

S. P. M. TASKER.  
Tube-Welding Devices.

No. 149,892.

Patented April 21, 1874.

FIG. 1

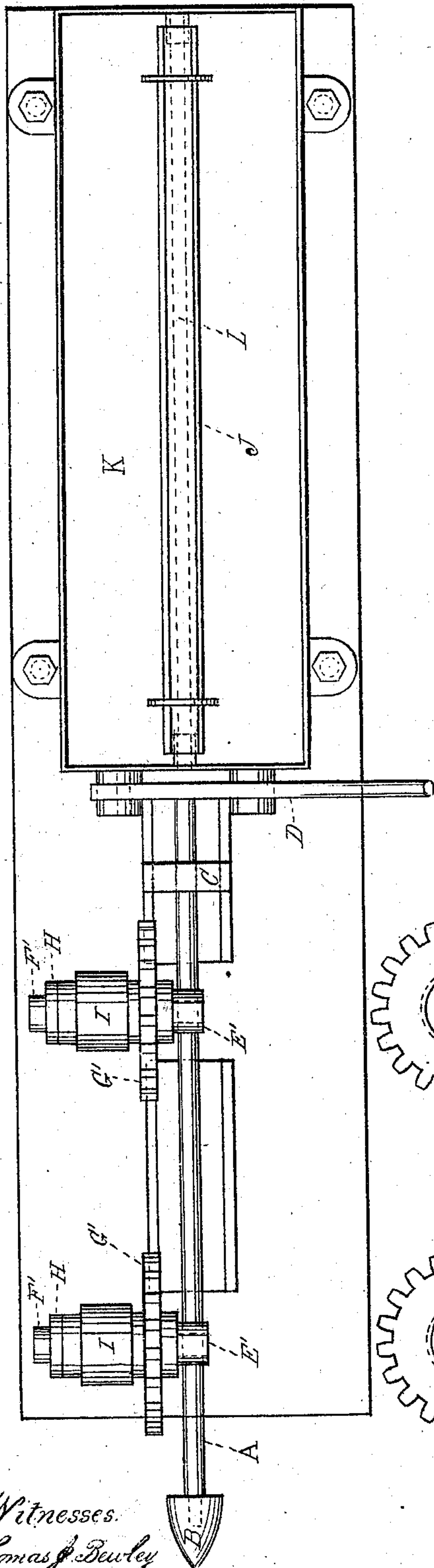


FIG. 2

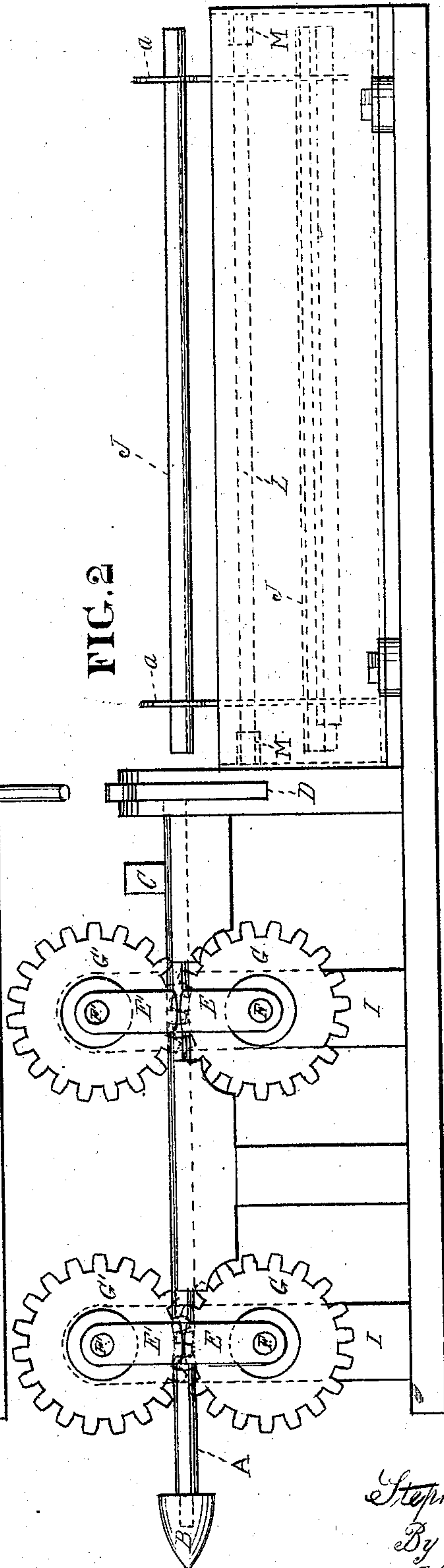


FIG. 4

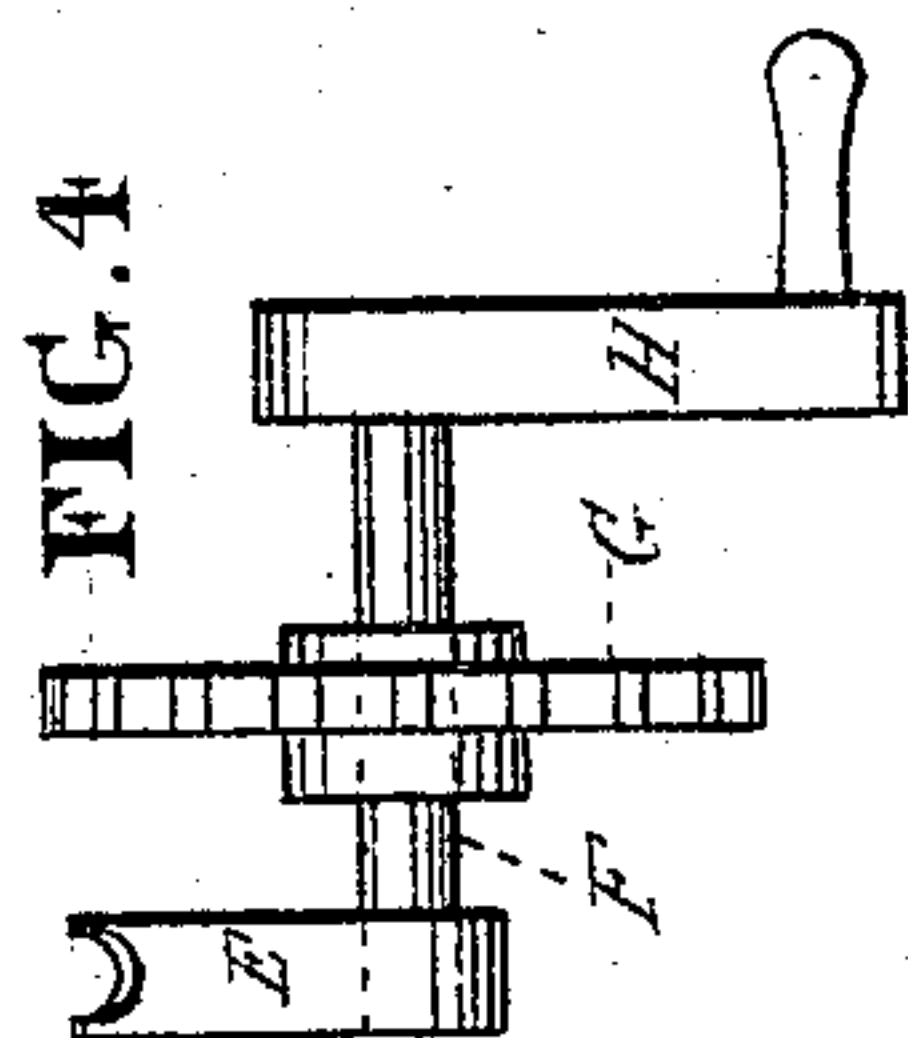


FIG. 3

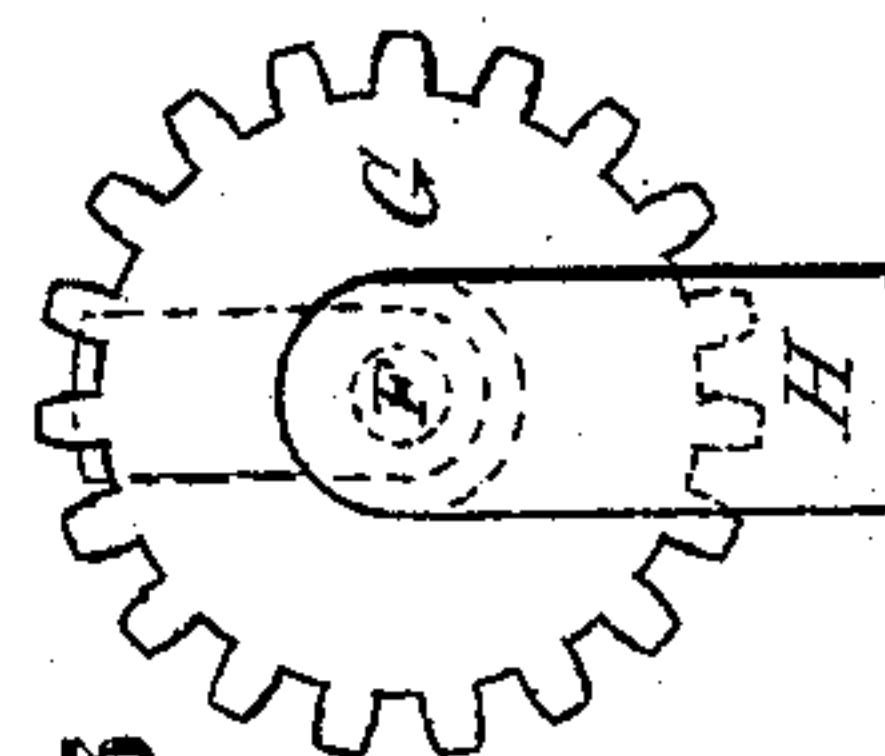


FIG. 5



Witnesses:  
Thomas J. Dewley  
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By His Attorney  
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# UNITED STATES PATENT OFFICE.

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

## IMPROVEMENT IN TUBE-WELDING DEVICES.

Specification forming part of Letters Patent No. 149,892, dated April 21, 1874; application filed February 17, 1874.

### CASE A.

*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 Machines for Manufacturing Metal Tubes, of which the following is a specification:

My invention is an improvement in that class of machines in which a ball-bar is used to resist the pressure exerted upon the outer surface of the tubes. The invention, in the first place, consists of pairs of movable supports for holding the bar in position, each pair being geared together on partially-revolving shafts in such a manner as to be free to move out of the way of the advancing tube as its forward end strikes against them. When the tube passes the supports, they are brought back to their former position by means of a crank or other device on one of the shafts. The invention, in the second place, consists of duplicate carriers for the bar, which have an intermittent revolving movement in a water-tank—that is, in line of movement of the tube—in such a manner that as a bar has passed out of the tube when the latter is drawn or rolled, and is brought into one of the carriers, the carrier is turned into the water to cool the bar, and the other carrier is brought up above the water; and the cool bar is then removed to the opposite end of the machine, and a ball connected with it to receive the next tube, and so on in succession.

The apparatus can be used without the water-tank, if desired, as the bars will be somewhat cooled by being carried around by the carriers.

In the accompanying drawings, Figure 1 is a plan view of that part of a tube-manufacturing machine which contains my improvements. Fig. 2 is a side elevation of the same. Figs. 3 and 4 are views, at right angles to each other, of the lower supports E, with parts permanently connected therewith. Fig. 5 is a cross-section of the carriers J J.

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

A is the ball-bar, and B the ball, constructed

in the usual manner. C is the guard-ring, and D the stop-lever, arranged as in ordinary tube-machines. The ball-bar is so arranged as to bring the ball B between the rolls, which are not shown in the drawings. E E are supports for the lower side of the bar B. They are on shafts F F, having gear-wheels G G and cranks H H', (shown in detail in Figs. 3 and 4.) Instead of the cranks, any other suitable device may be used. The shafts are supported by the standards I I, which also support the shafts F' F' of the upper supports E' E'. These are provided with gear-wheels G' G'. These wheels mesh into the wheels G G, so that a simultaneous movement is given to the lower and upper supports by the movements of the cranks H H, or other device, or by a direct movement imparted to either an upper or lower support. The inner ends of the supports are curved, as represented in Fig. 4, to receive the bar A.

When the bar is placed in the position represented in Figs. 1 and 2, the ball B is between the rolls, and receives the advancing tube. The front end of the tube, as it comes against either pair of supports, pushes them out of its way; and, when the rear end of the tube passes them, they are again brought into their vertical position to receive the bar by means of the crank H, or other device. When the forward end of the tube has reached the guard-ring C, the tube is thereby arrested in its movement, and the stop-lever D, against which the forward end of the bar rested, is moved out of the way to permit the passage of the ball-bar. When the bar is started, the ball drops off its end. The bar is moved forward, by any suitable machinery, to the carriers J J in the tank K, which is kept filled with cold water to cool the bar, which has been highly heated by the passage of the tube over it. The said carriers (a cross-section of which is shown in Fig. 5,) are connected, near their ends, by the cross-plates a a on the central shaft L. The shaft is supported, by the bearings M M, in the ends of the tank, so as to admit of the carrier turning freely in the same.

When a bar is placed in the upper carrier, a partial revolution is given to the latter, which



brings the bar into the lower part of the tank, where it remains until the next bar is brought into the other carrier, which has assumed the upper position. A partial revolution of the carrier is then again given, by which the cooled bar is brought out of the water, to be removed to the other end of the machine, to receive the next tube, and the heated bar is brought into the water to be cooled; and so on in succession, as the tubes are drawn or rolled.

I have above described two carriers; but in practice I may use a greater number, by which arrangement they may be cooled off without the use of a water-tank.

I claim as my invention—

1. One or more pairs of supports for the ball-bar A, geared together, so as to move si-

multaneously with each other, to come into position to hold the bar, or to be moved out of the way of the tube by the pressure of its forward end against them, substantially as described.

2. The carriers J, arranged at the forward end of the machine, for receiving the ball-bars as they pass from the same, to retain them until cooled, substantially in the manner above set forth.

3. A water-tank, in combination with a revolving carrier, for cooling the ball-bars, substantially as described.

STEPHEN P. M. TASKER.

Witnesses:

THOMAS J. BEWLEY,

STEPHEN USTICK.