

AUSTIN & OBDYKE.

Stove Pipe.

No. 113,614.

Patented Apr. 11, 1871.

Fig 1.

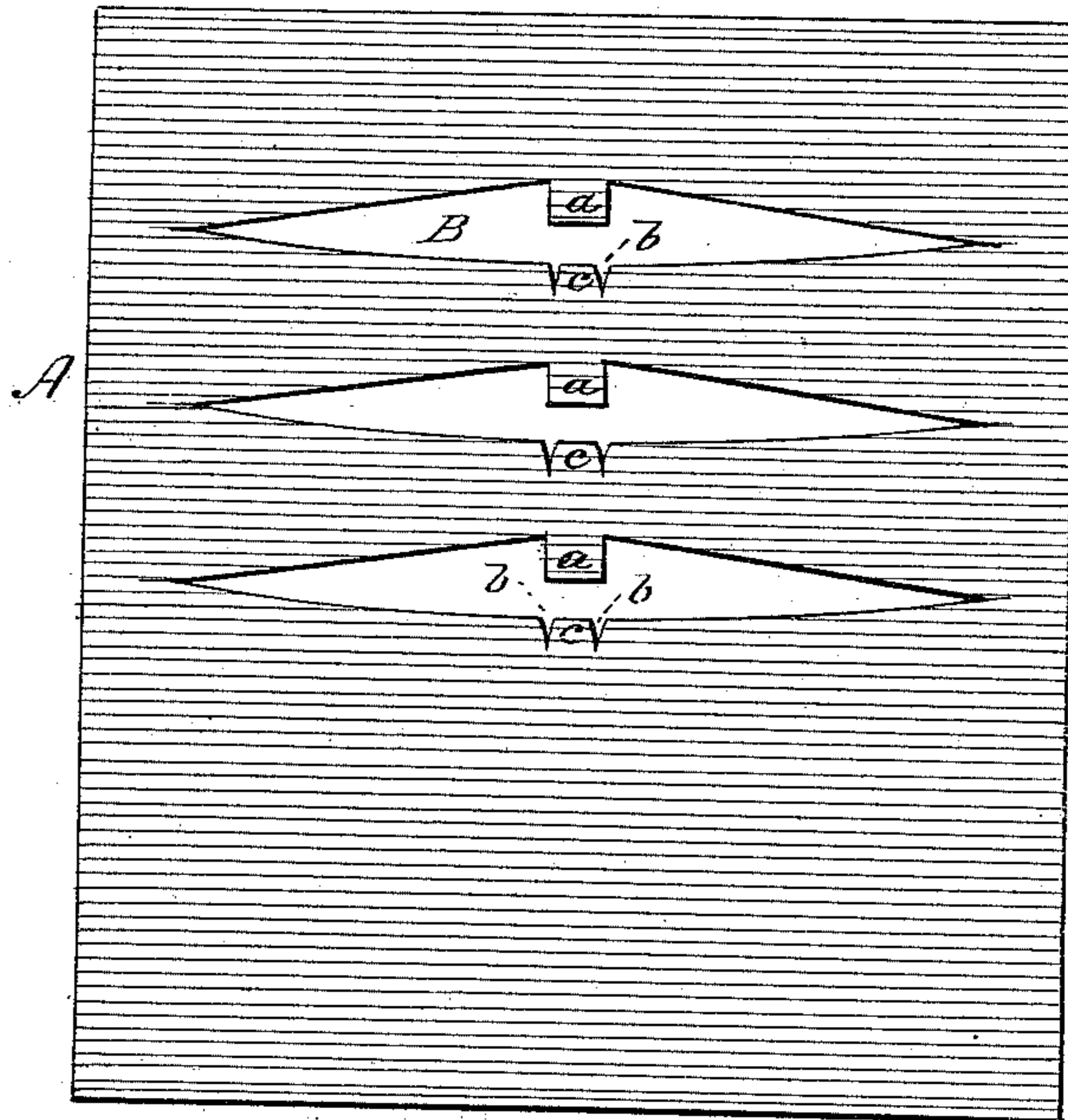


Fig 2.

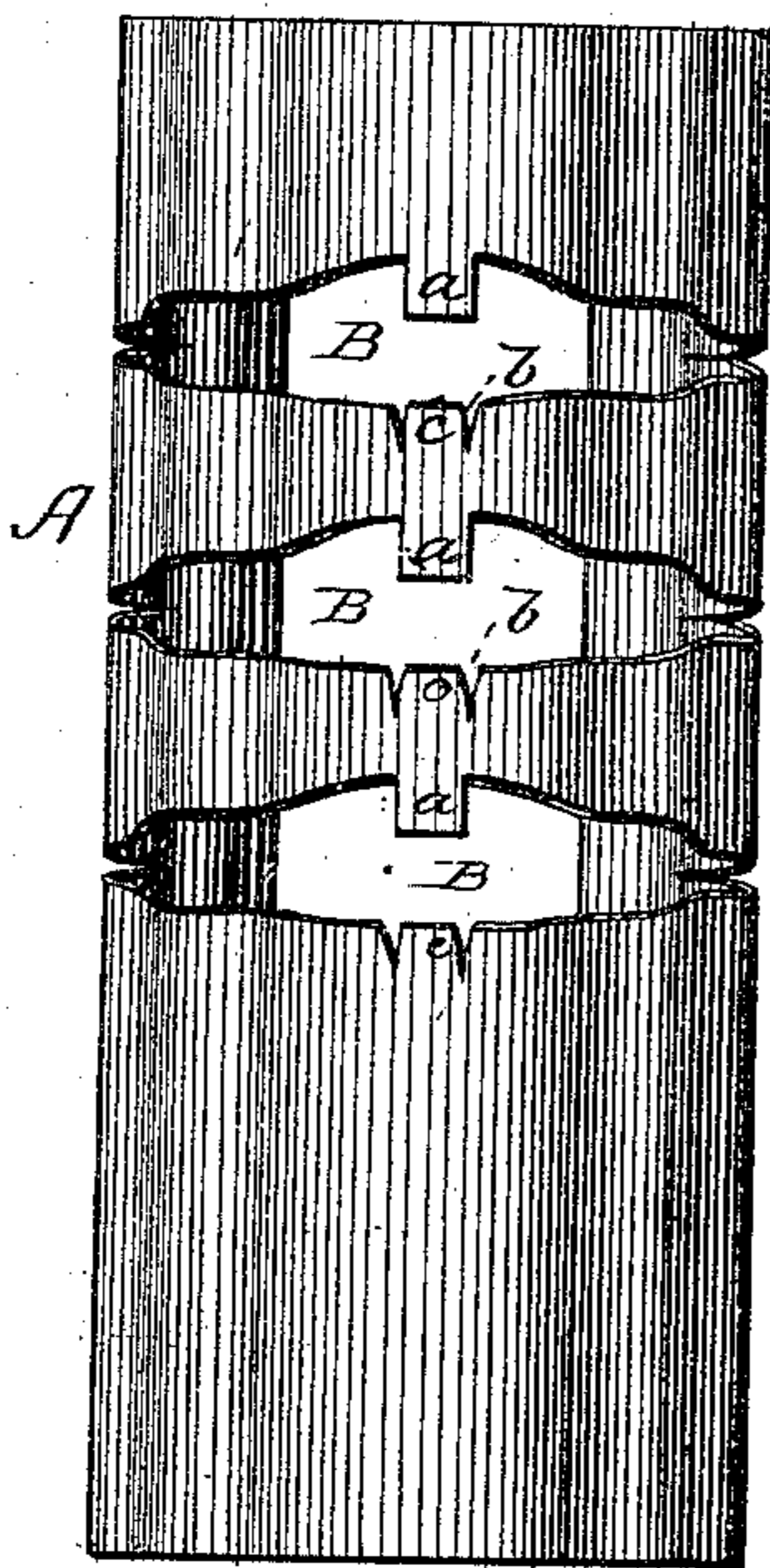


Fig 3.

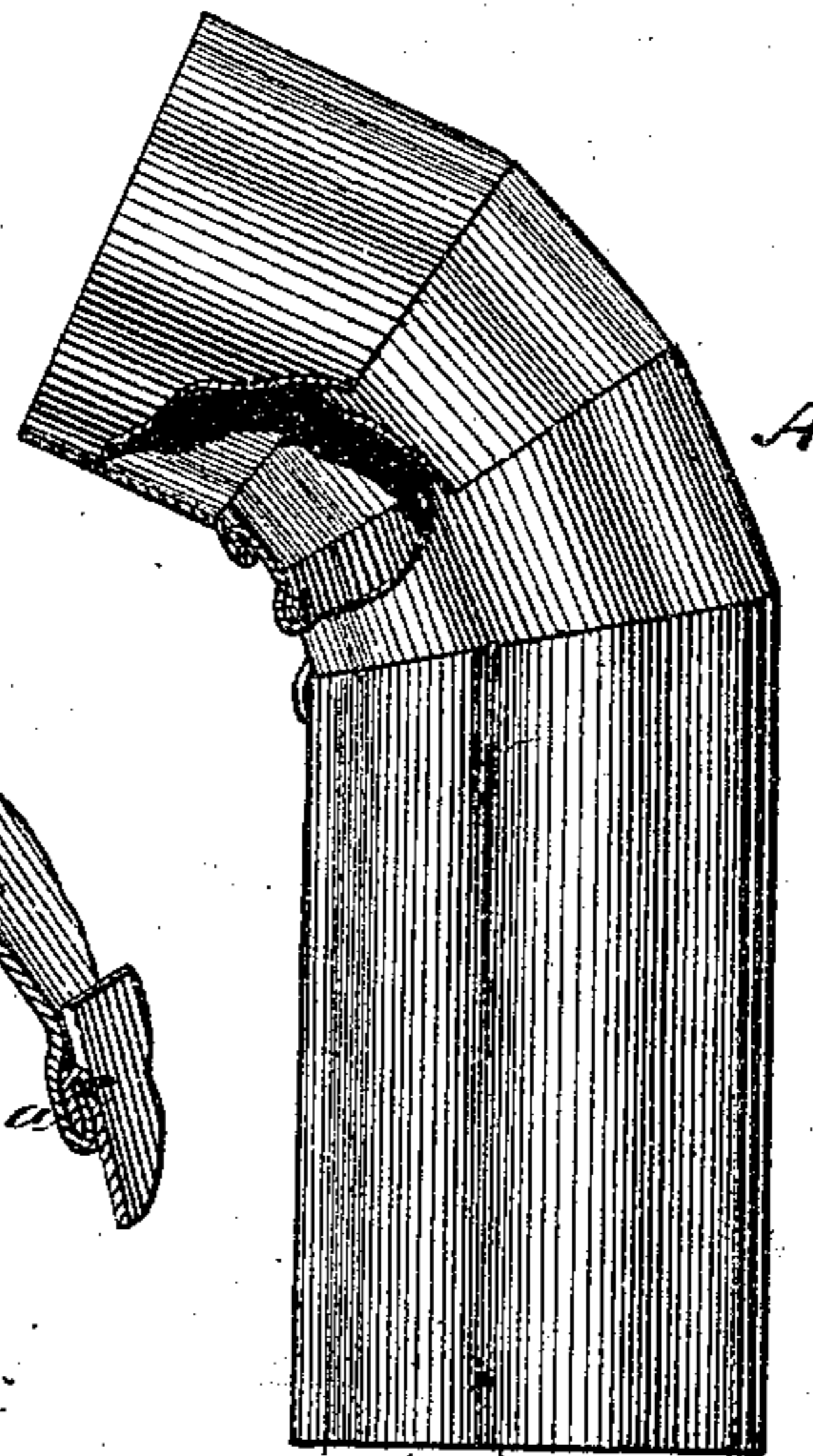


Fig 4.

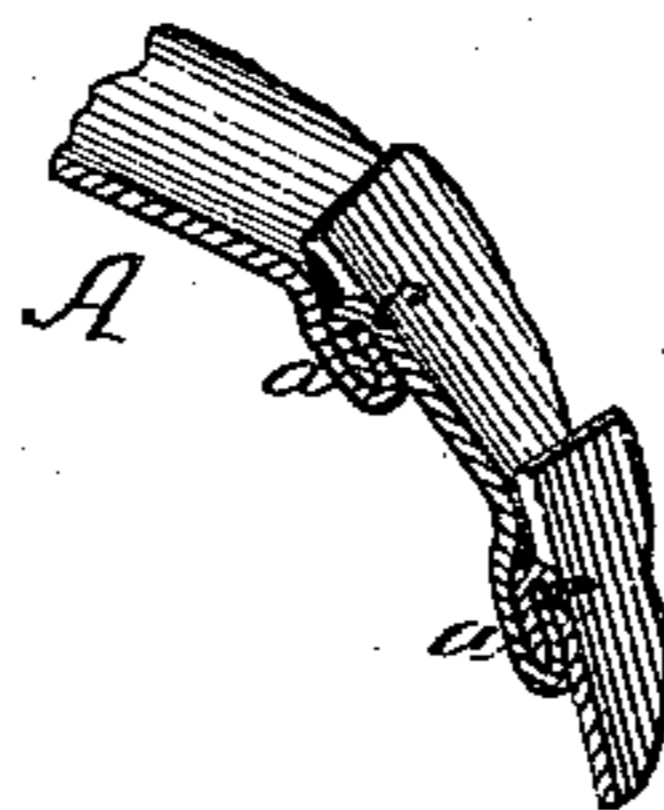


Fig 5.



Witnesses.

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# United States Patent Office.

WILLIAM AUSTIN AND WILLIAM OBDYKE, OF PHILADELPHIA,  
PENNSYLVANIA.

Letters Patent No. 113,614, dated April 11, 1871.

## IMPROVEMENT IN PIPE-ELBOWS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that we, WILLIAM AUSTIN and WILLIAM OBDYKE, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Elbows for Sheet-Metal Water-Pipe, of which the following is a specification, reference being had to the accompanying drawing.

Our invention relates to an improved sheet-metal elbow or shoe for water-pipe or spouting; and

The invention consists in the novel manner of constructing the elbow in a curved form of a single sheet of metal cut and bent into shape, as hereinafter described.

The elbow is intended more especially for corrugated pipe, and in the drawing is shown corrugated for that purpose; but it may be made without the corrugations for use on plain or smooth pipe.

Figure 1 is a view of the sheet-metal plate or blank, with the openings through it, before being bent into form;

Figure 2 is a view of the blank corrugated and partially rolled up;

Figure 3 is a view of the elbow complete; and

Figures 4 and 5 are sectional views of the joints or seams.

In constructing our elbow we first take a rectangular sheet of metal, A, as shown in fig. 1, of the proper size, and cut or punch two or more diamond-shaped openings, B, crosswise through it, as shown. These openings we make of such length as to extend nearly the full width of the sheet, and arrange them side by side, as shown.

At one side of each of these openings B we leave an inwardly-projecting lip, *a*, and on the opposite side of the opening we cut two small slits, *b*, so as to leave a tongue, *c*, between them. The blank thus prepared we corrugate lengthwise, and also turn up a lip along its two sides, and then fold it up into the form of a pipe, as shown in fig. 2, and lock or seam the side lips together in the usual manner, as shown in fig. 5. We then bend the lips *a* inward in the form of a hook, and the lips *c* outward in like manner. We next bend the pipe until the two edges of each opening B come in contact with each other and lock the lips *a c* of each

opening together, as shown in figs. 3 and 4. The pipe is thus formed with a succession of short bends, which together form a curved elbow, as shown in fig. 3. We then solder the joints or seams where the edges meet, so as to render them water-tight, and the elbow is complete.

The lips *a c*, by being hooked together, serve to strengthen the elbow and prevent the joints from opening. Instead of being hooked together a rivet may be passed through them, which will answer the same purpose.

The elbow thus constructed is cheap, strong, and ornamental, and will, owing to its gradual curve, expand like the straight portion of the pipe without bursting.

Heretofore it has been usual to make the elbow by beveling off the ends of two pieces of pipe and soldering them together; but, owing to the abrupt bend thus formed, the elbow was liable to burst when ice was formed inside; and besides, the elbow presented a very clumsy and unpleasing appearance. By our present method of construction these difficulties are all overcome.

There may be any desired number of the openings B to produce the required bend in the elbow, the bend depending upon the number and the width of the openings. The opening should be quite narrow in width, as any increase in the width produces a corresponding increase in the sharpness of the bend.

The elbow for plain or smooth pipe we construct in the same manner, except that we do not corrugate the blank.

Having thus described our invention,

What we claim is—

An elbow, constructed from a sheet of metal having a series of pieces cut therefrom to impart to the elbow when finished the required bend, substantially as described.

WM. AUSTIN.  
WM. OBDYKE.

Witnesses:

BENJAMIN P. OBDYKE,  
GEORGE HICKS.