J. Drake.

Tapping Water Mains.

No. 30,051. Patented Sept. 18, 1860.

Fig: 2.

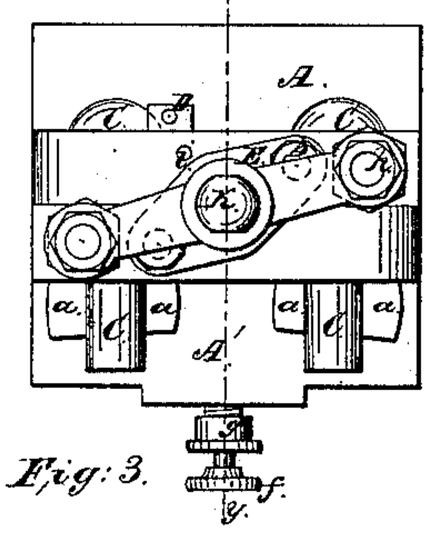


Fig: 3.

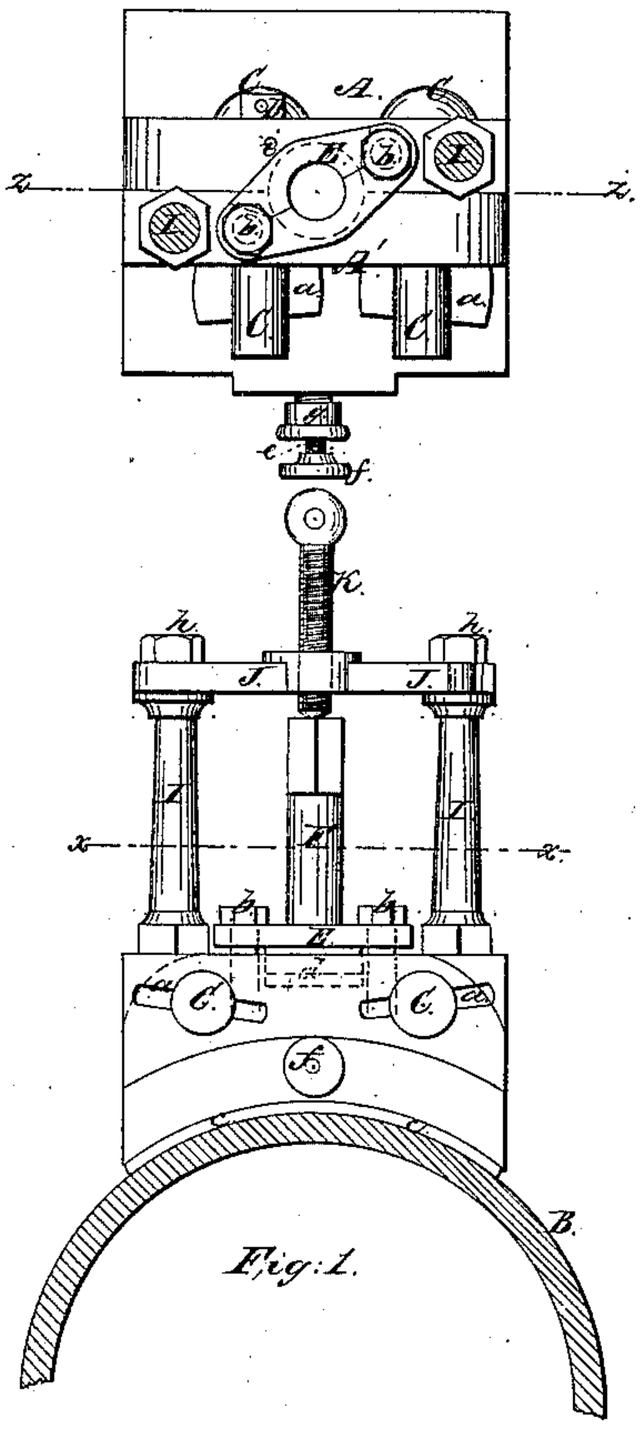


Fig: 1.

Fig: 6.

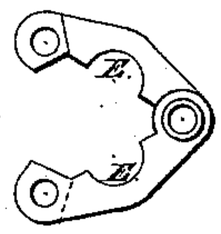


Fig: 4.

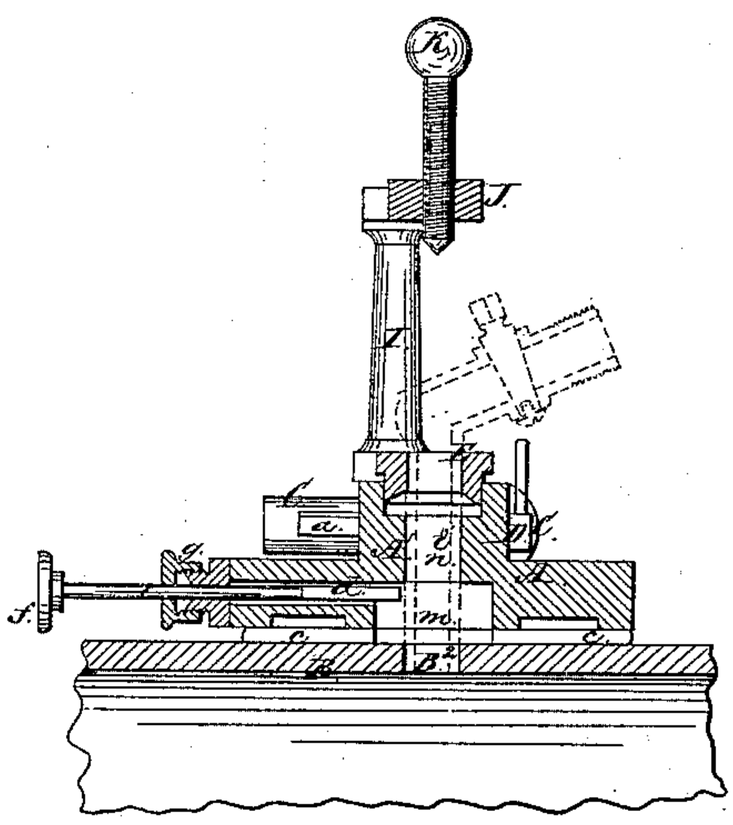
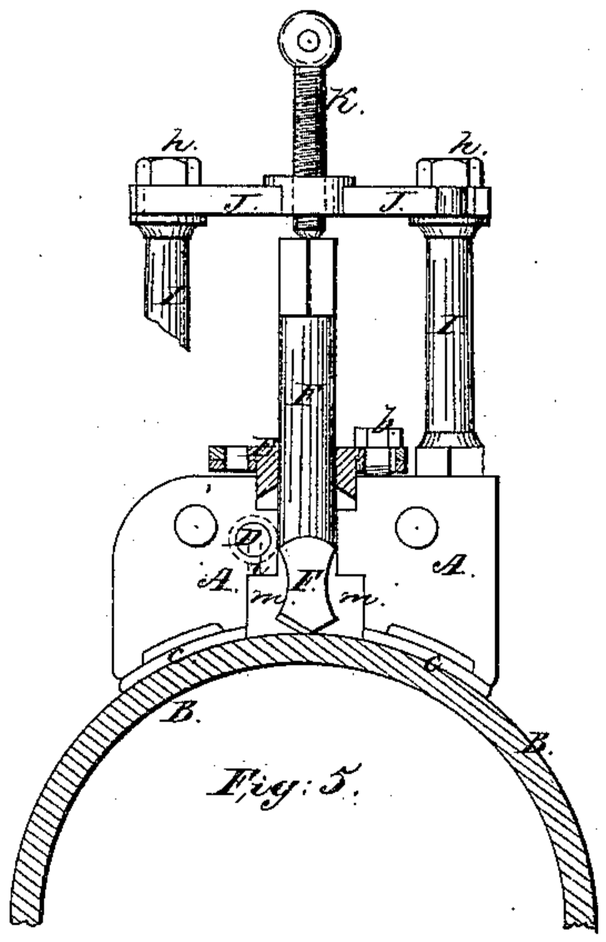


Fig: 5.



Witnesses:

L. E. Newton

J. McLain

Inventor:

Jacob Drake

by F. C. Lindsley his atty

UNITED STATES PATENT OFFICE.

JACOB DRAKE, OF NEW YORK, N. Y.

TAPPING WATER-PIPES.

Specification of Letters Patent No. 30,051, dated September 18, 1860.

To all whom it may concern:

Be it known that I, JACOB DRAKE, of the city of New York, in the county of New York and State of New York, have invented new and useful Improvements in Machines for Drilling and Tapping Pipes or Vessels Containing Vapors, Fluids, or Gases Under Pressure; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

My said improvements relate to that class of machines for tapping pipes or other vessels containing fluids under pressure wherein the drill acts on the pipe from within a chamber clamped to the pipe or other vessel for the purpose of preventing undue waste of the fluid when drilling or when introducing the service cock.

My said improvements are twofold. The first consists in making the chamber or cylinder, stuffing box, and gland surrounding the drill, in halves or in other words in dividing them into two sections each of which is a semicylinder the said sections being provided with suitable bolts and keys by which they are clamped together when boring and introducing the service cock and when the operation is completed may be separated and removed laterally from the cock, thus enabling an elbow cock or connection to be introduced which could not before be done by the aid of former machines without using a very large chamber.

The second part of my invention consists in combining with the drill chamber a passage way leading from below the check valve out of the drill chamber and opening into the drill chamber at a point above the check valve, said passage way being controlled by a stop cock or suitable valve. The object of this is to facilitate the removal of the check valve when under pressure by permitting the fluid to pass around to the upper surface. This I call an equilibrium valve, and passage way.

But more particularly to describe my said invention I will refer to the drawings by letters of reference.

Figure 1, is a side elevation of machine; Fig. 2, a plan view; Fig. 3, a horizontal section through red line *x x* Fig. 1; Fig. 4 a vertical section through *y y* Fig. 2; Fig. 5, a vertical section through *z*, *z*, Fig. 3; Fig. 6 detached view of divisible gland.

A, A′, represent the two parts of the base of the machine, each containing half the cylinder or chamber. The bottom is of a configuration conformable to the curve of the pipe B and is provided with concentric flanches which press upon the packing ring C, which may be of rubber or any suitable material. The machine may be clamped to the pipe in any suitable manner, various modes being well known to mechanics using such machines.

C, C, are bolts and, *a*, *a*, keys by which the parts A, A′, are clamped together.

n, is a cylinder or cavity half of which is formed in each part A, A′, and when clamped together fits the drill mandrel F. It is enlarged at *m*, to make room for borings, and also enlarged above to form a stuffing box in which is fitted the jointed or divisible gland E, E, which is furnished with screw bolts *b*, *b*, to make pressure on the packing in the stuffing box.

I, I, are two columns fixed in the opposite members of the base and holding the diagonal cross bar, J, in the middle of which is a set screw K, which acts on the drill. The drill has a square end for the purpose of slipping on a pawl wrench by which it may be operated.

d, (Fig. 5) is a check valve for the purpose of closing the chamber when the drill is removed. It is provided with handle *f*, stem *e*, and stuffing box and gland *g*.

D is a stop cock controlling the equilibrium passage, *i*, (Fig. 5).

When the hole for the service cock is made in the pipe, the drill is raised, the check valve interposed, the drill removed, the cross bar loosened from the heads of the columns, and there being a slot from the hole in one end of it permitting such action it is swung out of the way. The service cock is then introduced, the check valve removed, the equilibrium valve and passage being employed to facilitate the removal if the pressure be heavy, the cock driven down into the pipe or screwed down as the case may be.

To remove the machine the keys *a*, *a*, are driven out, the gland E released from its screw bolts when the parts A, A′ are free to be withdrawn from each other and from the service cock.

What I claim as my invention in machines for tapping pipes or other vessels containing fluids under pressure is as follows, viz:

1. The divisible chamber stuffing box and gland in combination with the machine substantially as described.

2. The equilibrium passage and valve in combination with the chamber and check valve substantially as described.

JACOB DRAKE.

Witnesses:

THOS. J. TRACY,

ISAIAH LEWIS, Jr.