. A pipe elbow or shoe of rectangular outline in cross-section, having in its vertical side faces the longitudinal curved or deflected corrugations a' of increasing depth toward the inner side of the elbow.

4. The corrugated sheet-metal pipe shoe or mouth-piece having at its upper end a rectangular outline in cross-section and at the lower end a circular flaring form.

In testimony whereof I hereunto set my hand, this 20th day of March, 1891, in the presence of two attesting witnesses.

WILLIAM J. GORDON.

Witnesses:
GEO. W. GARRETT,
WM. J. HILL.