A. LETZKUS.

DEVICE FOR TAPPING MAINS.

No. 174,542. Patented March 7, 1876.

Fig. 1.

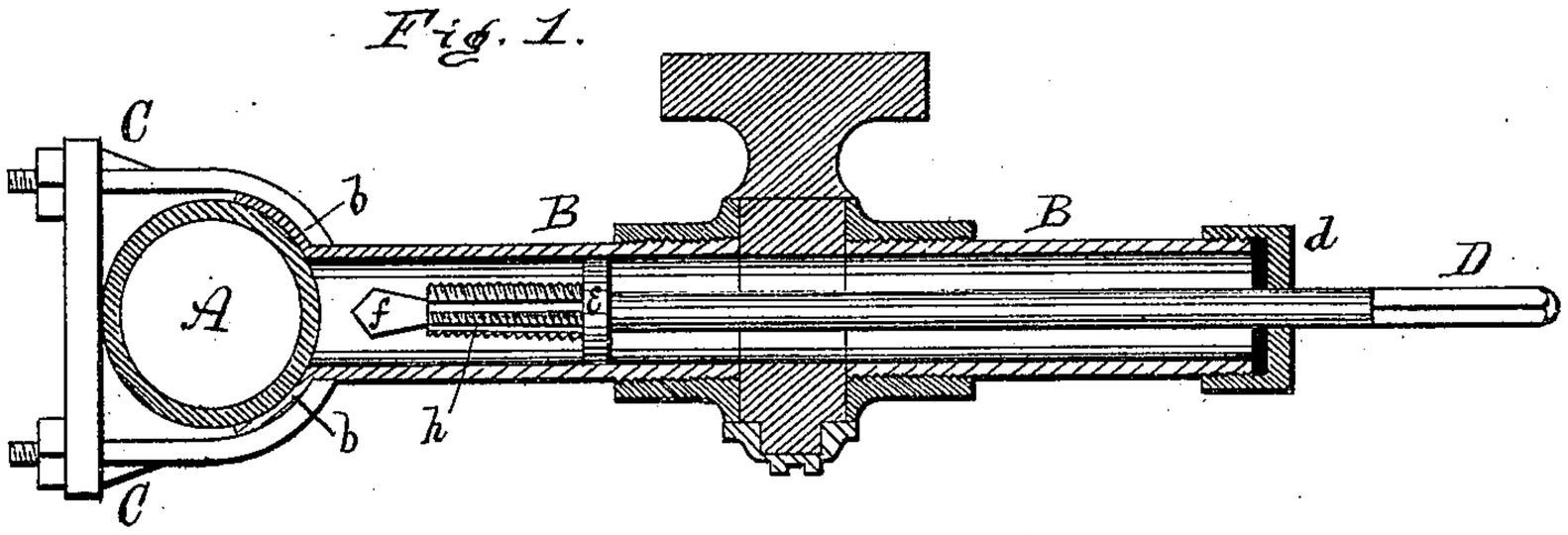


Fig. 2.

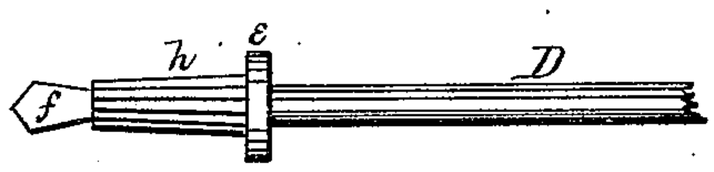


Fig. 3.

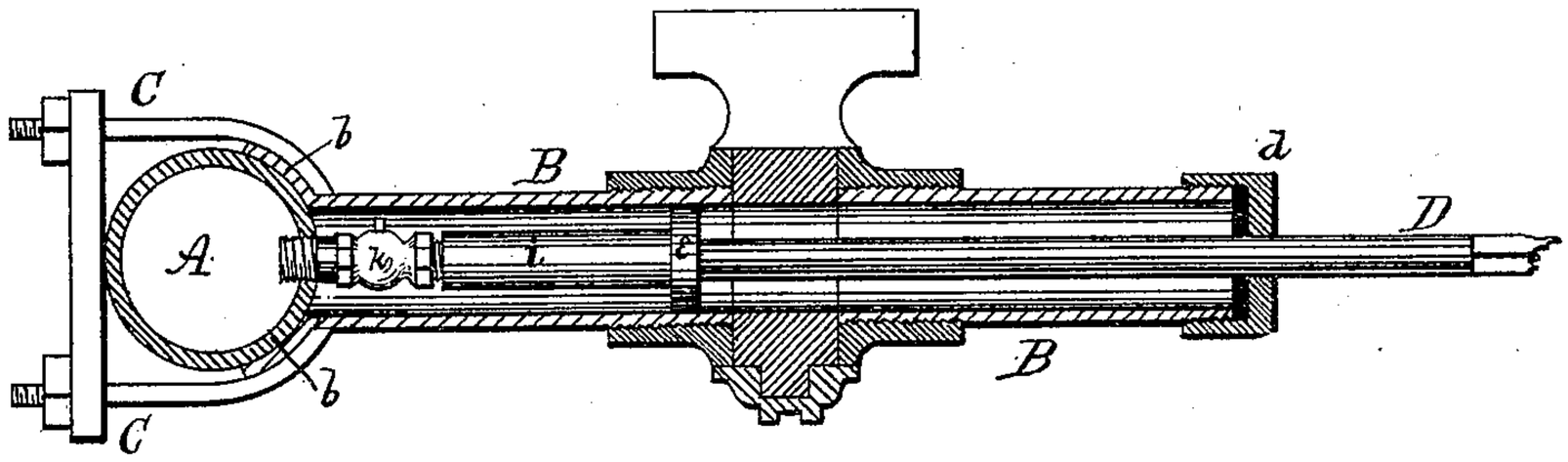
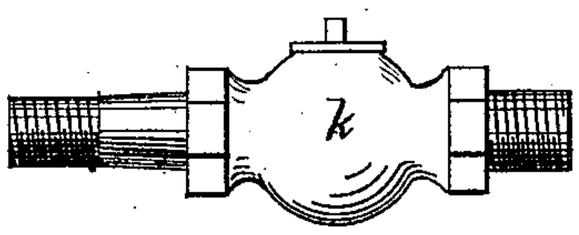


Fig. 4.



Witnesses

W. Williams

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UNITED STATES PATENT OFFICE.

ANTHONY LETZKUS, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN DEVICES FOR TAPPING MAINS.

Specification forming part of Letters Patent No. **174,542**, dated March 7, 1876; application filed July 20, 1875.

To all whom it may concern:

Be it known that I, ANTHONY LETZKUS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Tapping Mains; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figures 1 and 3 are central longitudinal sections of the apparatus embodying my invention. Fig. 2 is a view of the drilling and and reaming bit. Fig. 4 is a view of the service-valve.

My invention has relation to a machine for tapping mains and attaching service-pipe thereto; and it consists in the novel construction and combination of parts, as hereinafter described and specifically claimed.

For the purposes of my invention the end next the main is provided with a saddle of gum or other material, which passes under the clip and makes a tight joint around the point to be tapped. The other end of the valve section is threaded outside for the stuffing-box and drill-guide.

A drilling and tapping or reaming tool is made for every size of service, having a centering-shoulder near its cutting-end. This consists in a straight rod having an ordinary drill-bit on the end, but has also a threader or reamer immediately behind the drill, so that when the hole is drilled, or partially drilled, the threading begins. When the hole is cut and threaded the drill is withdrawn, valve shut, and the drill-rod, by means of a collar threaded on both ends interiorly, (on one end for the tap, and on the other for the ferrule or permanent valve,) is fitted to the permanent ferrule or valve, which is then inserted into the temporary valve-section, stuffing-box tightened on, valve opened, drill-rod passed through, and service-valve inserted into the main, either by driving or screwing; then drill unscrewed and apparatus removed, care having been taken to shut the ferrule-valve before insertion.

Reference being had to the drawings herewith, A is a main; B, the operating valve-section with its saddle *b* of gum or other material held to the main by the clip C. The section B is made large enough in interior diameter to admit any service-valve. On its outer end is a stuffing-box and drill-center, *d*. D is a drill-rod furnished with centering-shoulder E, drill *f*, and reamer or threader *h*. On the threader screws a cylinder or collar, *i*, threaded inside at both ends. On the end screwing into the threader there is a jam-pin or shoulder to prevent it from screwing up tight on the threader, so as to be easily taken off. Into the other end screws the service-valve or ferrule *k* for insertion. This, on the end to be inserted in the main, is provided with a screw-thread and inclined smooth surface behind the screw portion, so as to be either driven or screwed. Sometimes the hole is reamed in the main, and the ferrule driven into it. This can be done with my device by simply driving on the end of drill-rod when the ferrule is ready for insertion.

The *modus operandi* is as follows: The section B is placed with its saddle on the main at the point to be connected, and held there by the clip C. Then the drill-rod is inserted, and the hole drilled and tapped or reamed, after which it is withdrawn past the valve in section B, and the valve shut. Then the drill is entirely withdrawn and fitted with the collar *i* and permanent ferrule *k* with its valve closed, after which it is inserted as far as the valve. Then the stuffing-box is screwed on, after which the valve in section B is opened, and the device pushed in as far as the tap, when the service-valve is screwed or driven into the main by turning the drill-rod or driving it. The jam on the latter prevents the ferrule from becoming too tight in the cylinder *i*. Then the latter is unscrewed from the valve *k*, and the whole apparatus removed, after which the laying of the service-pipe is proceeded with.

What I claim as my improvements are as follows:

1. In combination with the threader *h* on the drill-rod, the sleeve *i*, adapted to hold the service-valve *k*, as specified.

2. In combination with the valve-section B, terminating in, and formed with, the luting-saddle *b*, the arched clip C, embracing said luting-saddle, and having a central opening, through which passes the section B, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of July, 1875.

ANTHONY LETZKUS.

Witnesses:

THOS. J. MCTIGHE,

PETER KREUTER.