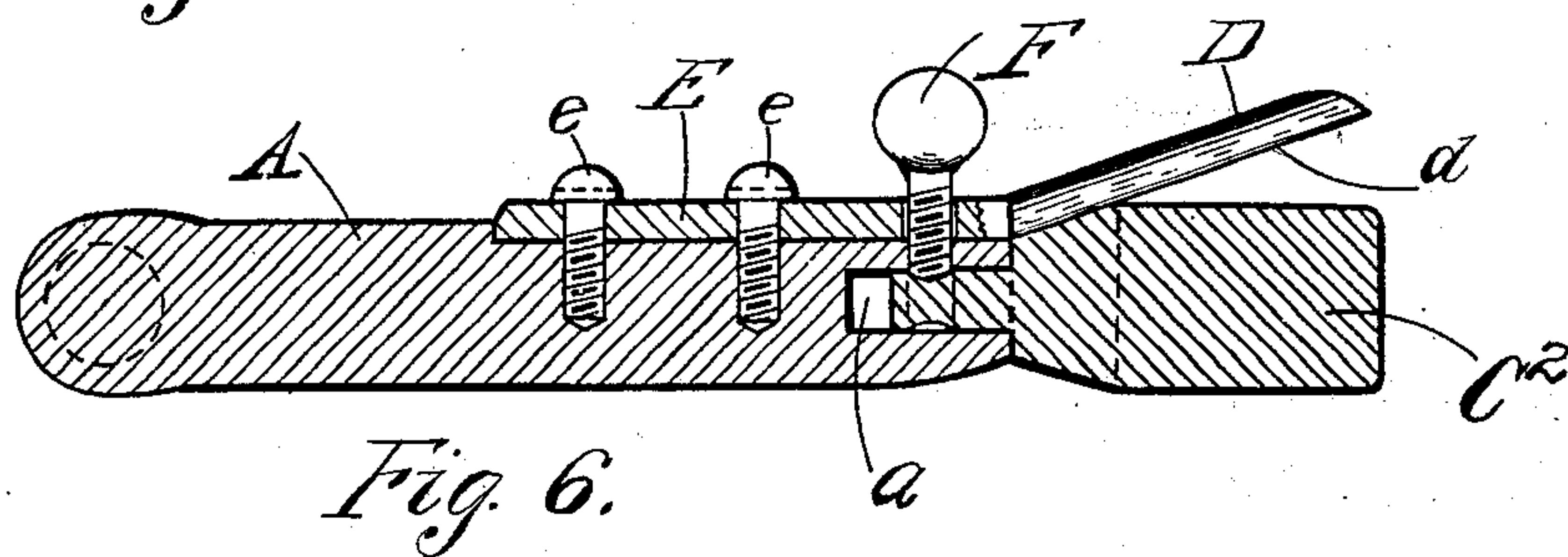
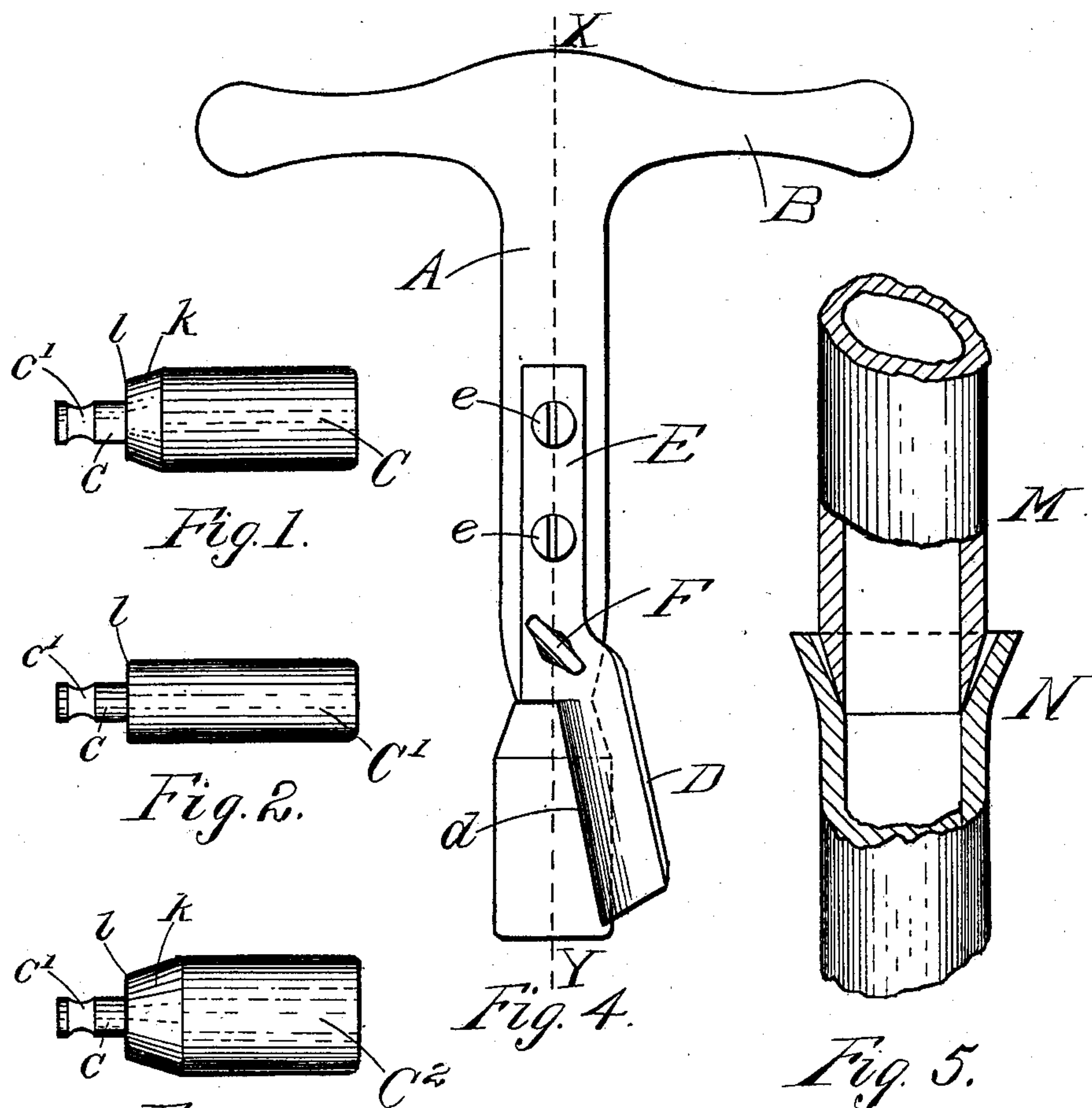


L. EMOND.
PIPE TRIMMING TOOL.
APPLICATION FILED AUG. 7, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses.
John H. Gately
John Jerome



Inventor.
Louis Emond
by Gardner W. Pearson
Attorney.

No. 746,312.

PATENTED DEC. 8, 1903.

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2 SHEETS—SHEET 2.

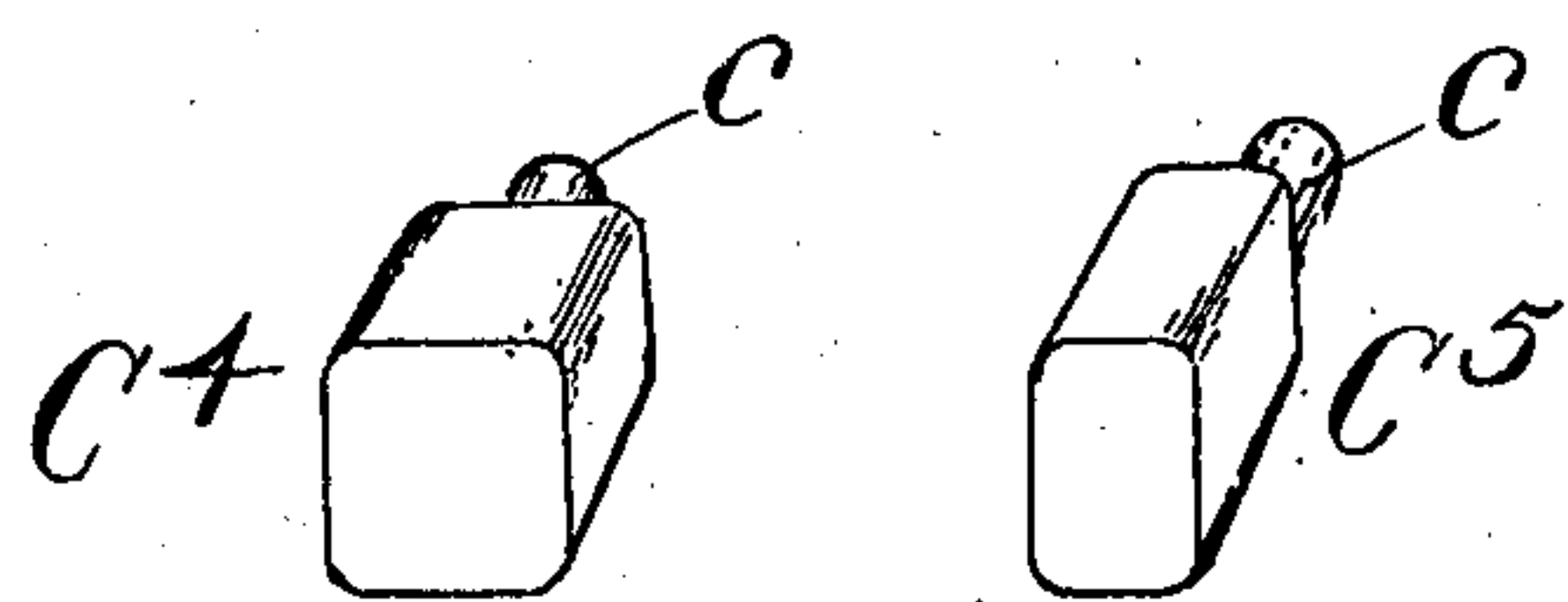
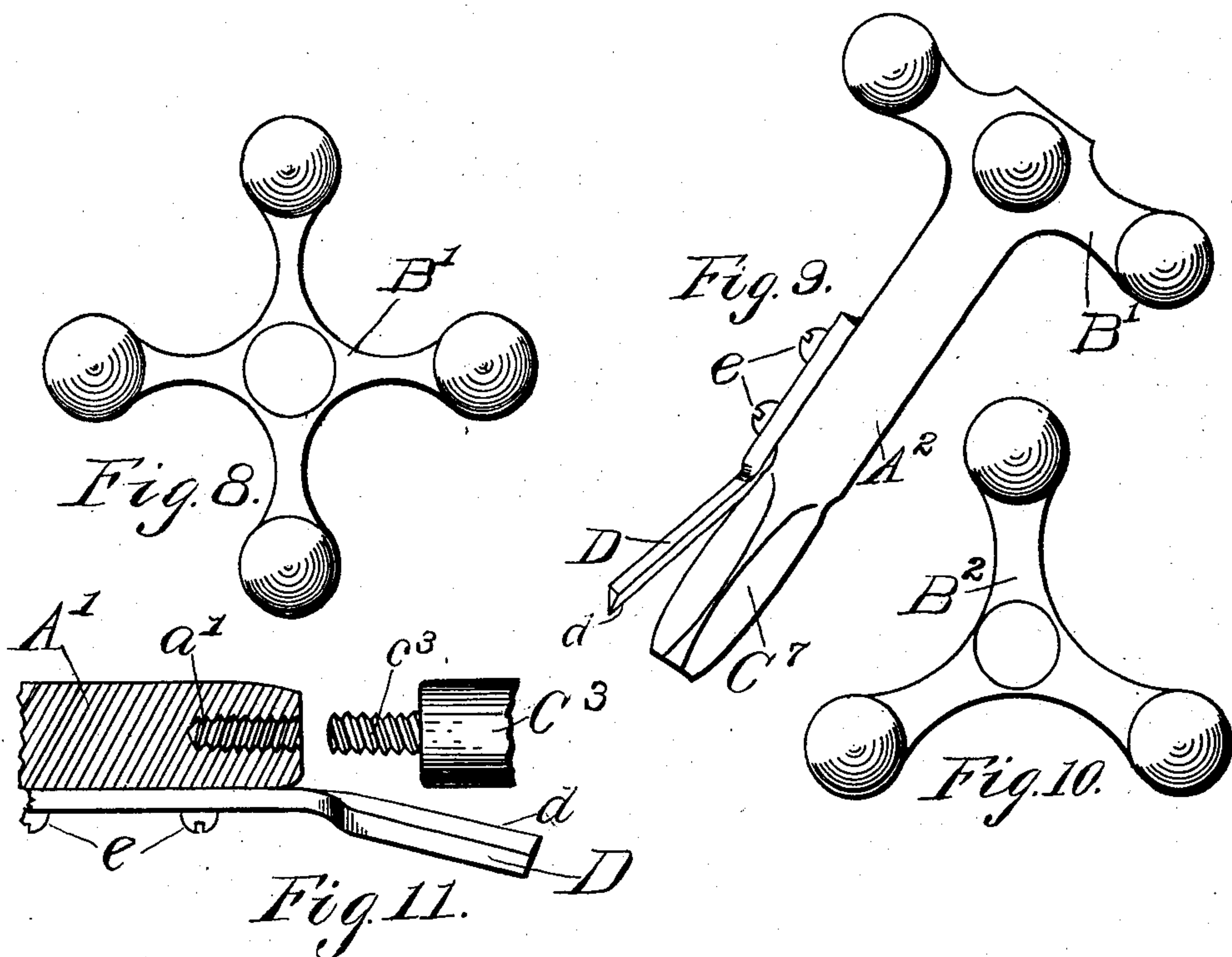


Fig. 12. Fig. 13.

Witnesses.

John A. Gately
John J. Brown

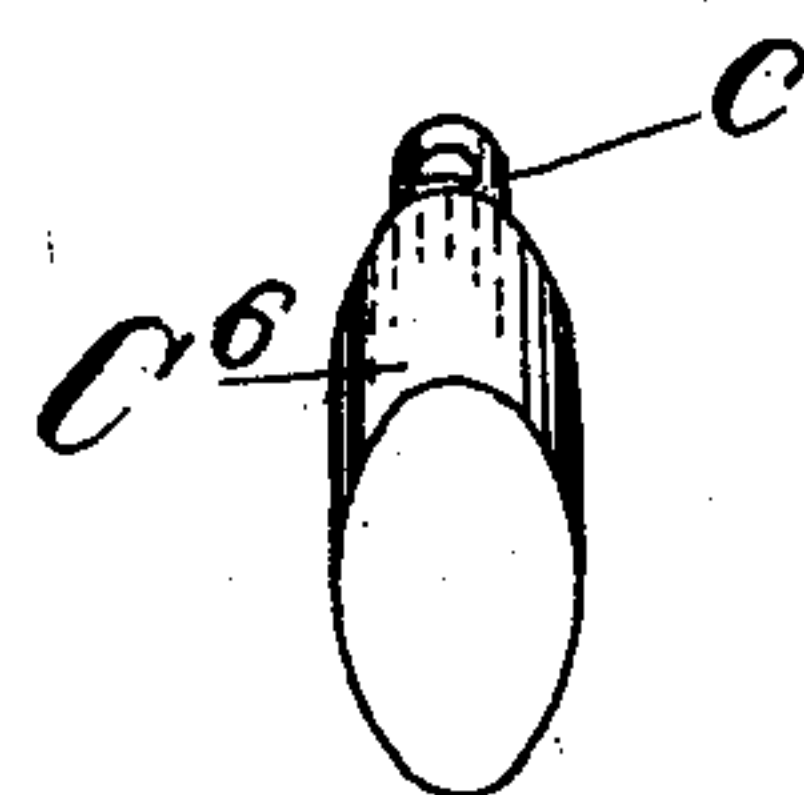


Fig. 14.

Inventor.
Louis Emond
by
Gardner W. Pearson
Attorney.

UNITED STATES PATENT OFFICE.

LOUIS EMOND, OF LOWELL, MASSACHUSETTS.

PIPE-TRIMMING TOOL.

SPECIFICATION forming part of Letters Patent No. 746,312, dated December 8, 1903.

Application filed August 7, 1902. Serial No. 118,836. (No model.)

To all whom it may concern:

Be it known that I, LOUIS EMOND, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pipe-Trimming Tools, of which the following is a specification.

My invention is an improved device for tapering the ends of soft-metal pipes, and is especially adapted to the use of plumbers in the process of uniting the ends of lead pipes by soldering. In so uniting the ends of pipes the usual method is to enlarge one of the ends, as N, Figure 5, to be united by rasping and filing to make the orifice into a trumpet shape, then by scraping or filing to reduce the end of the other pipe, as M, Fig. 5, to be united with the first until it has assumed the appropriate tapering form to fit into the first-named pipe. Solder is then applied to and about the joint.

The object of my invention is to simplify the process by providing a suitable tool for quickly and accurately cutting the outside taper. The tool is also so constructed that it generally prevents the cuttings from getting into the pipe, and thus obstructing the faucets, &c. I attain these results by the mechanism illustrated by the accompanying drawings, in which—

Figs. 1, 2, and 3 show studs of different sizes to fit the bores of different pipes. Fig. 4 is a plan view of the tool with a stud in place. Fig. 5 shows two pipes fitted to be united by solder or otherwise. Fig. 6 is a sectional view of the shank and cutter on the line X Y of Fig. 4. Fig. 7 shows another form of stud of a triangular shape. Fig. 8 shows another form of handle. Fig. 9 shows the handle of Fig. 8 and the stud integral with the shank. Fig. 10 shows still another form of handle. Fig. 11 shows a stud, of to which the small end is screw-threaded at c^3 fit interior threads a' of the shank A'. Figs. 12, 13, 14, C^4 C^5 C^6 show different forms of studs.

The shank A, of any suitable metal, is provided at one end with any suitable form of handle B, adapted to rotate the shank upon its axis, and at its other end it is provided with an orifice a of suitable depth to receive the small end c of the adjusting-studs C C' C^2 C^3 . The studs C C' C^2 at the larger end are of

cylindrical form and at this end are made of different sizes to fit the bores of different-sized pipes. The larger cylindrical studs taper slightly, as at k , to fit the slant of the cutting-blade D. In Fig. 7, C^3 , is shown another form of stud which may be used to advantage, especially upon jammed pipes, of which the opening is not a perfect circle. The one shown in Fig. 7 is substantially triangular with rounded edges; but an oblong, oval, or square stud (see Figs. 12, 13, 14) may be used, if desired, and may be of advantage with certain-shaped pipes. All these studs are formed with a squared shoulder l , which bears against the end of shank A. The smaller ends c of the studs C C' C^2 C^3 are of a uniform size to fit easily the orifice a in the end of shank A. The thumb-screw F projects into orifice a and fits into a suitable recess or annular groove c' in the small end c of the studs, whereby said studs may be firmly bound in place when inserted in orifice a .

Attached by suitable screws or rivets $e e$ to the outside of shank A, at the end thereof at which is the orifice a , is the knife or cutter E D, which is of such form as to present a cutting edge d at an acute angle to the axis of shank A and stud C. This cutter E D may be attached by screws, as shown, so that it may be detached for the purpose of sharpening or replacing by another cutter set at a different angle.

The operation is as follows: The small end of a stud of suitable size to fit the bore of the pipe which is to be cut is inserted in orifice a . It is fixed in place by set-screw F, and then the large end is inserted in the bore of the pipe to be tapered. This brings the cutting edge of E D in contact with the outer edge of the end of the pipe. As the tool is rotated by means of its handle, the cutter shaves the pipe in a manner similar to the well-known forms of pencil-sharpeners until the pipe has assumed the desired taper, when the tool is withdrawn and the pipe is ready to unite with a similar pipe, which has been treated to the internal tapering process. Where possible, it is an advantage to use the circular studs, as they are sized to fit the bore of the pipes operated upon quite closely, and their presence in the bore prevents the cuttings from working back in the pipes. If the

pipe is irregular in end section, a triangular or oval stud is to be preferred, as it is easier to insert and rounds out the pipe when rotated. Of course any other style of handle, 5 as B' in Figs. 8 and 9 or B² in Fig. 10, suitable for turning the shank may be used and the stud may be attached to the shank in other ways, as by being screw-threaded at the small end to fit interior threads in the shank, 10 as c³ a' in Fig. 11, or the shank and stud may be made integral, as A² C⁷ in Fig. 9; but the form shown in Figs. 1, 2, 3, 4, and 6 is preferred.

What I claim as my invention, and desire 15 to cover by Letters Patent, is—

1. In a pipe-cutting tool, the combination of a shank, a handle for rotating said shank, a cylindrical stud adapted to fit the bore of a pipe, and a cutter firmly attached to said 20 shank and provided with a cutting edge set at an oblique angle to the axis of the stud and extending at an oblique angle to said axis whereby when said tool is rotated an outside bevel will be cut upon the end of said pipe.

25 2. In a pipe-cutting tool, the combination of a shank, a stud adapted to be inserted in the bore of a pipe, a cutter firmly attached to said shank and provided with a cutting edge set at an oblique angle to the axis of the stud, and means for rotating said shank and 30 cutter about the axis of said pipe, whereby an outside bevel may be cut on the end of said pipe.

35 3. In a pipe-cutting tool, the combination of a shank provided with a suitable orifice at one end, a handle at the opposite end of said

shank, a detachable stud adapted at one end to be inserted in the bore of a pipe, and at the other end to fit in the orifice of said shank, a thumb-screw adapted to project into the 40 orifice in the shank and to fit into an annular recess in the smaller portion of the stud, and a cutter attached by screws to the end of the shank, so that its cutting edge will rest at an oblique angle to the axis of said detachable 45 stud.

4. In a pipe-cutting tool, the combination of a shank adapted to be inserted in the bore of a pipe, means for rotating said shank, and a cutter attached to said shank and set at an 50 oblique angle to the axis thereof whereby an outside bevel may be cut on the end of said pipe.

5. In a pipe-cutting tool, a shank provided with an orifice in one end, a handle attached 55 to the opposite end of said shank, an oblique cutter attached to said shank and projecting beyond the orifice therein, combined with a cylindrical stud of suitable size at one end to fit the bore of a pipe, tapered slightly to 60 conform to the edge of said cutter, provided with shoulder to set against the end of said shank, and reduced to fit the orifice in the shank, and a thumb-screw adapted to project into said orifice and into an annular recess 65 in said stud as described.

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

LOUIS EMOND.

Witnesses:

WALTER F. LEIGHTON,
FANNIE A. ADAMS.