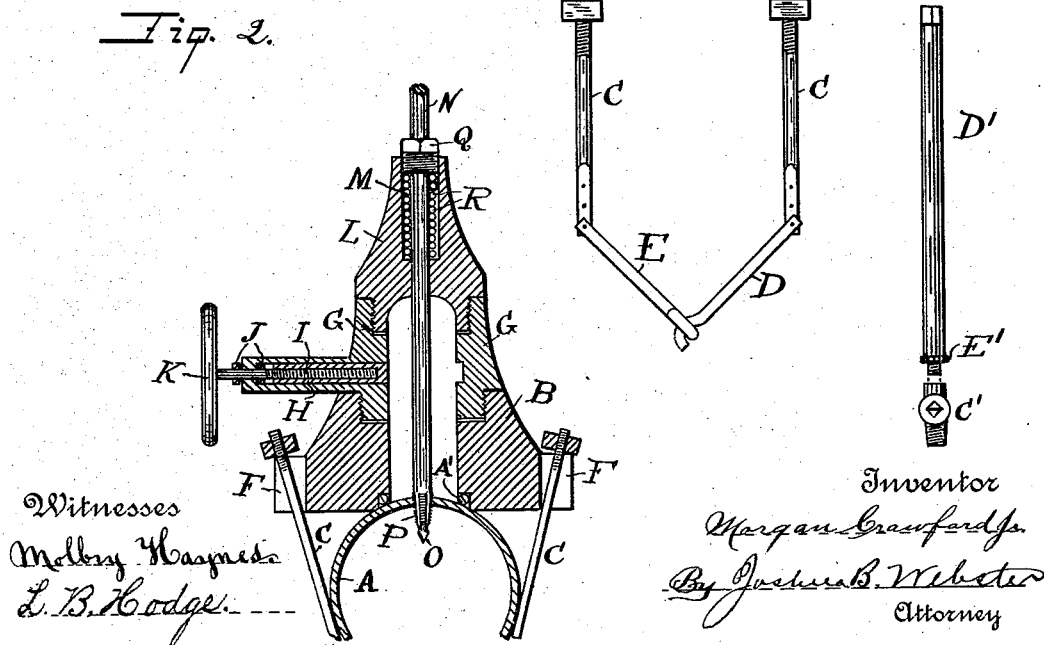
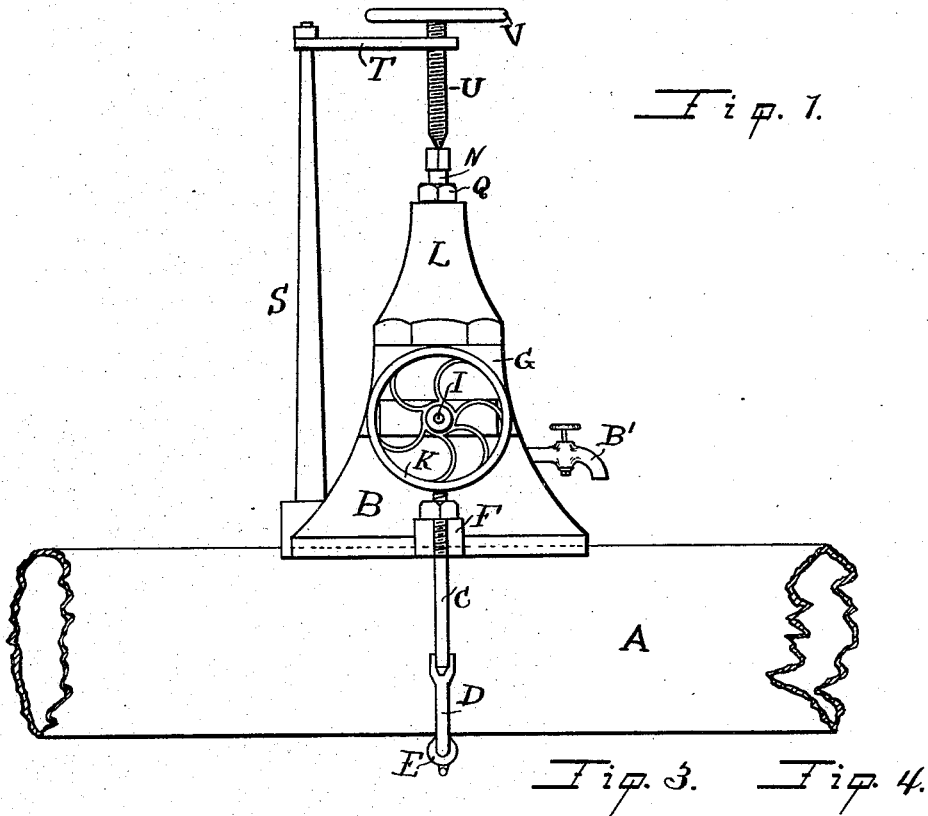


(No Model.)

M. CRAWFORD, Jr.  
TAPPING MACHINE.

No. 522,654.

Patented July 10, 1894.



# UNITED STATES PATENT OFFICE.

MORGAN CRAWFORD, JR., OF STOCKTON, CALIFORNIA, ASSIGNOR OF ONE-HALF TO GEORGE J. THOMPSON, OF SAME PLACE.

## TAPPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 522,654, dated July 10, 1894.

Application filed February 5, 1894. Serial No. 499,160. (No model.)

### *To all whom it may concern:*

Be it known that I, MORGAN CRAWFORD, Jr., a citizen of the United States, residing at Stockton, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Tapping-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in tapping machines such as are used in tapping water, gas, steam and oil pipes while the same are under pressure and it consists in the peculiar construction, novel combination and adaptation of parts hereinafter described and particularly pointed out in the claim appended.

In the accompanying drawings: Figure 1 represents a side view of my improved tapping machine in position to tap a pipe. Fig. 2 is a sectional view of the same. Fig. 3 is a detached view of the attachment used in securing my tapping machine to the pipe. Fig. 4, is a detail view of the service-pipe connection and the stem for inserting the same.

Similar letters of reference indicate corresponding parts throughout the entire views.

A represents a water, gas, steam or oil main and B represents a saddle mounted on such main and attached thereto by a jointed strap composed of two bolt-like rods C, which are provided with nuts and threads cut on their upper ends, and of lower parts D and E which are pivotally attached to the lower ends of the rods C, such parts D and E being provided, at their lower ends with a hook and eye respectively for the purpose as will be shown. The saddle B is provided on each side, with slotted ears F for the purpose of receiving the bars C.

G, represents a valve or gate-body, which is inserted in the top of the saddle B by means of a screw thread, such body being provided with a lateral boxing G', in which is arranged a slide gate H having an opening in the center of the same, for the admission of a screw

shaft I, such shaft I, having collars J for the purpose of maintaining such screw shaft in rigid position horizontally with relation to the body G, and such screw shaft I is provided with an operating hand wheel K.

L, represents a cap which is screwed to the top of the valve body G, such cap being provided with a stuffing-box M, within which a drill shaft N is inserted, such shaft N having the lower end formed into a drill O and having a tap P immediately above such drill O for the purpose of cutting threads in the opening after the same has been drilled.

Q represents a follower which is screwed into the top of the stuffing-box and which presses against rubber packing R.

S represents a vertical standard which is rigidly attached to one side of the saddle B, such standard extending above the cap L and having a horizontal arm T pivotally attached to the upper end of the standard S. Such arm is provided with a feed screw U and hand wheel V, the lower end of such screw engaging with the upper end of the shaft N.

A' represents a gasket which is inserted between the saddle B and pipe A to prevent any water from escaping while the pipe is being tapped.

B' is a faucet which is attached to the side of the saddle B for the purpose of ascertaining when the pressure is relieved, after a service connection C' has been inserted in the drilled pipe. Such connection is provided with a valve for opening and closing the same.

D' represents a stem having a collar E' near its lower end and a thread on the lower end of such rod for the purpose of guiding and inserting the service connection into the hole in the pipe A.

The mode of operating my improved tapping machine is as follows:—The saddle B is placed in position on the pipe A and the parts D and E are unhooked, passed under the pipe A and hooked, then the rods C are placed in position in the slotted ears F and the nuts are screwed down on the rods C until, by reason of the gasket A', no water, steam, gas or oil can escape. The drill rod N is then placed in position in the cap L and the follower is screwed down against the rubber packing R thus rendering the same tight and the cap L

is placed in position on the valve body G. The horizontal arm T and feed screw U are then swung into position and the hole is drilled and threads cut in the sides of such hole as shown in Fig. 2. The feed screw is then backed out sufficiently to disengage the rod N when the arm T is swung to one side and the drill rod is then raised above the valve H and such valve is closed by means of the screw rod I which valve prevents the water below the same from escaping. The cap L is then removed and the follower loosened; then the drill rod N is removed and the stem D' is placed in the cap L and the follower is screwed against the packing R. The service connection C' is placed on the lower end of the stem D', such connection C' having its valve closed, and the cap L is then placed into position, the gate H is then opened and the connection C' is pressed downward and screwed into the hole prepared for the same. The stem is backed out of the connection C' and the faucet B' is opened thus relieving the pressure in the tapping machine, when the same is removed.

I am well aware that it is old in main tapping devices to provide in conjunction with

a saddle having slotted ears, bolts adapted to be seated in the slots of the ears and having adjustable nuts and a chain connecting the lower ends of the bolts and adapted to rest beneath a main or pipe. I therefore make no claim to such construction, but

What I claim, and desire to secure by Letters Patent, is—

In a main tapping machine, the combination with a saddle adapted to rest on a main and having the slotted ears F; of the bolt-like rods C, adapted to rest in the slots of the ears F, and having threads for the engagement of adjusting nuts, the link E, flexibly connected to one of the rods C, and having an eye at its free end, and the link D, pivotally connected to the other rod C, and having a hook at its free end adapted to engage the eye of the link E, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MORGAN CRAWFORD, JR.

Witnesses:

JOSHUA B. WEBSTER,  
MOLBRY HAYNES.