2 Sheets—Sheet 1.

S. P. M. TASKER.

DIES FOR DRAWING METAL TUBES.

No. 195,731. Patented Oct. 2, 1877.

Fig. 1.

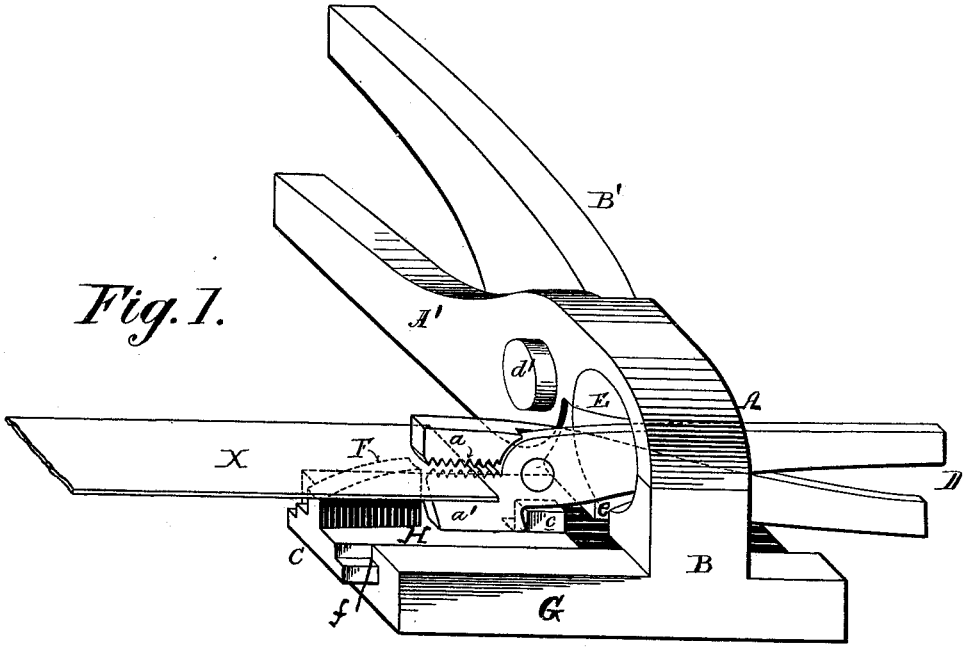
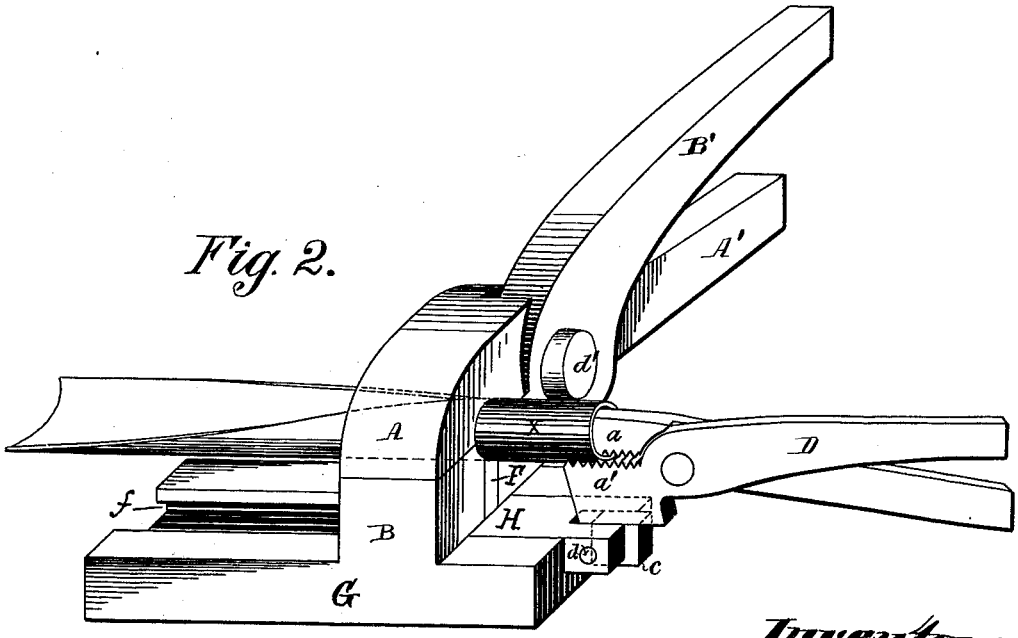


Fig. 2.



Witnesses
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2 Sheets—Sheet 2.

S. P. M. TASKER.

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Fig 3.

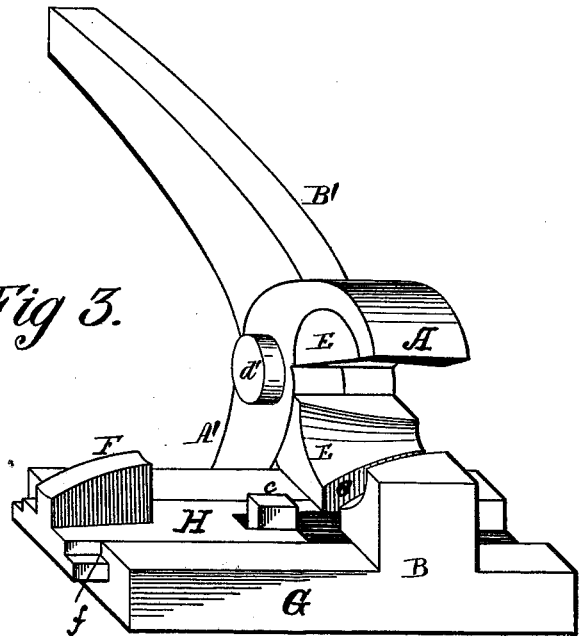
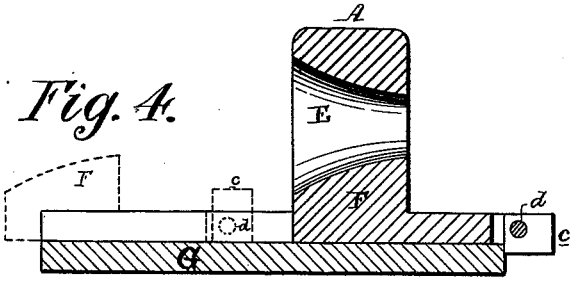


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

STEPHEN P. M. TASKER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN DIES FOR DRAWING METAL TUBES.

Specification forming part of Letters Patent No. **195,731**, dated October 2, 1877; application filed June 7, 1877.

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 Tube-Welding Dies, of which I do hereby declare the following to be a full, clear, and precise description, and sufficient to enable those skilled in the art to which my invention appertains to understand and construct apparatus embodying it, reference being had to the accompanying drawings, which form part of this specification, and of which—

Figure 1 is a perspective view of my apparatus with the drawing-tongs in place through the die and grasping the skelp, in readiness for the drawing; Fig. 2, a perspective view from the opposite side of the apparatus, showing the skelp partially drawn through the die and butt-welded, showing, also, the clutch-lug *c* dropped so as to permit the passage of the drawing-tongs; Fig. 3, a perspective view of the die open to permit the introduction of the handles of the drawing-tongs, showing the follower-die out of its matrix, and in position to receive and support the end of the skelp as it is first drawn from the furnace; and Fig. 4, a longitudinal vertical section of the die with the follower-die in place within the matrix and the clutch-lug *c* dropped, representing also, in dotted lines, the follower-die out of the matrix, and in position to receive and support the skelp, the clutch-lug being up in position to detain the tongs.

Similar letters of reference indicate corresponding parts wherever used.

My invention relates to the class of devices employed in the manufacture of butt or lap welded pipe for bending and welding skelp at a single process.

Heretofore, in apparatus of this class, constructed as in English Patent No. 3,278, A. D. 1870, it has been impossible to grasp the skelp in the furnace with the drawing-tongs, owing to the impossibility of introducing the latter, or the handles thereof, sufficiently far through the die to enable the seizing of the skelp.

To remedy the defect in, and generally to construct in a more convenient manner, the apparatus of the English patent aforesaid is the object of this improvement.

The following is a description of my apparatus: A is the upper and B the bed or lower section of a sectional tube-welding die or matrix, the lower section stationary, but provided with a lever-arm, B′, the upper pivoted to the lower at *d′*, and also provided with a lever-handle, A′, the whole so pivotally constructed in order to open and permit the passage of the spreading-handles of the drawing-tongs when it becomes necessary to introduce the latter deep into the heating-furnace in the grasping of the skelp.

The bed-die B is mounted upon a longitudinal bed-plate, G, and is longitudinally slotted at *e* for the reception of the follower-die. The bed-plate is provided with ways *f*, within which is fitted, and free to reciprocate, a carrier, H, upon which carrier is mounted what I term the "follower-die" F, being in effect a portion of the bed-die proper of the matrix, and, when drawn in, wedging within the slot *e* of the matrix in such manner as to complete the circle or throat E thereof. The carrier is also provided with the clutch-lug *c*—a cubical block eccentrically pivoted to it at *d* in such manner that when the carrier and follower-die are reciprocated out of and away from the matrix the lug is erect in the position shown in Figs. 1 and 3; but when they are reciprocated into place within the die, the lug, which is, as before stated, eccentrically pivoted, drops of its own weight over the edge of the bed-plate into the position shown in Figs. 2 and 4, the carrier being of sufficient length beyond the follower-die to extend over the edge of the base-plate and permit such dropping.

D are the drawing-tongs, the lower jaw *a′* of which is extended down and made of the depth of the highest portion of the follower-die, and is so formed as to rest upon the carrier and fill the space between follower-die and lug, and take against the lug *c* when the latter is up, for the purpose of drawing the carrier and follower-die. The lower jaw is likewise made of the width of the slot in the bed-die.

Such being the construction of my apparatus, the following is its action: The carrier, follower-die, and clutch-lug being in the position shown in Fig. 1, the tongs are manipulated through the die and into the furnace so as to grasp the heated skelp, the die being

swung open for the purpose. The skelp, being grasped in the jaws of the tongs, is then drawn out of the heating-furnace and rested upon the follower-die, the lower jaw of the tongs settling down into its position between the lug *c* and the follower-die. Traction is then exerted upon the tongs, and the skelp, together with the carrier and follower-die, by the action of the lug *c*, are drawn together into the matrix, the skelp being bent in its passage. As soon as the jaws of the tongs have passed through the slot in the matrix, the follower-die will have been drawn into and become wedged in said matrix, completing the circle of its throat to the perfect bending of the skelp, while such portion of the skelp as was within the jaws of the tongs is by them supported from bulging into the slot in its passage over it, the lower jaw of the tongs during the passage of the end of the skelp constituting a part of the matrix, so to speak, and completing the circle. As the bent skelp emerges from the die, as shown in Fig. 2, and as the follower-die is drawn into place, the lug *c* drops over the edge of the base-plate, as described, and permits the escape of the tongs with the tube, after which the drawing is continued until the entire skelp is bent and welded into a perfect tube.

I prefer that the follower-die should taper or wedge into the slot of the matrix, and thereby stop itself; but any suitable stop may be used instead.

When the tube is to be lap instead of butt welded, the usual lip is applied to the upper section of the die.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In combination with the carrier H and with the bed-plate G, tongs D and the clutch-lug *c*, eccentrically pivoted to said carrier, substantially in the manner and for the purposes set forth.

2. The drawing-tongs D, in combination with the clutch-lug *c*, carrier H, and hinged sectional die A B, substantially as specified.

3. The drawing-die A B, made in sections, hinged together, and provided with a slot for the passage of the drawing-tongs, in combination with the said tongs and a filling-up piece—viz., the follower-die—arranged to enter the slot after the tongs have passed through, and form part of the die during the subsequent drawing operation, substantially as and for the purpose described.

In testimony whereof I have hereunto signed my name this 4th day of June, A. D. 1877.

STEPHEN P. M. TASKER.

In presence of—
JOHN PARKER,
B. FELDMANN.