(No Model.) 2 Sheets—Sheet 1.

P. KEARNS.

ELBOW FOR PIPES.

No. 262,049. Patented Aug. 1, 1882.

Fig. 1.

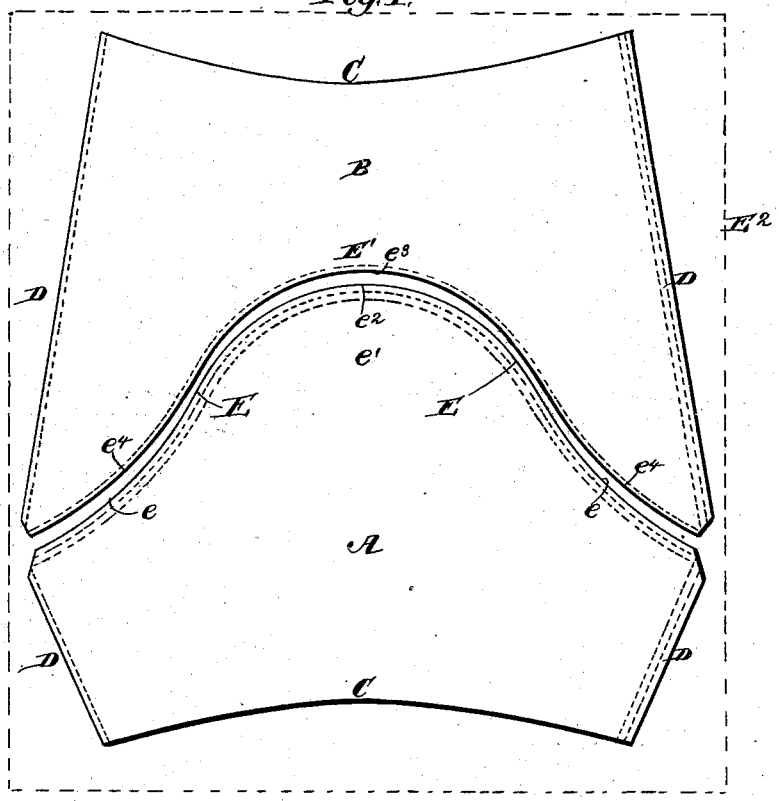
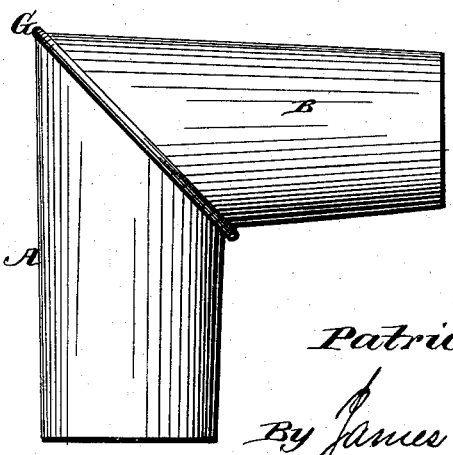


Fig. 2.



Witnesses,
Robert Everett.
J. A. Rutherford

Inventor:
Patrick Kearns.
By James L. Norris,
Atty

N. PETERS. Photo-Lithographer. Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

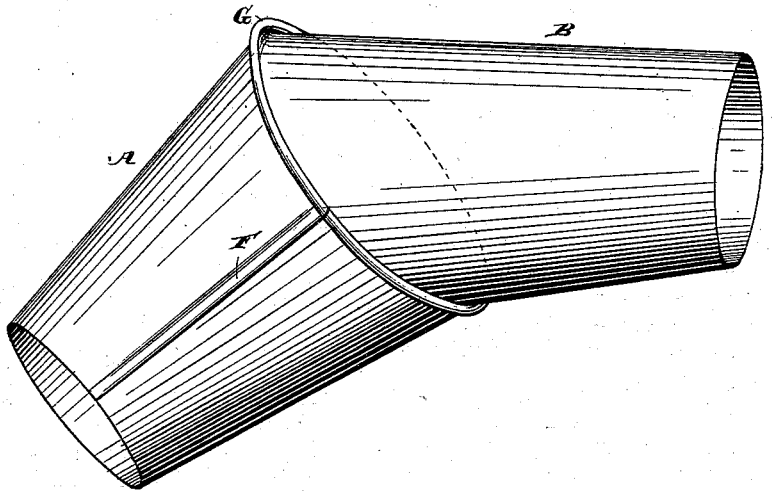

Fig. 4.

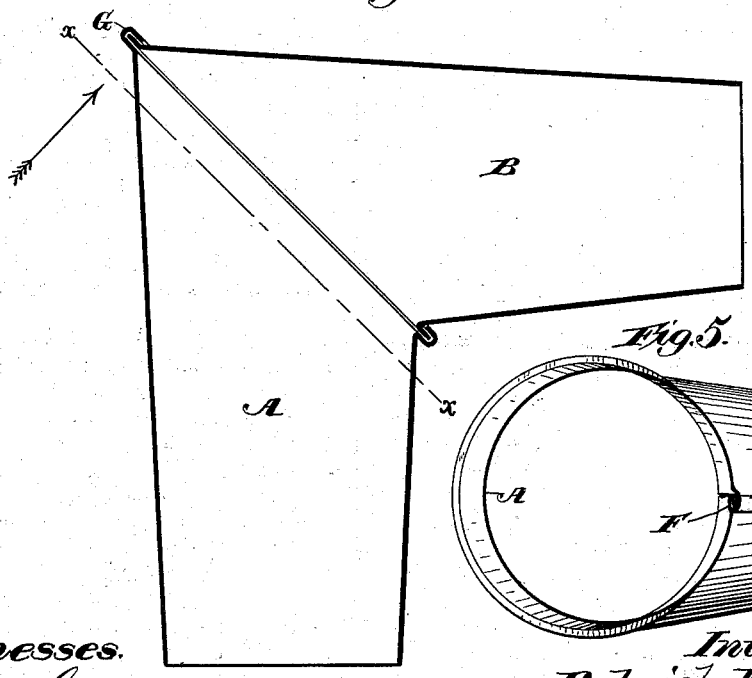

Fig. 5.

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UNITED STATES PATENT OFFICE.

PATRICK KEARNS, OF WILMINGTON, DELAWARE, ASSIGNOR TO FLINN & JACKSON, OF SAME PLACE.

ELBOW FOR PIPES.

SPECIFICATION forming part of Letters Patent No. 262,049, dated August 1, 1882.

Application filed June 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, PATRICK KEARNS, a citizen of the United States, residing at Wilmington, in the county of New Castle and State of Delaware, have invented new and useful Improvements in Elbows for Pipes, of which the following is a specification.

This invention relates to that class of elbow-joints for hot-air pipes, smoke-pipes, water-pipes, and the like in which the two parts of the pipe at the elbow are formed of any desired kind of metal and adjustably jointed together, so that the elbow can be adjusted to any desired angle.

The objects of my invention are to increase the facility for the passage of smoke through the elbow, to increase the capacity for radiating heat, and to provide for applying the elbow to pipes of varying diameter. These objects I attain by forming the adjustable jointed elbow as illustrated in the accompanying drawings, in which—

Figure 1 illustrates the way in which the blanks for forming the two parts or sections of the elbow are cut out from a sheet of metal. Fig. 2 illustrates the elbow formed from these blanks, and Fig. 3 illustrates the same with the parts adjusted to a different angle. Fig. 4 is a section taken longitudinally through the elbow; and Fig. 5 is a transverse section taken through Fig. 4 on the line $x\,x$, looking in the direction of the arrow.

Referring by letter to the drawings, let A indicate the sheet-metal blank for forming one section of the elbow, and B the blank for forming the remaining section thereof. These blanks are each formed with a curved edge, C, which constitutes the outer end of the section when the blank is bent into pipe form. The straight side edges, D, which form the seam, commence at the edge C, and diverge from each other so as to gradually increase the diameter of the section toward the joint of the elbow. The blank A extends forward considerably in advance of a line between the ends of these diverging edges D, and has a double curved edge, E, the curves e, on the opposite sides of this extension e', being made inwardly, and the curve e^2, between these two curves, being made outwardly, as shown. The blank B is formed with the curved end edge C and the straight diverging side edges, D, the same as in blank A. Its remaining end edge E′ is formed just the reverse of the end edge E in blank A—that is to say, instead of having the extension e', a portion of the blank corresponding to said extension is removed, so that the blank has at its said end edge the inwardly-curved middle portion, e^3, and the two curved portions e^4, between its corners and the curved part e^3, these curved parts e^4 having a gradual curvature, which is the reverse of the curved part e^3. This construction saves material in cutting out the blanks from a metal sheet, which latter is illustrated by the dotted line E^2, from which it will be seen that the metal removed to form the inwardly-curved edge of blank B constitutes the extended end e' of the blank A. The dotted lines shown in the two blanks indicate the lines where the bends occur in forming the complete sections of the elbow. In making the said elbow the blanks are bent into tubular form, and each is folded along its edges D, so as to form a seam, F. The blank A is bent along its curved edge E, so as to form a curled lip or bead, G, and the edge of the blank B is turned up so as to fit and work in the said bead.

It will thus be seen that the sectional area of the elbow is greater at its joint, each section of the elbow having a gradual taper from the joint to its end. By reason of such conical or tapering construction of these sections an enlarged elbow can be provided for a comparatively small pipe; or, if it is desired to fit in a somewhat larger pipe, it will only be necessary to cut off a portion of each end of the sections composing the elbow. The increased area of the elbow at the joint affords increased facility for the passage of smoke and heat, and also an increased heating-surface is obtained. In turning the two sections of the elbow at any desired angle the area of the passage will not be decreased, nor will there be any obstruction made therein to the passage of heat and smoke.

It will also be observed that but two parts only are employed for forming the elbow and

its joint, and hence a simple and cheap jointed elbow is obtained.

Heretofore stove-pipe elbows have been composed of two pipe-sections of uniform diameter from end to end and adjustably connected together at one end; but such construction differs from mine in that I make the sections of novel form to enlarge the cross-sectional area of the elbow at the bend or joint, and to provide for the connection of the elbow with pipes of varying diameter. Further, blanks for stove-pipe elbows have heretofore been formed with parallel straight edges at the ends, a straight edge at one side, and a curved edge at the opposite side, for making a right-angled elbow, the sections of which are immovably united; but such construction differs from mine in that I provide the ends of the blank with diverging edges and curve the opposite sides of each blank, whereby I obtain an elbow in which the pipe-sections taper and stand at right angles to each other to produce the results hereinbefore stated.

Having thus described my invention, what I claim is—

1. A stove-pipe elbow composed of two tapering pipe-sections swiveled together at their larger ends, substantially as and for the purpose described.

2. A stove-pipe elbow composed of two tapering pipe-sections swiveled together at their larger ends by bending the edge of one section to form a bead and turning up the edge of the other section to embrace the bead, substantially as and for the purpose described.

3. The blanks herein described for forming a pipe-elbow of two tapering sections swiveled at their larger ends, said blanks being formed with the inward end curves C and two straight edges, D, diverging from the ends of said curves, and one of the blanks being formed with the inward end curve E and the other blank with the outward double-curved edge, E′, substantially as shown, and for the purposes described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

PATRICK KEARNS.

Witnesses:
GEO. H. MURPHEY,
LEVI A. BERTOLETTE.