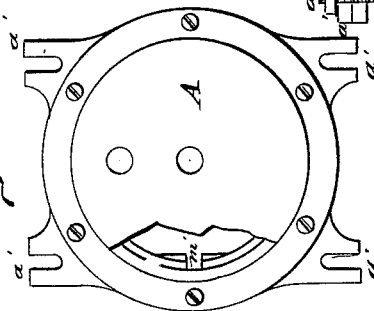
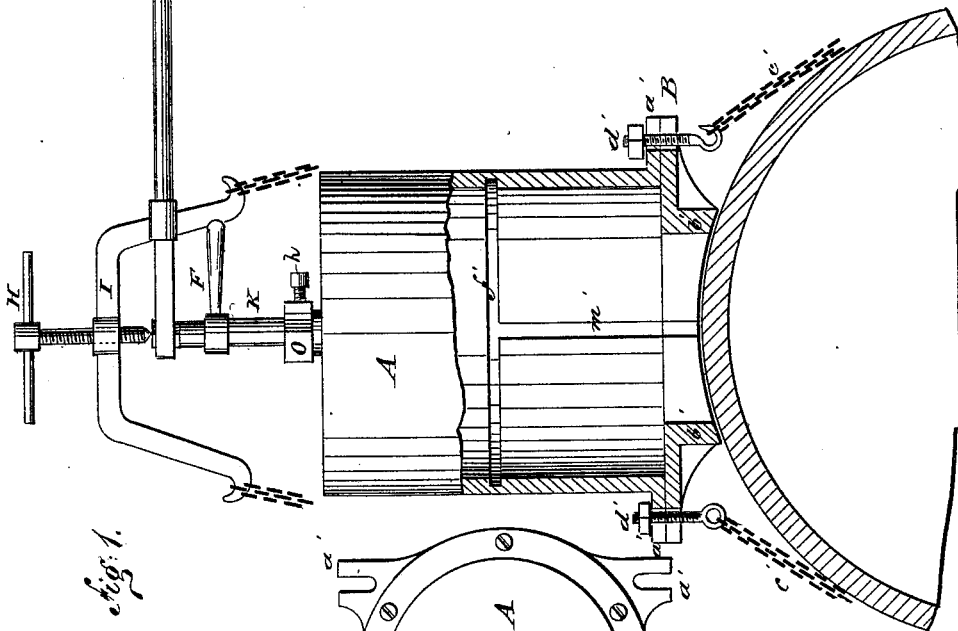
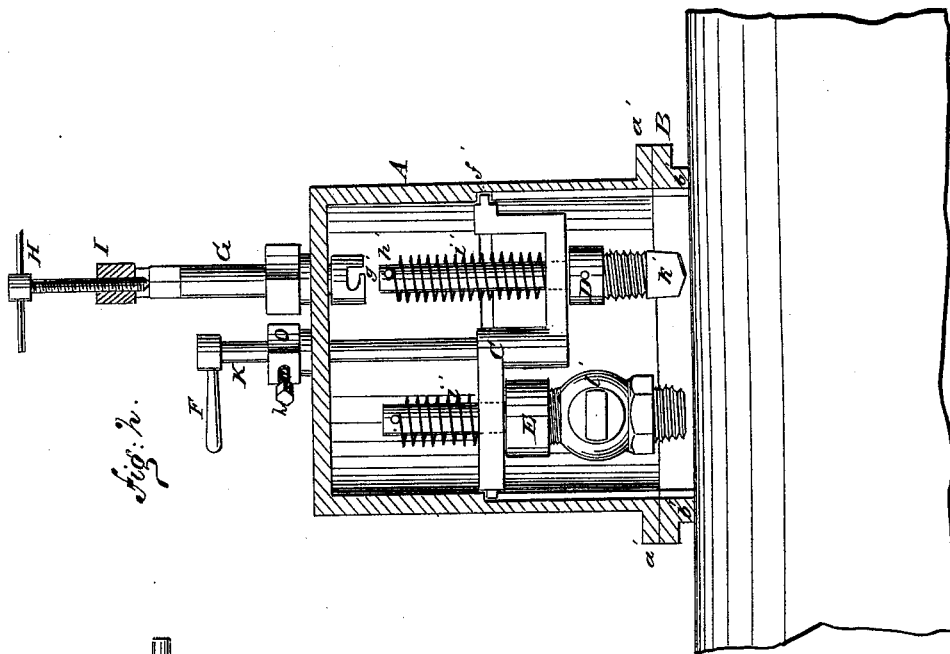


C. D. JUDD.
Machine for Tapping Water and Gas Mains.
No. 220,153. Patented Sept. 30, 1879.



WITNESSES:

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CHARLES D. JUDD, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR TAPPING WATER AND GAS MAINS.

Specification forming part of Letters Patent No. **220,153**, dated September 30, 1879; application filed March 18, 1879.

To all whom it may concern:

Be it known that I, CHARLES D. JUDD, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and Improved Machine for Tapping Water and Gas Mains, of which the following is a specification.

Figure 1 is an elevation of the machine, partly in section, and with some of its parts removed, attached to a main. Fig. 2 is a sectional elevation of the machine set upon a main. Fig. 3 is a plan of the machine with part of the top removed to show certain interior arrangements.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide an improved machine for tapping gas and water mains.

In the drawings, A represents a hollow cylinder, of iron or other suitable material, firmly fastened upon the bottom plate, B, that is furnished with four horizontal slotted ears, *a' a'*, and has a rectangular opening through it, around whose margin, on the under face of the plate, is a raised rim, *b'*, curved and shaped to fit upon a water or gas main.

When the machine is fitted upon a main ready for work, it is firmly secured thereto by the chains *c' c'*, that are held and drawn tight by the screw-bolts *d' d'*, which are held in the slots of the ears *a' a'*, and the joint between the main and the rim *b'* is well packed.

The spindle K is entered perpendicularly through the center of the top of the cylinder, and reaches about half down. To its lower extremity is attached the cross-head C, that carries on either arm the drill and tap spindle D and the cock-spindle E, while its upper end is furnished with a handle, F, by which the cross-head may be turned to bring either the tap or cock under the driving-spindle G.

The cross-head is guided in its circular motion by its extremities engaging in the groove *f'*, turned on the inner circumference of the cylinder.

When it is desired to operate the machine to tap a water or gas main, the proper tap and cock are inserted in their respective spindles, and the center spindle, K, and the driving-spindle G are drawn up as far as possible. Then the handle F is turned so that the

ends of the cross-head shall engage the vertical grooves *m'*, which are in a line coincident with the longitudinal axis of the main. The spindle K is then pushed down, so as to force the drill and tap in contact with the main, and is held in this position by a set-screw, *h*, that passes through the nut or collar O. The driving-spindle G is then pushed down, and its slot *g'* made to engage with the pin *h'* in the head of the drill and tap spindle. Then the feeding-screw H, which passes through the yoke I, that is held down by a rope, chain, or the like, is turned down upon the head of G, and a crow applied to the upper end of G, to force, by turning, the drill and tap *h'* into the main. The motion of the feeding-screw and driving-spindle is then reversed, and the drill and tap withdrawn from the main. The pressure of the set-screw is then removed from the spindle K, which is then drawn up and turned to swing the cross-head half round, so as to bring the cock *l'* directly over the hole in the main made by the drill, and this is effected with absolute certainty by moving the ends of the cross-head round in the groove *f'* until they can be entered in the vertical grooves *m'*. Then the driving-spindle is pressed down and engaged with the cock-spindle, the crow and feeding-screw H are applied as before, and the cock is screwed in the hole. The cock-spindle is then disengaged from the cock, the spiral spring *i''* aiding in the matter, by again removing crow and reversing motion of driving-spindle G, the cock-spindle being so formed as to release the cock immediately on reversing the motion of driving-spindle G, and the whole machine may then be removed from the main.

This machine may be made large enough to carry any size of drill and cock, and hence has a larger range of work than have other machines of the kind, and its operating parts work with more freedom from pressure. In cheapness, durability, facility of working, and lightness they are superior to all others.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, in a machine for tapping water and gas mains, of the cylinder A,

provided with the grooves *f' m'*, and the bottom plate, B, having a rectangular opening and slotted ears *a' a'*, the cross-head C, drill-spindle D, cock-spindle E, spindle K, driving-spindle G, and springs *i' i''*, substantially as herein shown and described.

2. In a machine for tapping water and gas mains, the combination of cross-head C, the cyl-

inder A, provided with grooves *f' and m'*, and the drill and cock spindles D and E, provided with spiral springs *i' and i''*, substantially as herein shown and described.

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