2 Sheets—Sheet 1.

# S. P. M. TASKER.

## MACHINE FOR PUSHING METAL TUBES AND SKELPS INTO A FURNACE.

No. 174,321. Patented Feb. 29, 1876.

FIG. 1

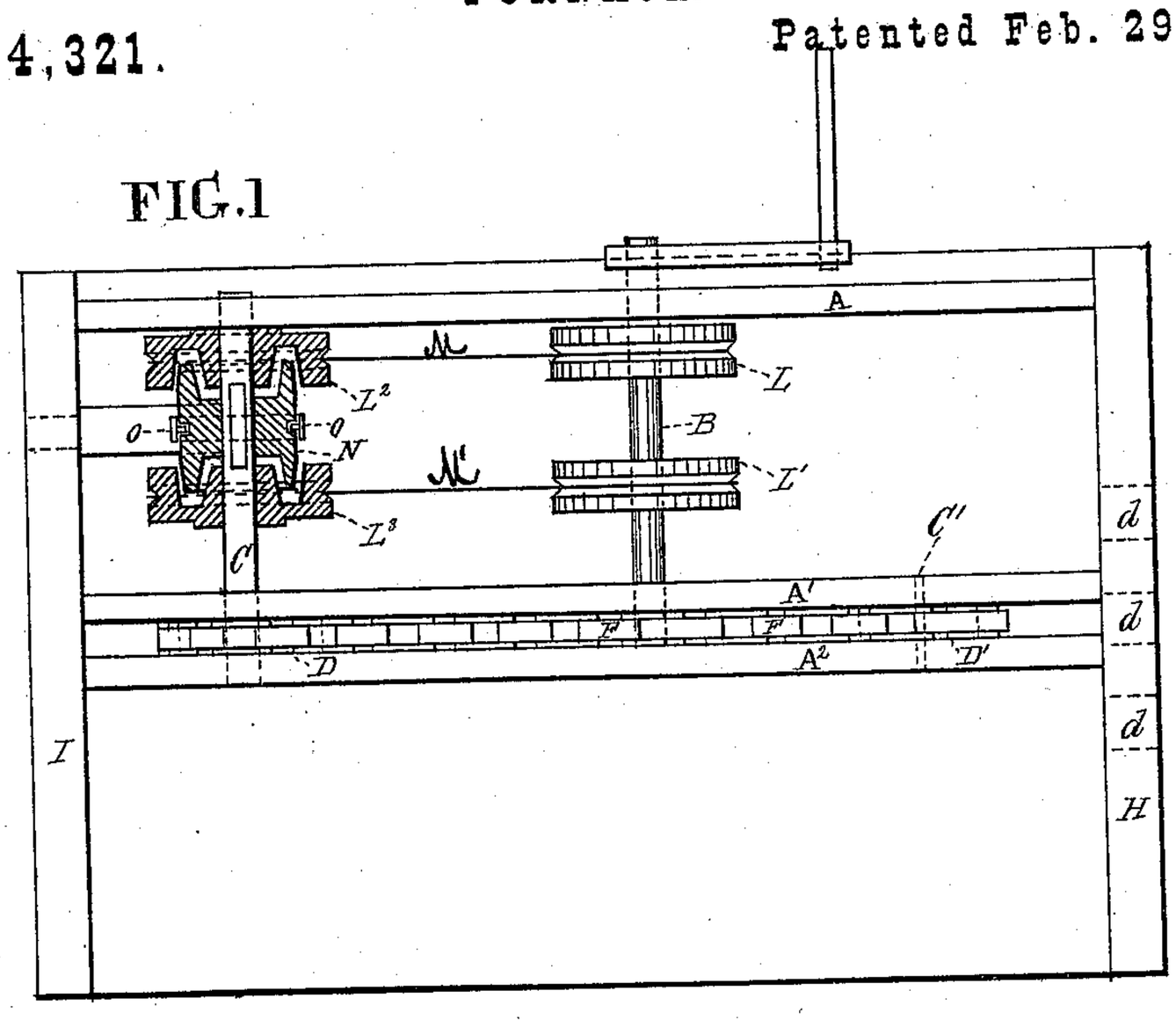
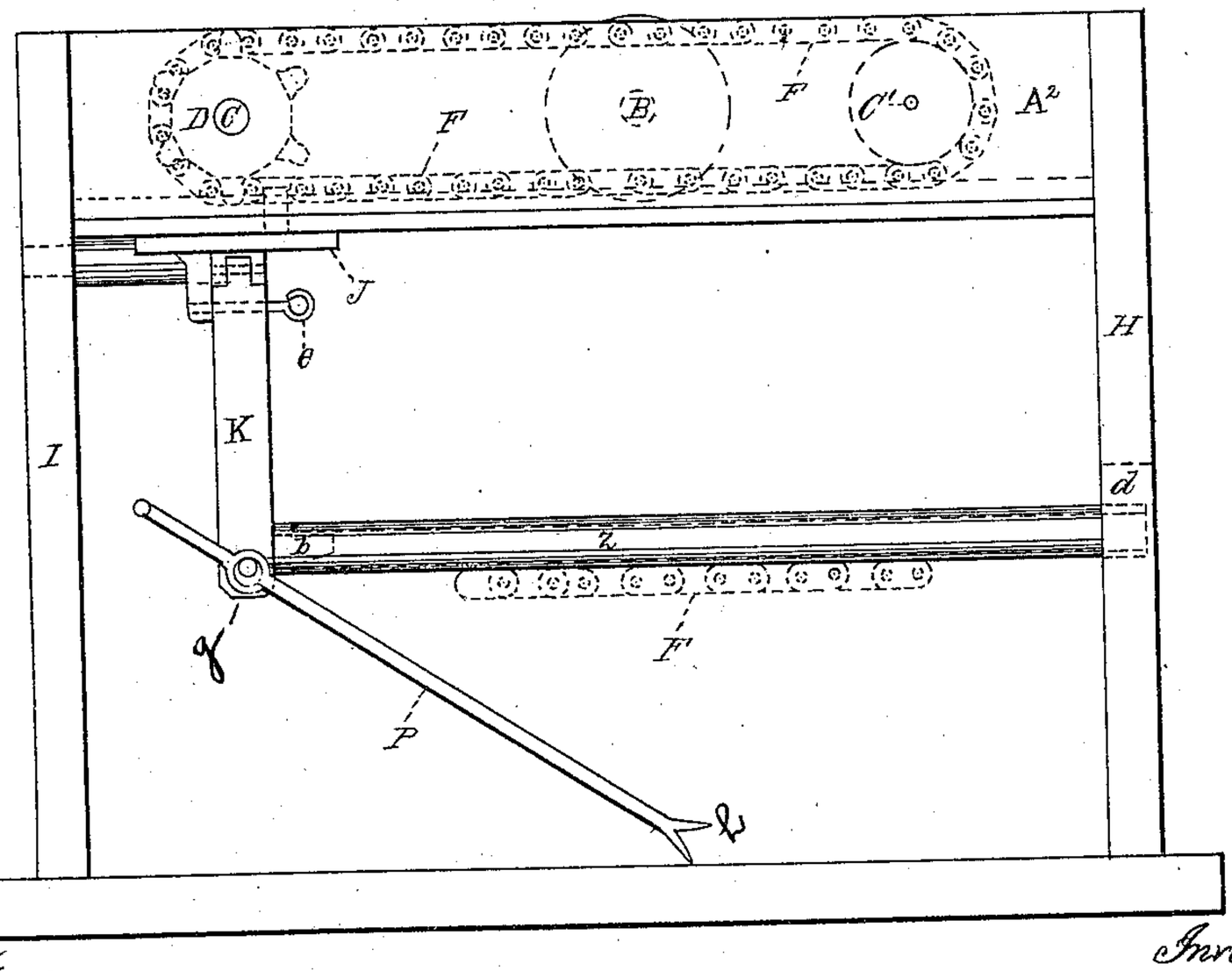



FIG. 2

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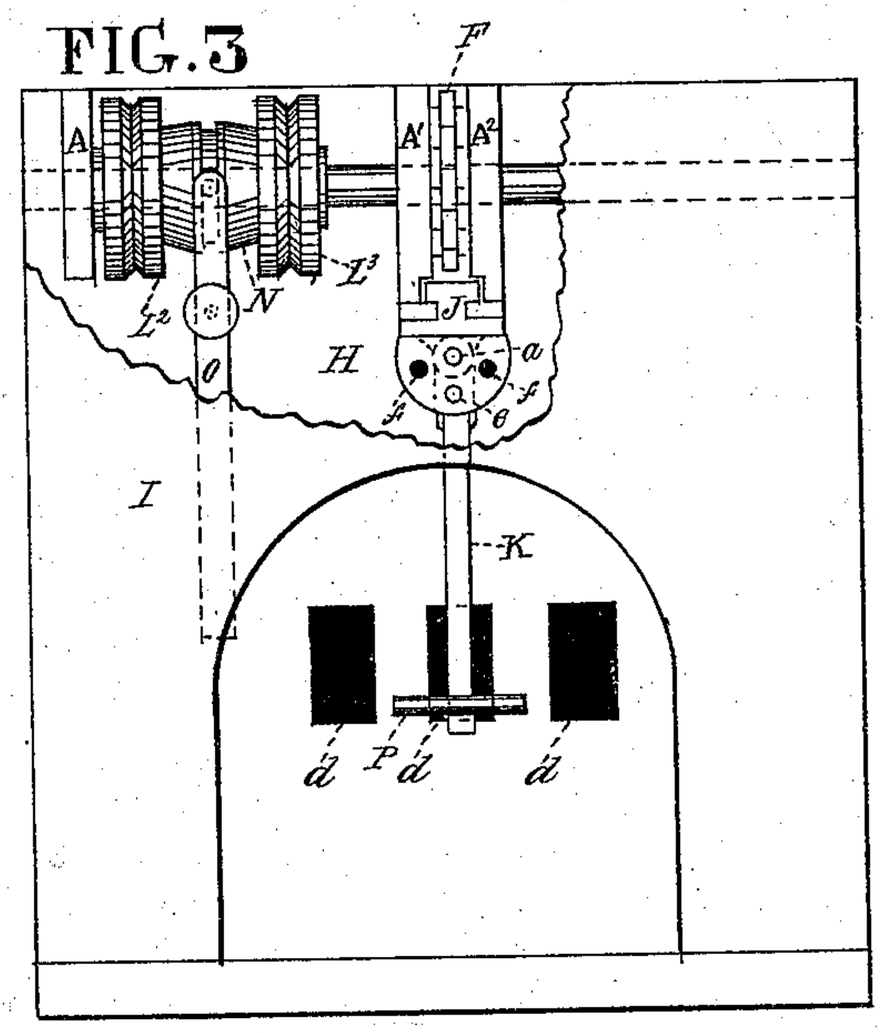
2 Sheets—Sheet 2.

# S. P. M. TASKER.

## MACHINE FOR PUSHING METAL TUBES AND SKELPS INTO A FURNACE.

No. 174,321. Patented Feb. 29, 1876.

FIG. 3

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## IMPROVEMENT IN MACHINES FOR PUSHING METAL TUBES AND SKELPS INTO A FURNACE.

Specification forming part of Letters Patent No. **174,321**, dated February 29, 1876; application filed February 7, 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 Machine for Pushing Metal Tubes and Skelps into and through a Furnace, of which the following is a full and exact description, reference being had to the accompanying drawings.

My invention consists of the following particulars: An endless chain is placed on a wild-cat or other wheel, and with said chain is connected a slide, which has an arm for pushing the tube or skelp forward. The arm is hinged to the slide to admit of it being adjusted so as to be in line with either opening of the furnace. It is held in its adjusted position by any suitable device. The arm has a projection to receive the rear end of the tube or skelp, the forward end being placed in the furnace-opening. Connected with the arm is a rod which projects forward and has at its forward end a crotch for the connection with the rear end of the tube, to finish pushing it into the furnace after the termination of the action of the arm. On the wild-cat shaft is placed a double-cone clutch which connects by means of a lever alternately with two band-wheels which are in line with two other wheels on the driving-shaft, whereby two belts are used alternately (one being loose) for giving a forward and reverse movement to the chain for pushing the tube or skelp into the furnace and returning the carrying-arm to its position for pushing forward another skelp or tube. I prefer using the friction-clutch above mentioned instead of an ordinary clutch, so that in case of accident the wheels will slip and prevent damage. For pushing the tube or skelp into the bending or welding rolls I use a rod of convenient shape connected with the above-mentioned carrying-arm; and for drawing them out of the furnace at the same end they enter it I apply tongs connected with said arm.

In the accompanying drawings, Figure 1 is a plan view of my machine with a horizontal section through the conical clutch and band-wheels connected therewith. Fig. 2 is a side elevation of the machine. Fig. 3 is an end elevation of the same.

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

A, $A^1$, and $A^2$ are horizontal plates, which have bearings for the journals of the driving-shaft B and shafts C and C′. On the shaft C is the wild-cat wheel D, for propelling the endless chain F, and on the shaft C′ is placed the chain-carrying wheel D′. The plates are supported at one end by the wall H, which is at one end of the furnace and at the other end by the wall I. This wall is open below for the passage of the tube or skelp. The general arrangement for the support of the revolving-shafts is given merely for illustration. With the bottom edges of the plates $A^1$ and $A^2$, between which the chain F moves, is connected the slide J, which is operated by means of the chain. K is an arm of the slide. It is hung thereto by means of the pin *a*. The arm has a projection, *b*, which serves for a rest for the rear end of the tube or skelp Z, the front end of which is placed in one of the openings *d* in the end of the furnace. The pivotal connection of the arm with the slide J admits of its being so adjusted as to be in line with either opening of the furnace. When adjusted it is held in place by means of the pin *e*, which is placed in one of the holes *f*. When the machine is used with a furnace having a single opening, the arm K may have a fixed connection with the slide J. On the driving-shaft B are placed pulleys L and L′, and on the shaft C, which is provided with the wild-cat wheel D, are loose pulleys $L^2$ and $L^3$, and with the pulleys L and $L^2$ are connected the direct belt M, and with the pulley $L^1$ and $L^3$ the cross-belt M′, for giving alternately a forward motion to the arm K, to push the tube or skelp into the furnace, and a reverse motion for bringing the arm back to its starting-point ready for the movement of the next tube or skelp. On the shaft C, for fastening the pulleys $L^2$ $L^3$, is the double-cone clutch, N, operated by means of the lever O, for connecting the clutch respectively with the said pulleys $L^2$ and $L^3$, for changing the motion of the chain, so as at the proper time to move the arm forward to push the tube or skelp into the furnace, or by a reverse motion to bring it to its position for pushing another tube or skelp forward. As the tube or skelp cannot

be pushed all the way into the furnace by the arm K, I use the rod P for completing the operation. The rod is hung at its rear end to the arm K by means of the joint-pin *g*. Its forward end has a crotch, *h*, which is connected with the end of the tube or skelp after a reverse movement is given to the chain to bring the crotch back to the right position to make the connection. And when the pushing of the tube into the furnace is completed the movement of the chain is again reversed for pushing forward another tube or skelp. By employing a different device for pushing the tube or skelp into the furnace, a continuous motion might be given to the chain F. But, as it is sometimes necessary to draw the tubes or skelps out of the furnace at the same end they go in, I prefer the reciprocating movement to the chain. When they are so drawn out I use a pair of tongs connected with the arm K. For pushing the tube or skelp through the furnace into the bending or welding rolls, I use a bar of any convenient shape attached to the arm K. It will readily be seen that in place of the endless chain other devices may be used, such as a metallic band, wire rope, &c. And instead of the projecting arm K suitable stands may be used for laying the tube or skelp on and having the lower end of the arm bearing against their rear ends. I prefer arranging the endless chain and parts connected therewith overhead, as shown in the drawings, instead of below, so as to have them out of the way; in which case the tube or skelp would lie on the chain F, as shown by dotted lines in Fig. 2.

We claim as my invention—

1. The combination of the endless chain F with the double acting clutch N and pulleys $L^2$ and $L^3$, for giving a reciprocating motion to the chain, substantially as set forth.

2. The slide J, having an arm, K, in combination with the endless chain F, for the movement of a tube or skelp, substantially as set forth.

3. The arm K, hinged to the slide J, and adjustable by means of the pin *e* and holes *f*, or other suitable device, substantially as set forth.

4. The pushing-rod P, having a crotch, *h*, at its forward end, in combination with the arm K, substantially as and for the purpose set forth.

STEPHEN P. M. TASKER.

Witnesses:

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