S. P. M. TASKER.

Mandrels for Rolling Metal Tubes.

No. 151,323. Patented May 26, 1874.

FIG. 1

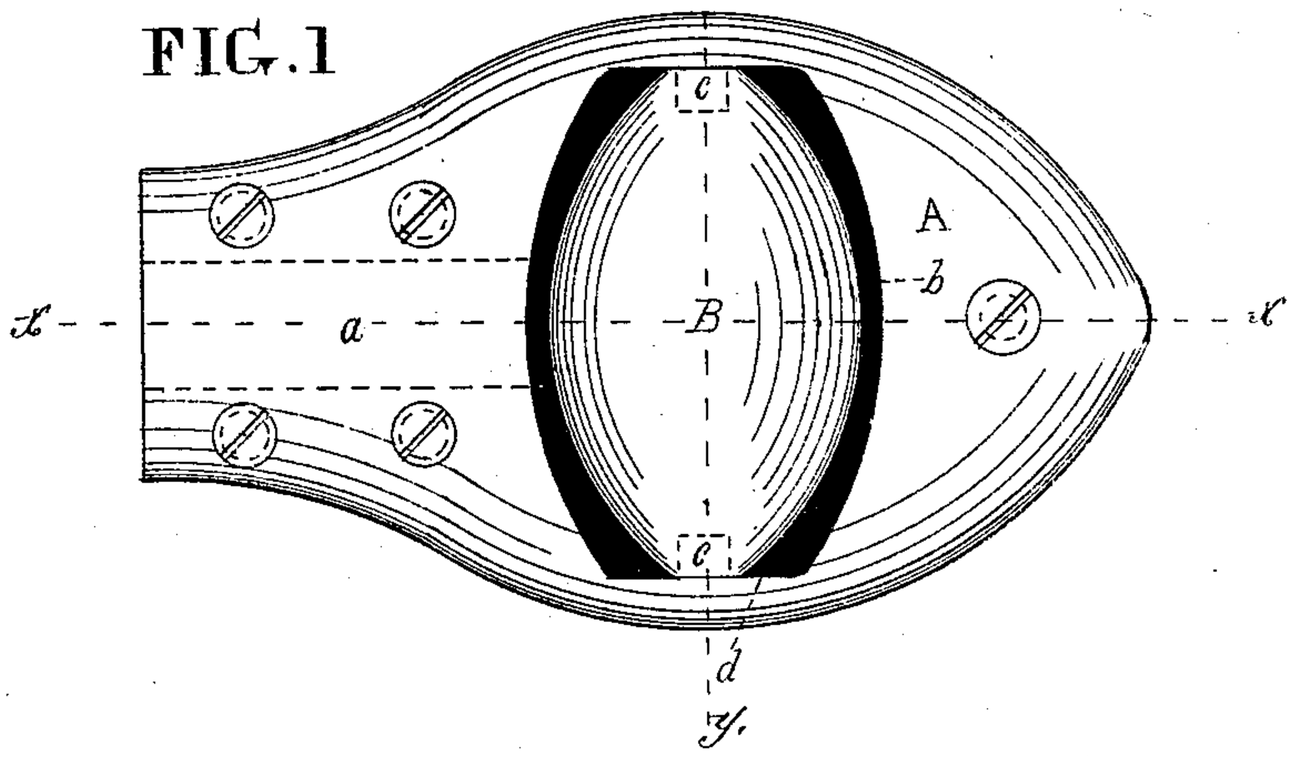


FIG. 2

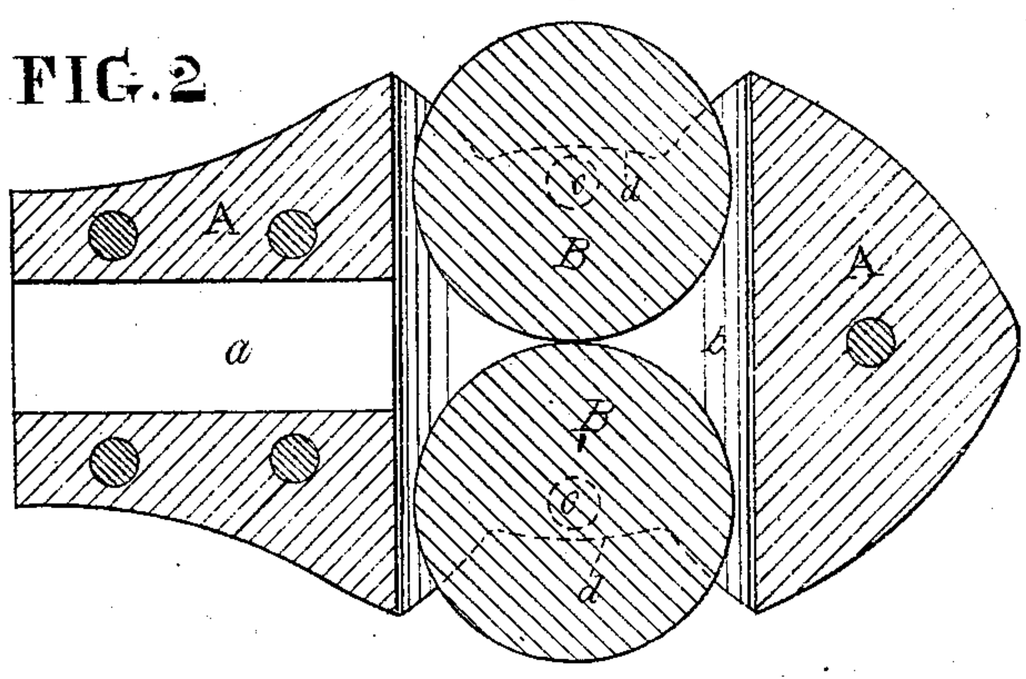
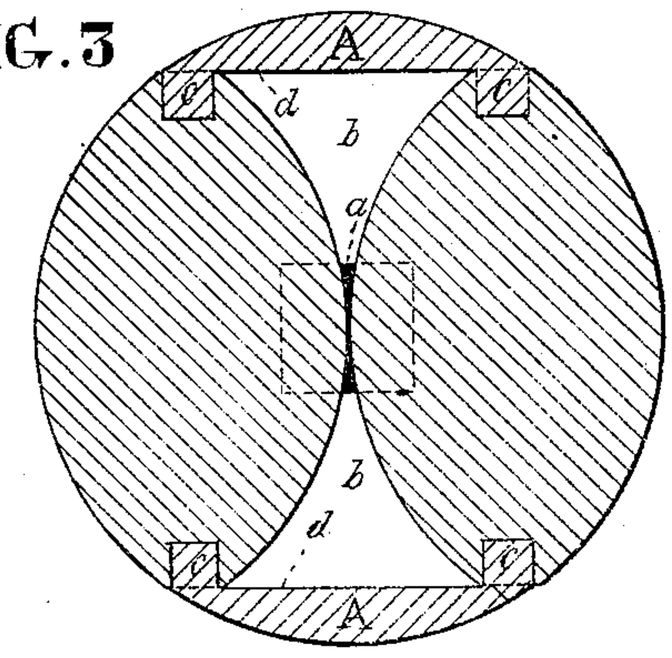


FIG. 3



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UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN MANDRELS FOR ROLLING METAL TUBES.

Specification forming part of Letters Patent No. **151,323**, dated May 26, 1874; application filed May 9, 1874.

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 an Improvement in Mandrels for Manufacturing Metal Tubes, of which the following is a specification:

In the manufacture of metal tubes it has heretofore been the practice to use a rigid mandrel; consequently much friction has been produced on the mandrel and the internal surface of the tube in the passage of the tube over the mandrel, thereby causing much wear and tear. The object of my invention is the overcoming of these objections as much as possible; and the nature of the invention consists in the employment of friction-rolls arranged in a cross-opening of the mandrel, and having bearings on or in the cheeks of the same, the longitudinal curvature of the rolls being such as to conform to the internal diameter of the tube.

The improvement is not only adapted to the manufacturing of round tubes, but may be used for square or other form by making the longitudinal form of the rolls to correspond thereto.

Figure 1 is a side view of my improved mandrel. Fig. 2 is a longitudinal section at the dotted line *x x* of Fig. 1. Fig. 3 is a cross-section at the line *y y* of Fig. 1.

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

A is a stock or case, whose exterior is somewhat similar to that of an ordinary mandrel for forming the insides of metal tubes. It has a longitudinal opening, *a*, for connection with the mandrel-rod. The improvement consists in the employment of two rolls, B B, which are inserted in the cross-opening *b* of the case A. There are bearings *c* for the rolls, which project inward from the cheeks *d d* of the case A, as represented in Figs. 1 and 3. For the convenience of taking out and replacing the rolls, the case A is made in halves, which are confined together by means of screws *e* or bolts, or other suitable device, as seen in Figs. 1 and 2. The longitudinal form of the rolls corresponds to the internal size of the tubes to be manufactured, so that a circle which circumscribes the sides of the rolls outside of the case is the exact size of the inner diameter of the tubes. As the rolls are intended to take the whole pressure of the internal surface of the tube, the outer surface of the cheeks *d d* come within the circle which circumscribes the rolls. I make the diameter of the rolls one-half of the internal diameter of the tube, so as to cause them to roll against each other, and thus take the pressure off of their bearings.

If desired, the bearings *c* may be on the ends of the rolls, instead of on the cheeks *d d* of the case A, the bearings extending into the cheeks.

The mandrel is intended to be used in the manufacture of all kinds of metal tubes manufactured from either hot or cold metal by the use of rolls or dies.

After the tube has been passed over the mandrel, or the mandrel through the tube, either the former or latter should be turned one-fourth around, and the operation continued, so that all parts of the tube may be acted upon alike.

I claim as my invention—

The combination of the rolls B B with the stock or case A, substantially in the manner and for the purpose above described.

STEPHEN P. M. TASKER.

Witnesses:

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