

S. P. M. TASKER.

MACHINES FOR BENDING TUBE SKELPS.

No. 175,780.

Patented April 4, 1876.

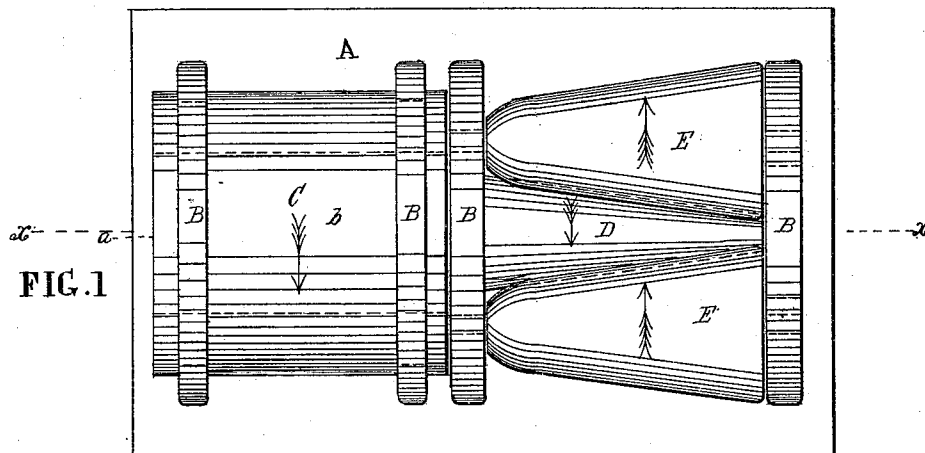


FIG. 1

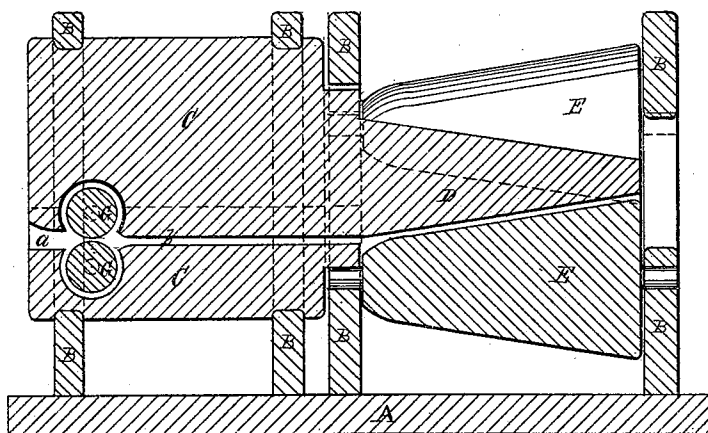


FIG. 2

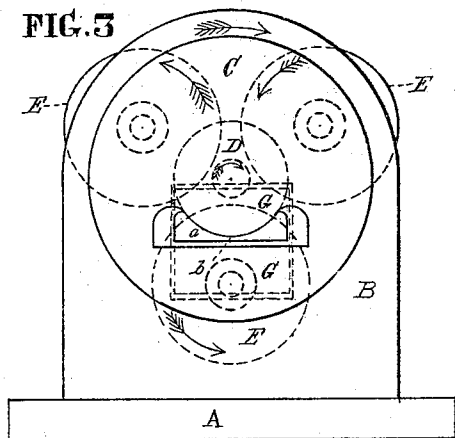


FIG. 3

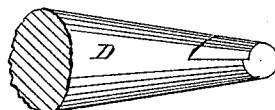
FIG. 4



FIG. 5



FIG. 6



Witnesses

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IMPROVEMENT IN MACHINES FOR BENDING TUBE-SKELPS.

Specification forming part of Letters Patent No **175,780**, dated April 4, 1876; application filed March 11, 1876.

To all whom it may concern :

Be it known that I, STEPHEN P. M. TASKER, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Machines for Bending Metal Plates into Tubular Form, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The nature of my invention consists in the first place in the combination of a revolving tapered mandrel, with three or more bending rolls, which revolve in opposite directions from the movement of the mandrel, whereby they gradually bring the plate to be bent to a cylindrical form as it passes from the large end of the mandrel to its small end. These rolls are so set as to leave a space between them and the mandrel equal to the thickness of the plate; and they may be either of cylindrical or tapered form. Yet I prefer the tapered form, and arrange their large ends with the small end of the mandrel, so as to have their journals parallel with the journals of the mandrel.

The invention, in the second place, consists in the combination of a revolving bed and a pair of feed-rolls, with the mandrel and the bending rolls, for feeding the plate to said rolls, the feeding-rolls being connected with the bed, and turning with it, as hereinafter described.

The bed, the feed rolls, and the bending-rolls are revolved by any suitable mechanism.

In the accompanying drawings, Figure 1 is a plan view of my improved machine. Fig. 2 is a vertical longitudinal section at the line *x x* of Fig. 1. Fig. 3 is a front elevation of the machine. Figs. 4 and 5 represent, respectively, a butt and lap joint. Fig. 6 represents one end of the mandrel, having a recess for bending the lap-joint.

Like letters of reference in all the figures indicate the same parts.

The several parts of my machine are supported by any suitable frame-work.

In the drawings, A represents the bed-plate, which has housings B B B B. C is a revolving bed, from one end of which projects

the tapered mandrel D. They are supported by the housings B. E E E are bending-rolls, of the same taper as that of the mandrel, so arranged as to leave the requisite space between them and the mandrel for the passage of the plate to be bent, and their journals lying in parallel planes, whereby they are adapted to spur gearing. In the front end of the revolving bed C are placed a pair of feed-rolls, G G, for feeding the plate to the bending-rolls, there being a mouth, *a*, in the end of the bed in front of these rolls. A channel, *b*, which is seen in Figs. 1 and 3, extends from the feed-rolls to the mandrel for the passage of the plate, the channel being of the same width as the mouth *a*.

The operation is as follows: The plate to be bent being entered between the feed-rolls G G, in the bed C, and the mandrel D, and bending-rolls E E E being revolved in the directions of the arrows by any suitable gearing, and the feed-rolls being carried around with the bed, the plate is carried forward through the channel *b*, and as it passes between the mandrel and the bending-rolls it is gradually brought into cylindrical form until it passes from between them at the small end of the mandrel, and either a butt-joint, as in Fig. 4, or a lap-joint, as in Fig. 5, is formed by the finishing process of the bending operation.

When the machine is intended to make lap-joints it is necessary to have a longitudinal groove extending from the small end of the mandrel D a few inches, as seen in Fig. 6, so that one side of the lap can be depressed, while the other side is pressed on it by the bending-rolls.

I do not confine myself to the use of three bending-rolls, as it will appear that a greater number may be advantageously used; nor do I confine myself to the use of the tapered bending-rolls, in combination with the tapered mandrel, as cylindrical rolls, when so arranged as to have an equal space between their peripheries and the mandrel throughout their whole length, will produce a similar result.

I claim as my invention—

1. The revolving bed C, having a mouth, *a*, and channel *b*, for the passage of a plate to

be bent, in combination with the tapered mandrel D, substantially in the manner and for the purpose set forth.

2. The combination of three or more bending-rolls, with the tapered mandrel D, for the gradual bending of the plate into cylindrical form, substantially as described.

3. The combination of the feed-rolls G G

with the revolving bed C, having a channel, b, for feeding the plate to the bending-rolls, substantially as set forth.

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Witnesses:

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