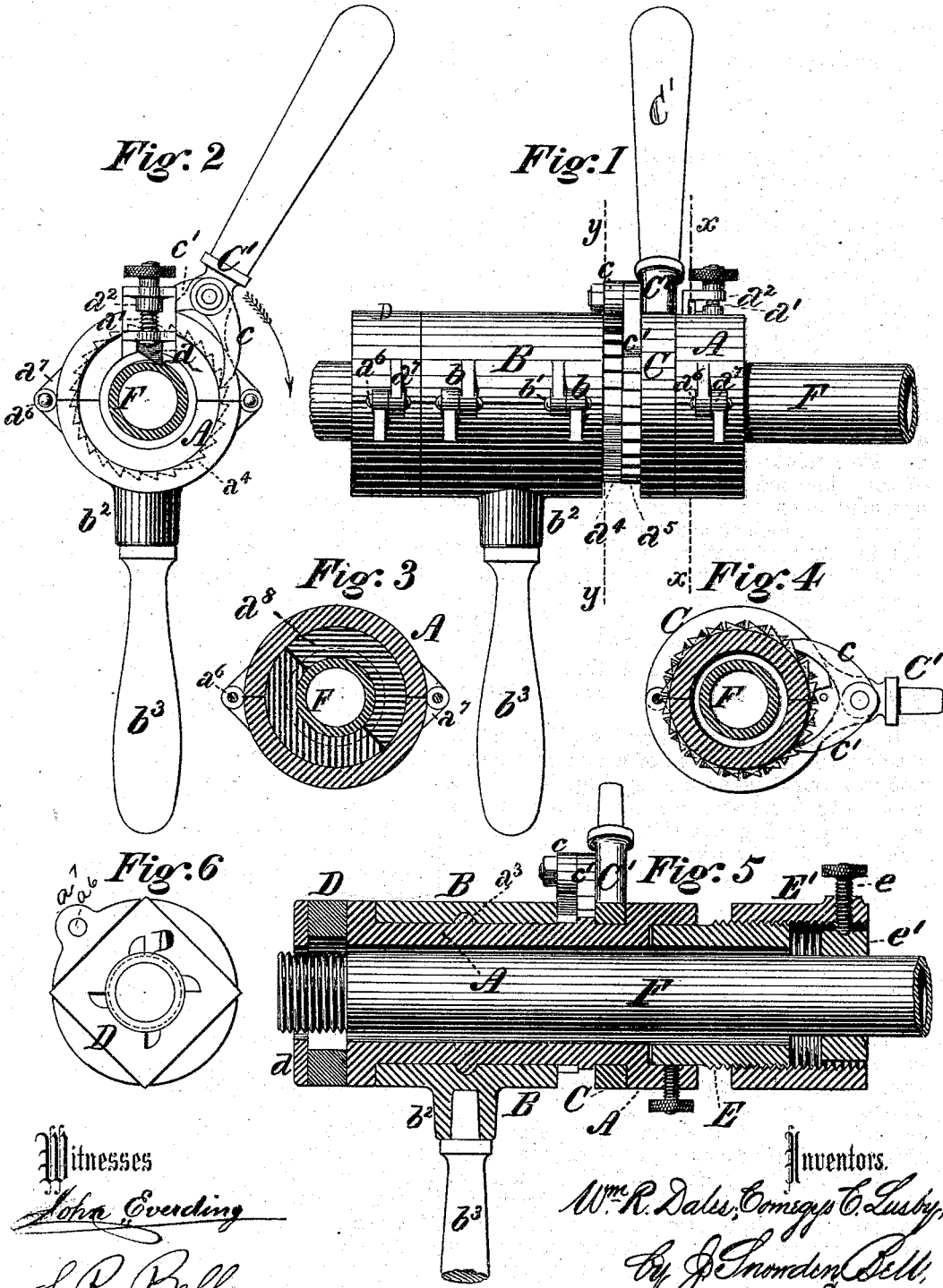


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PIPE-CUTTER.

No. 182,174.

Patented Sept. 12, 1876.



Witnesses
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UNITED STATES PATENT OFFICE

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IMPROVEMENT IN PIPE-CUTTERS.

Specification forming part of Letters Patent No. 182,174, dated September 12, 1876; application filed August 2, 1876.

To all whom it may concern:

Be it known that we, WILLIAM R. DALES, and COMEGYS C. LUSBY, both of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Pipe-Cutters, of which the following is a specification:

The object of our invention is to provide a device for cutting and threading gas and other metallic pipes, which shall, within small compass, and by the employment of simple mechanism, have the capacity of adjustment upon a pipe at any point in its length without breaking joints or disturbing the remainder of the pipe, and which can be conveniently operated when in close relation to adjacent objects; to which ends our improvements consist in the combination of a tubular socket divided longitudinally from end to end, and carrying a cutting tool or tools, and a die or dies, a divided clamp or casing surrounding the socket, and mechanism for rotating the socket back and forth, and cutting tool or die upon the pipe, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a side view, in elevation, of a pipe-cutter embodying our improvements; Fig. 2, an end view; Fig. 3, a transverse section at the line $x x$ of Fig. 1; Fig. 4, a similar section at the line $y y$ of Fig. 1; Fig. 5, a longitudinal central section; and Fig. 6, an end view of the screw-cutting die.

To carry out the object of our invention, we provide a cylindrical tubular socket, A, the internal diameter of which is sufficient to admit easily the pipe to be operated upon, which socket is divided longitudinally into two sections, and is formed with a counter-bore or recess of greater diameter at one or both of its ends. A cutting-tool, a , is connected adjustably to the socket, so as to have the capacity of being moved toward and from its axis—in this instance by a screw, a^1 , working in a nut, a^2 , on one of the sections of the socket. A similar cutting-tool may be placed upon the opposite section, if deemed expedient. The two sections of the socket are united by pins a^3 passing through lugs a^4 , and the socket, when closed, is encircled by a divided clamp or casing, B, within which it fits easily, and

by which it may be supported, end motion being prevented by a circular bead, a^5 , on the socket fitting a corresponding groove in the casing. The halves of the casing are provided with lugs b , through which pins b^1 , by which they are hinged together, pass. A socket, b^2 , is formed on one of the halves of the casing B, for the insertion of a handle, b^3 , for holding the same, or the handle may be formed directly on or in one piece with the clamp, if preferred.

A collar, C, formed in two sections hinged together, encircles the socket A near one of its ends, and is provided with a handle, C' , by which it may be rotated thereon. Pawls $c c'$, pivoted to the collar C and extending in opposite directions, engage respectively with ratchets $a^4 a^5$ formed upon the socket, so that the latter may be turned in either direction, as required, by the handle C' . Instead of the pawl-and-ratchet mechanism shown, the socket might be arranged to be turned by a wrench, if preferred, but we deem the arrangement shown to be more convenient and desirable. Divided thimbles a^6 , of different thicknesses, may be inserted within the socket, to adapt it to pipes of smaller diameters.

For the purpose of cutting threads upon the outer surface of a pipe, a screw-cutting die, D, is inserted in the recess or counter-bore of the socket A, at the end opposite that to which the cutting-tool a is attached, and can be secured in position either by set-screws or keys, or by having its sides squared and fitting a corresponding recess, with a cap, d , to retain it in position, as shown in Figs. 5 and 6.

In order to start the cut of the die D, and impart a longitudinal feed thereto, a collar, E, having an external thread for a portion of its length, of similar pitch to that of the die D, is inserted in the counter-bore of the socket A, at the end opposite that to which the die is secured, the thread of the collar E engaging a corresponding internal thread on a collar, E' , which is clamped fast to the pipe by set-screws e bearing on a thimble, e' , placed on the pipe.

In the operation of the device, in cutting pipe, the sections of the socket A are put together around the pipe F at any desired point, and the casing B and collar C fastened around

them, the casing B being held stationary, simply to support the pipe while it is cut, by engaging the pawl *c* with the ratchet *a*⁴, and rotating the socket within the clamp in the direction of the arrow; the tool *a* being fed inward, as required, until the cut is completed.

For cutting a thread upon a pipe, the collar E is secured to the socket A, (the tool *a* being first drawn out so as to be clear of the pipe,) and the die D is made fast in position at the opposite end. The collar E' and thimble *e'* being then clamped fast upon the pipe at such a point as will enable the threads of the collars E and E' to be in connection before the die commences its cut, the socket A is turned in opposite direction to the arrow by engaging the pawl *e'* and ratchet *a*⁵, carrying with it the die D and cutting the thread required.

By the use of our improvements we are enabled to cut and thread pipe at any desired point without necessitating the breaking of

joints or removal of other portions, while the small amount of projection of the socket and casing beyond the pipe, with the capability of adjusting the device thereon at any desired angle, enables it to be operated within contracted limits, and without interference from adjacent objects.

We claim as our invention and desire to secure by Letters Patent—

1. The divided collar C, having handle C', and pawls *c c'*, in combination with the socket A, provided with ratchets *a*⁴ *a*⁵, and cutter *a*, substantially as described.

2. The combination of the divided collar C, pawls *c c'*, socket A, ratchets *a*⁴ *a*⁵, die D, and feed-screws E E', as and for the purpose set forth.

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