

(No Model.)

E. DEWS.

DIE FOR DRAWING ANGULAR TUBING.

No. 282,859.

Patented Aug. 7, 1883.

fig. 1

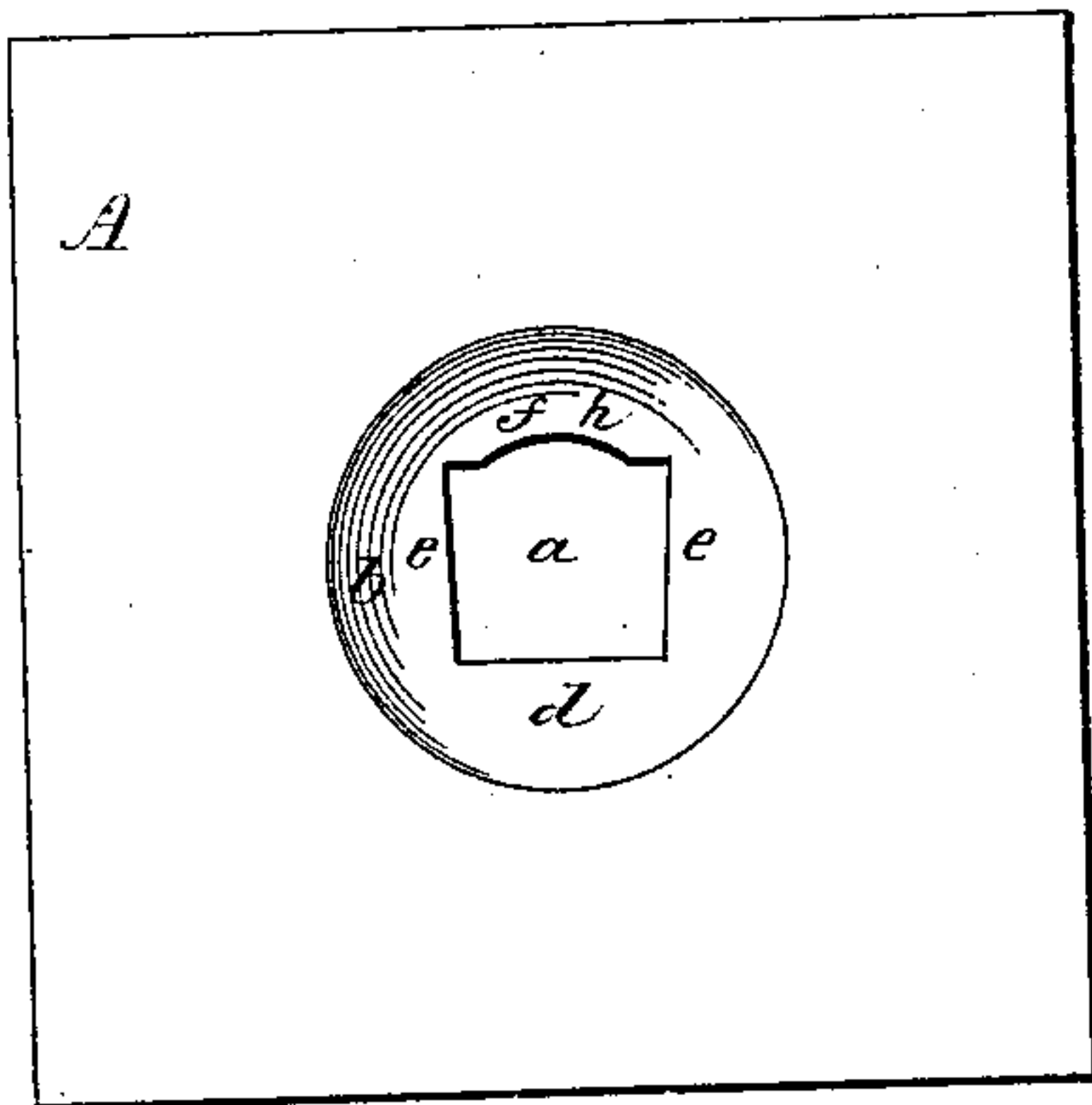


fig. 3

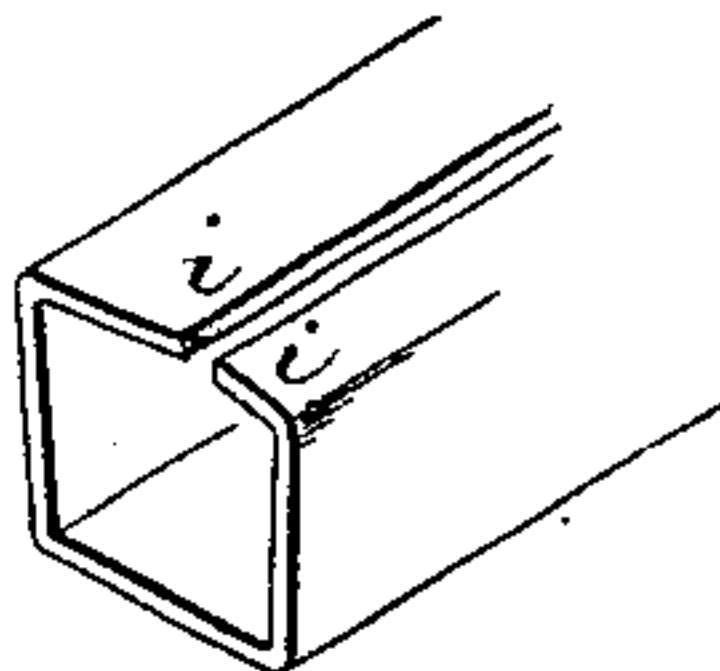


fig. 2

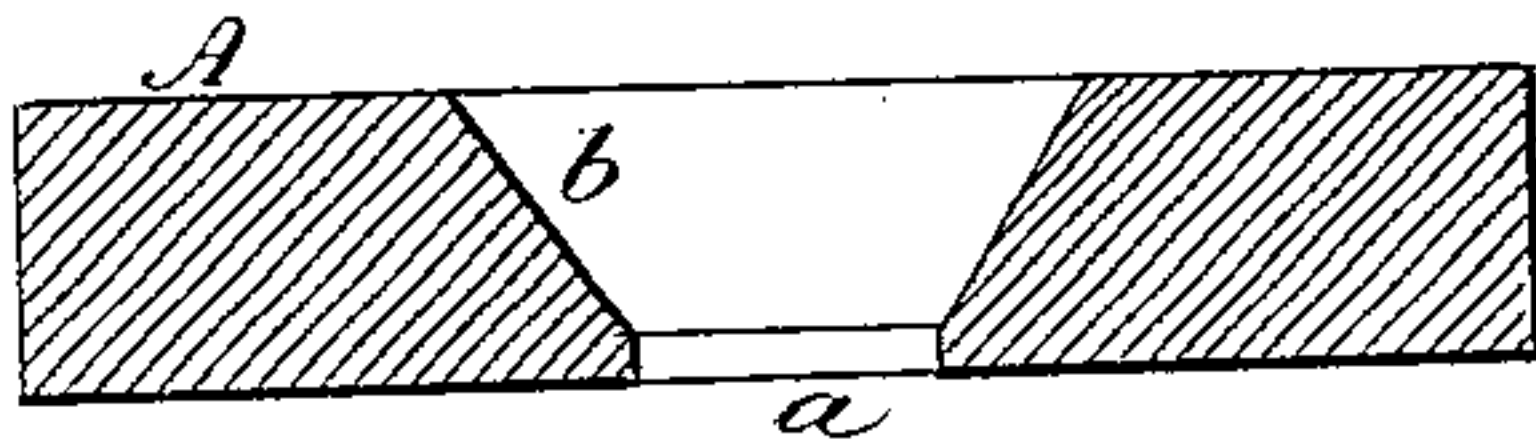


fig. 6

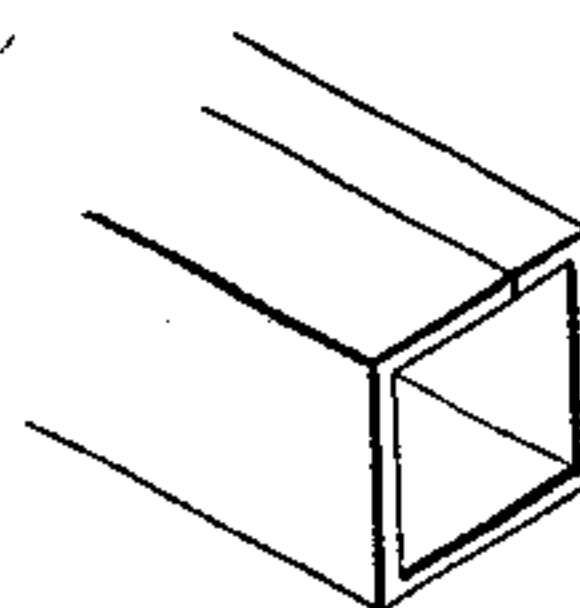


fig. 4



fig. 5

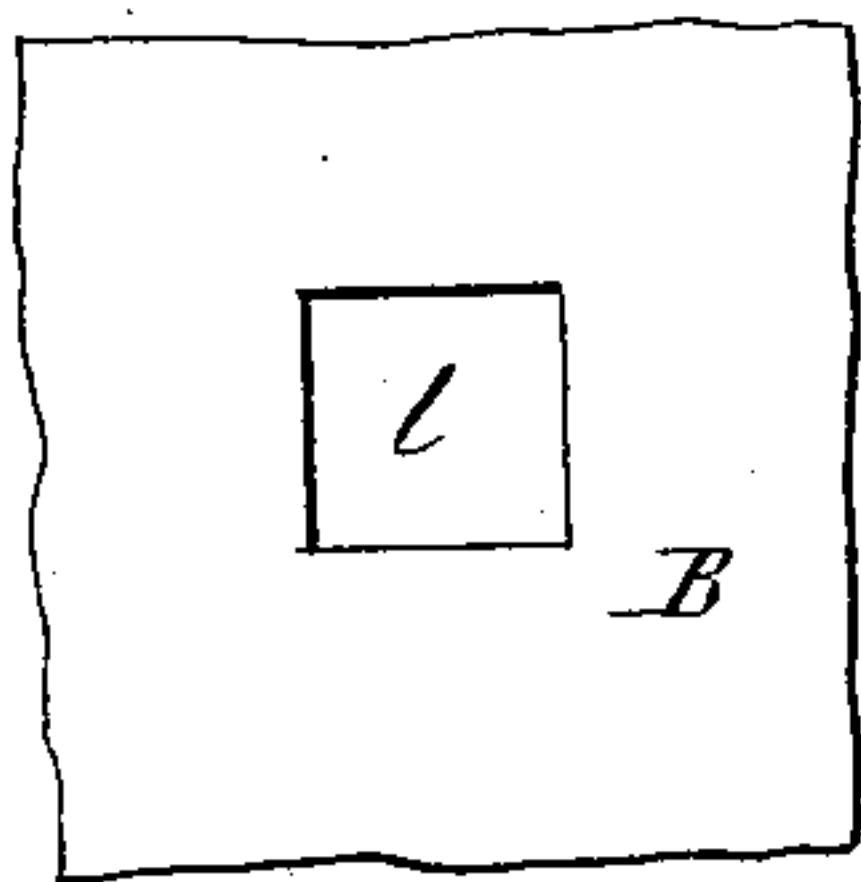
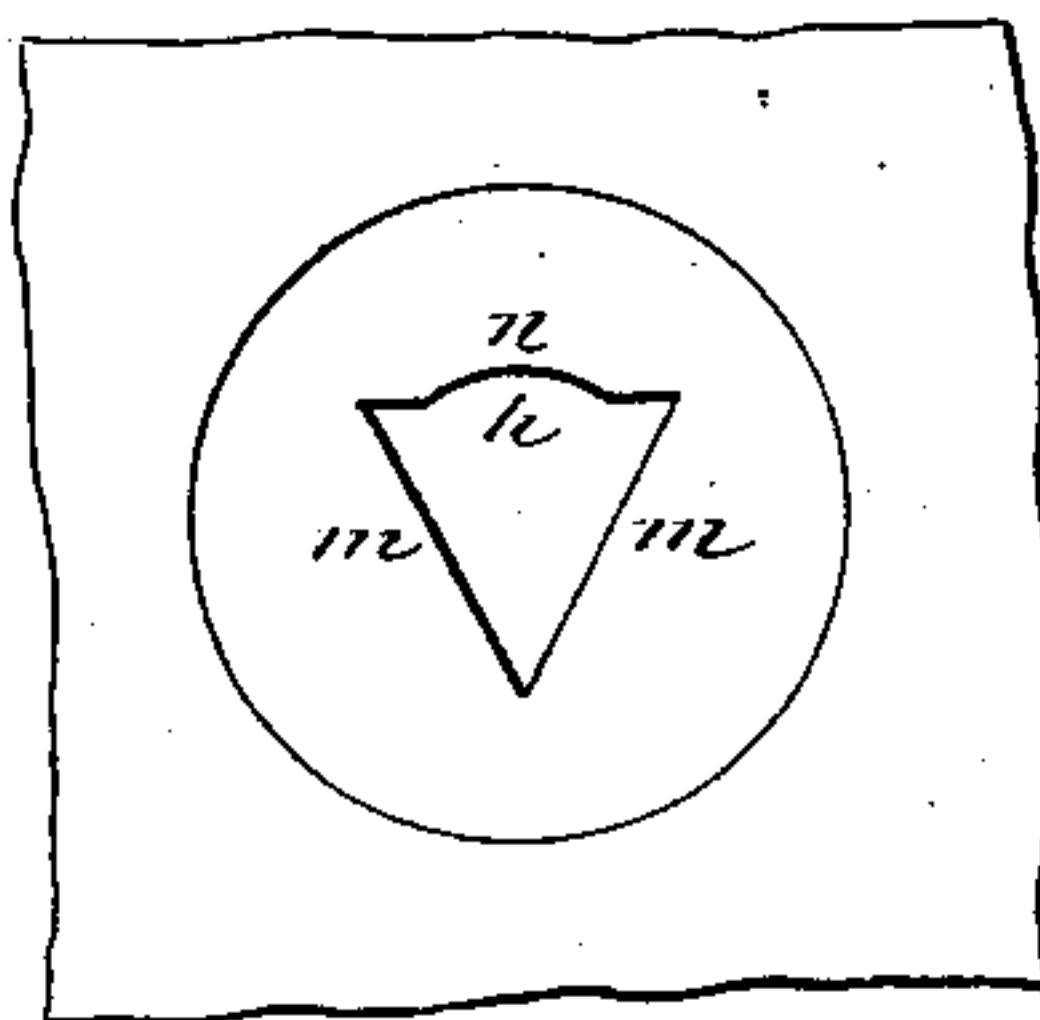


fig. 7



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UNITED STATES PATENT OFFICE.

EDWIN DEWS, OF ANSONIA, CONNECTICUT.

DIE FOR DRAWING ANGULAR TUBING.

SPECIFICATION forming part of Letters Patent No. 282,859, dated August 7, 1883.

Application filed April 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWIN DEWS, of Ansonia, in the county of New Haven and State of Connecticut, have invented a new Improvement in Method of and Dies for Forming Angular Tubing; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view of the improved die from the entering side; Fig. 2, a transverse section of the same; Fig. 3, a perspective view of the partially-formed tube as it comes from this die; Fig. 4, a transverse section of the same tube, the joint closed and brazed preparatory to the final drawing; Fig. 5, the usual dies for final or finished drawing; Fig. 6, the finished tube as it comes from the finishing-die; Fig. 7, a die embodying my invention as applied to drawing triangular tubing.

This invention relates to an improvement in the method of and dies for drawing tubing of square or angular shape. The usual method of drawing this class of tubing has been to first form a round tube from a strip of sheet metal and braze the meeting edges. This round tube was then drawn through a die resembling the final shape which the tube was to be, and partially formed—that is, what is commonly termed “broke down.” Then the partially-shaped tube was taken to a die of the exact finished shape and drawn through that die. But in this construction it is impossible to make perfect angles—that is, coming from the last or finishing die, the angle would not be quite filled, but left a little rounding.

The object of my invention is to simplify the process of drawing the tube, as well as to produce an angular tube in which the angles will be completely and perfectly filled; and my invention consists in the dies, as hereinafter described, and more particularly recited in the claims.

I will describe my invention as applied to forming a square tube.

The first die is represented at A, Figs. 1 and 2. This consists of a blank of suitable metal, through which is an aperture, *a*, a little greater in extent than the tube to be fin-

ished. On one side it has a funnel-shaped flaring mouth, *b*. The opening *a* has its one side, *d*, slightly longer than one of the sides of the finished tube. The two sides *e e* are about the same length, but, starting from the side *d*, diverge so that the opposite side, *f*, the opening is a little broader than the side *d*, and in the central portion of that side *f* is a recess, *h*. This recess I prefer to make concave in transverse section and extending over about one-half the length of the side, as shown; but it may be differently shaped, it only being essential that that side shall be recessed to make it higher in the center than at the sides *e e*. The funnel-shaped mouth *b* leads gradually into this die-opening *a*, as shown.

Instead of forming the round tube and brazing the edges, as hitherto practiced, I take a flat strip of sheet metal and bend the first end to something near the shape of the opening *a*, and so as to enter the opening, the two edges meeting in the recessed portion *h* of the side *f*. Then I draw the strip through the die in the usual manner of drawing tubing, which brings the blank into the shape seen in Fig. 3, the two edges *i i* nearly meeting each other, but inclined downward from their edge, as there shown. The angles are partially formed, as seen in that figure. A tool or cutter is then run through between the two edges to brighten them and fit them for brazing. Then the edges are bent down and brought together, as seen in Fig. 4, and then brazed in the usual manner. Next the blank thus prepared is taken to the drawing-die B in the usual manner, the opening *l* of which is of the exact shape of the to-be-finished tube and slightly smaller in area than the opening *a* in the forming-die. Through this die the tube is drawn in the usual manner, and the surplus metal left at or near the angles of the blank is forced into the angles to completely shape them, as seen in Fig. 6. By this method of drawing angular tubing I save one operation of first forming the round tube, as hitherto practiced, producing the tube at two operations, and because of the peculiar shape of my preliminary or first die, I am enabled to form perfect angles, which cannot be done by the old method of drawing. This illustration of the square die will be sufficient to enable those skilled in the art to produce other shapes—that is to say, if

a triangular is required, the opening in the die will be as seen in Fig. 7, the two sides *m m* diverging to a little greater extent than will the finished tube, the upper side, *n*, having substantially the same recess, *h*, as in the square die. For other shapes, the one side where the edges meet must be recessed to allow them to turn out from the plane of that side, so as to permit the dressing or scratching out of the joint preparatory to brazing, and then to be hammered down.

I claim—

1. The method herein described for making angular tubing, consisting in first drawing the blank strip through a die having a number of sides corresponding to the number of sides of the tube to be drawn, the side where the two edges of the blank will meet greater than the

opposite or adjacent sides, and recessed to permit the edges of the blank to turn outward from the plane of that side, the two edges then hammered down and brazed, and finally drawing the thus partially-formed tube through a die of the shape of the finished tube, substantially as described.

2. The herein-described die for shaping angular tubing preparatory to its final drawing, consisting of the aperture *a*, having its one side *f*, where the edges of the blank strip are to meet, recessed and of greater width than the opposite or adjacent sides, substantially as and for the purpose described.

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Witnesses:

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