(No Model.)

T. C. BELDING.

SHEET METAL PIPE.

No. 470,739. Patented Mar. 15, 1892.

Fig. 4.

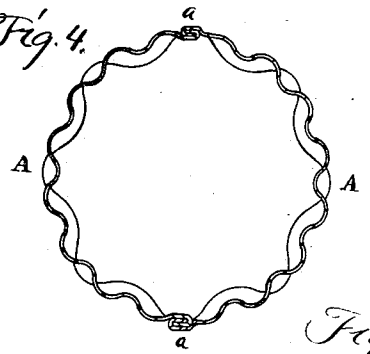


Fig. 1.

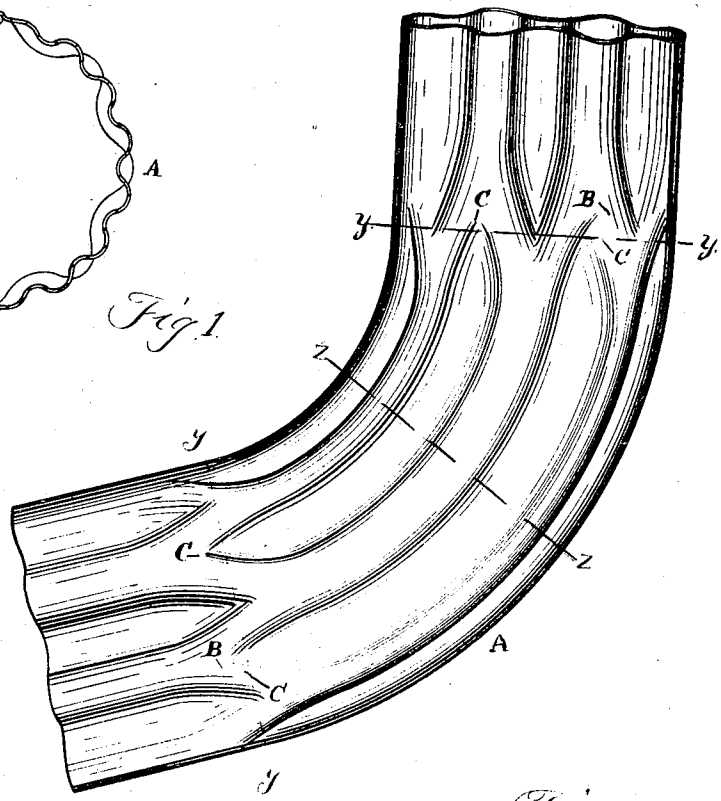


Fig. 3.

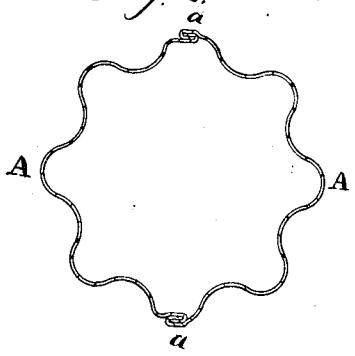
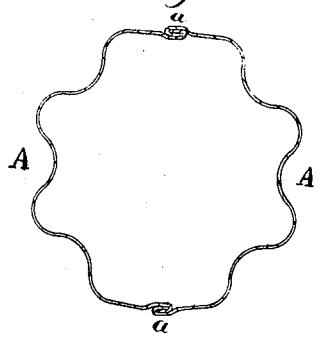


Fig. 2.



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UNITED STATES PATENT OFFICE.

THOMAS C. BELDING, OF CANTON, OHIO, ASSIGNOR TO THE CANTON STEEL ROOFING COMPANY, OF SAME PLACE.

SHEET-METAL PIPE.

SPECIFICATION forming part of Letters Patent No. 470,739, dated March 15, 1892.

Application filed September 7, 1891. Serial No. 404,972. (No model.)

To all whom it may concern:

Be it known that I, THOMAS C. BELDING, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Sheet-Metal Pipe-Elbows; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side view showing a completed elbow. Fig. 2 is an end view. Fig. 3 is a transverse section through line Z Z, Fig. 1. Fig. 4 is a transverse section through lines *y y*, Fig. 1.

The present invention has relation to sheet-metal pipe-elbows; and it consists in the novel construction and arrangement hereinafter described, and particularly pointed out in the claim.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, A represents the sections or sides from which the elbow proper is formed and may be of any desired size, reference being had to the size of the elbow desired to construct. The sections A are cut or formed in the ordinary manner, and are given the desired configuration by means of dies.

For the purpose of constructing an elbow capable of expansion the sides or sections of which the elbow is composed are corrugated, and for the purpose of preventing the sides or sections from becoming buckled or wrinkled when being formed by the dies and at same time add great strength to the elbow the corrugations are alternated or divided, as shown at lines *y y*, Fig. 1. The alternating of the corrugations is also highly ornamental and adds architectural beauty and effect when the elbows are placed into position on buildings.

In Fig. 1 a finished elbow is illustrated, showing two alternations of the corrugations; but it will be understood that a greater or less number of alternations of the corrugations may be provided, as desired, without departing from the nature of my invention.

For the purpose of providing perfect drainage of water or other substance from the elbow the concaved portions of the corrugations on the inner surface of the elbow are made continuous throughout its entire length, and at the points where the corrugations alternate and the concaved portions divide one branch of the concaved portions is inclined toward the lower part of the elbow proper, as illustrated at B, Fig. 1, and at which points the inner convexed portions or ridges of the corrugations terminate, as indicated at C, Fig. 1. At the points C the outer convexed portions of the corrugations divide and the concaved portions end. At the point or longitudinal space where the corrugations alternate there will be double the number of corrugations and the corrugations will be but one-half the size of the corrugations of the other part of the sections from which the elbow is composed, by which arrangement the elbow proper will have a uniform expanding capacity throughout its entire length. These sections A are united by the ordinary folded seams, as shown in the drawings at *a*.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

An expansible sheet-metal-pipe elbow provided on its inner side with continuous and branching grooves or concaved corrugations alternating with ridges or convexed corrugations and having on its outer side corresponding continuous and branching convexed corrugations or ridges alternating with concaved corrugations or grooves, the grooves or concaved portions on one surface being terminated where the ridges or convexed portions are branched and the ridges or convexed portions on the other surface being terminated where the grooves or concaved portions are branched, substantially as and for the purposes described.

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

THOMAS C. BELDING.

Witnesses:
F. W. BOND,
E. A. C. SMITH.