

M. STEPHENS.

Device for Connecting, Holding, and Punching  
Sections of Sheet-Metal Pipe.

No. 163,341.

Patented May 18, 1875.

Fig. 1.

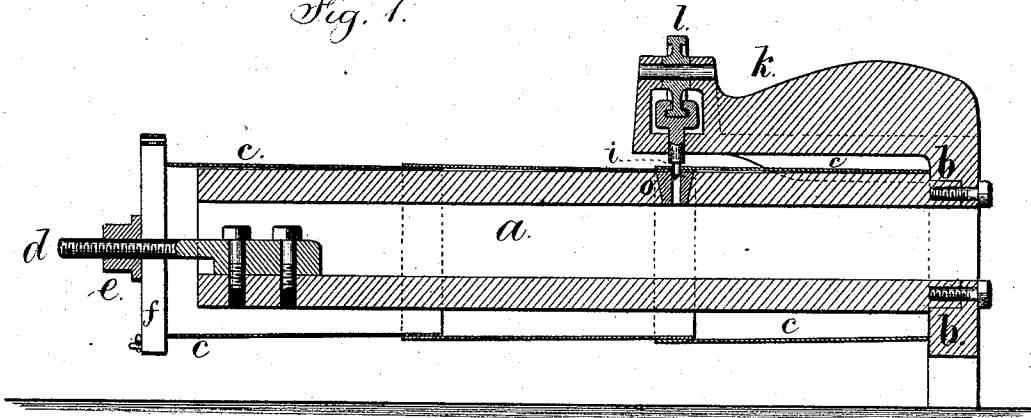


Fig. 3.

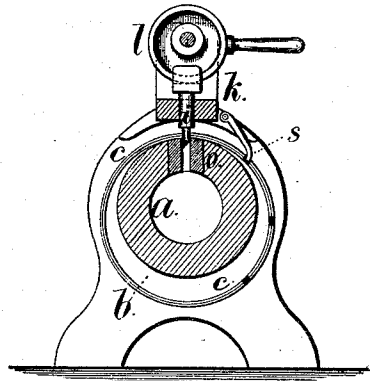
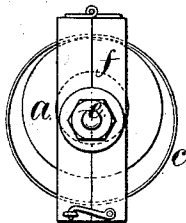


Fig. 2.



Witnesses

Chas. H. Smith  
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# UNITED STATES PATENT OFFICE.

MELVIN STEPHENS, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN DEVICES FOR CONNECTING, HOLDING, AND PUNCHING SECTIONS OF SHEET-METAL PIPE.

Specification forming part of Letters Patent No. **163,341**, dated May 18, 1875; application filed February 24, 1874.

### *To all whom it may concern:*

Be it known that I, MELVIN STEPHENS, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Means for Uniting Lengths of Sheet-Metal Pipe, of which the following is a specification:

In the manufacture of cement-lined water-pipe it is usual to connect two or three lengths of the sheet-iron tubes by peripheral rivets at the joints previous to lining the pipe with cement. This is especially the case with large pipes, so that the joints that are formed as the pipe is laid are less frequent. Stove-pipes are often similarly riveted together in lengths. In effecting these operations the lengths have to be forced together previous to riveting. This is usually effected by concussion upon the ends by mallets or otherwise, and frequently the metal is battered and injured.

My present invention is for forcing the lengths of sheet-metal pipe together, and keeping them properly in line while punching the peripheral holes for the rivets that connect the lengths. I make use of a guide-mandrel, that forms also an anvil and a die-holder, and I combine with this a screw-clamp and follower, that serves to press the lengths together; and I use a punch to form the holes of the peripheral row of holes through the two thicknesses at the joints to receive the rivets.

In the drawing, Figure 1 is a longitudinal section of the apparatus. Fig. 2 is an end view, and Fig. 3 is a cross-section through the punch.

The mandrel *a* is of a size to allow the sheet-metal tubes to be passed over the same freely, and it is adapted to the smaller tubes, and hence the larger tubes will only rest upon the same, as indicated in Fig. 3. At one end is

the abutment *b*, against which the end of the sheet-metal tube rests; and *d* is a screw-rod, that is movable, so as to be placed near the center of the sheet-metal tube *c*, and it is provided with a nut, *e*, and removable cross-bar *f*, so that the lengths of the sheet-metal tubes can be forced together by screwing up the nut *e*; and this mandrel *a* forms also an anvil and straightener, by which the lengths can be properly brought together and into line with each other. The mandrel *a* also becomes a die-holder, the die *o* being introduced therein and below the punch *i*—that is, at the end of the arm *k*—and is operated by the cam *l*, or other convenient means. This punch is employed in making the holes through the two thicknesses of metal where they are slipped together, so as to allow for inserting a row of peripheral rivets to unite the lengths of pipe. The gage *s* serves to determine the spaces between the holes, and with thick metal the outer tube may be punched with holes before the lengths are slipped together.

I claim as my invention—

1. The mandrel *a* and the abutment *b*, in combination with mechanism, substantially as specified, for pressing the lengths of sheet-metal tubing endwise, so as to slip one into the other, substantially as specified.

2. The arm *k*, punch *i*, and gage *s*, in combination with the mandrel *a*, abutment *b*, and mechanism for pressing the lengths of sheet-metal tubing together endwise, substantially as specified.

Signed by me this 21st day of February, A. D. 1874.

MELVIN STEPHENS.

Witnesses:

HAROLD SERRELL,  
GEO. T. PINCKNEY.