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PATENTED AUG. 28, 1906.

J. F. IVARSON.

TOOL FOR RESEATING VALVES, COUPLINGS, &c.

APPLICATION FILED NOV. 17, 1904.

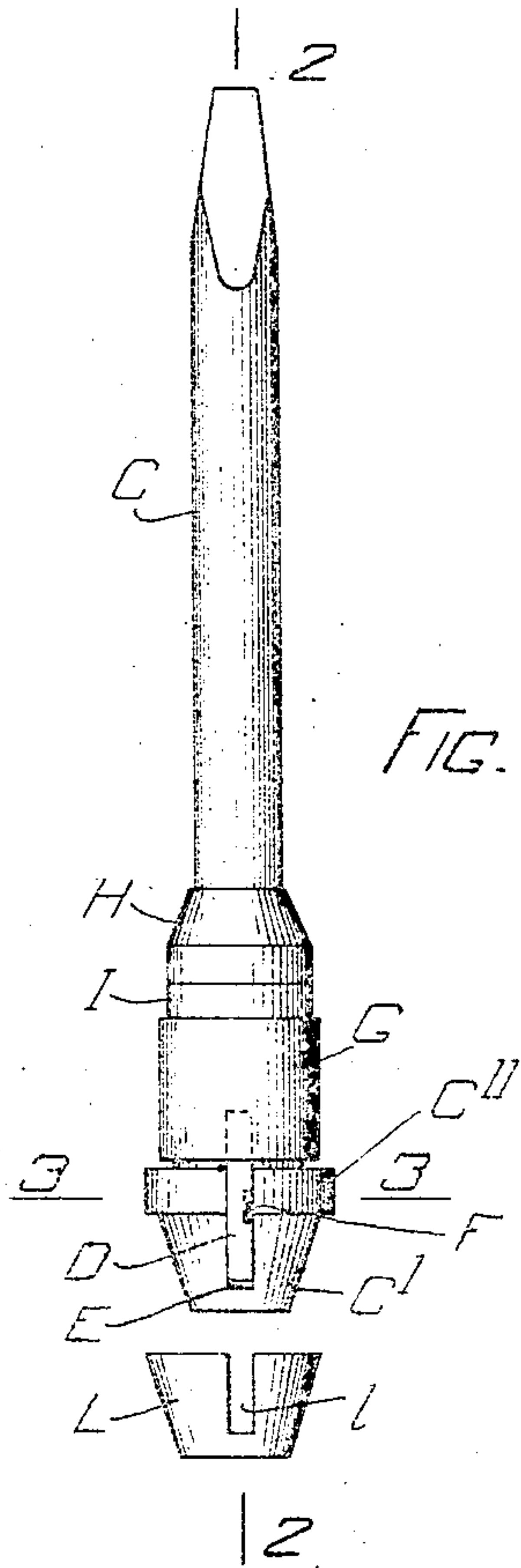


FIG. 1.

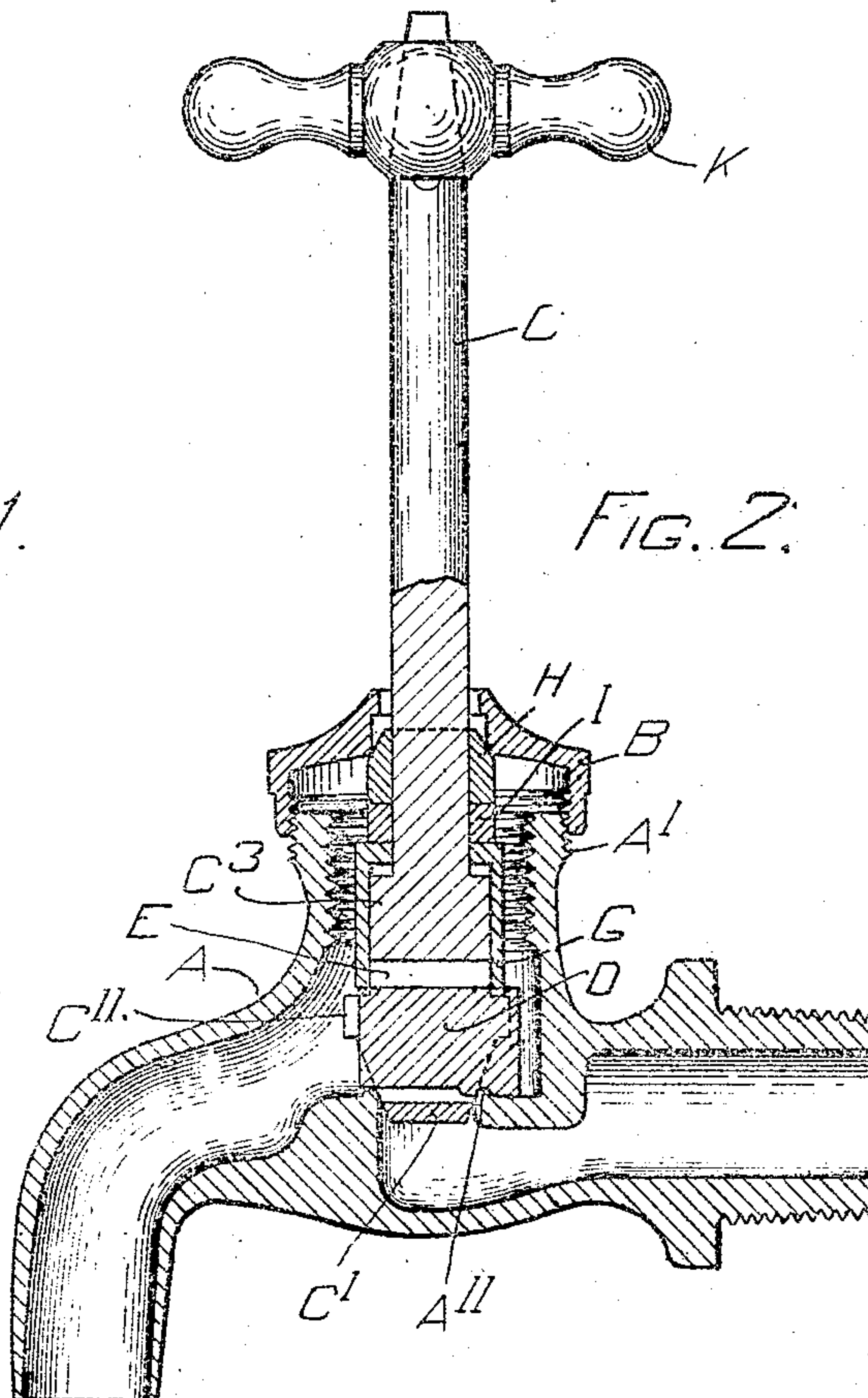


FIG. 2.

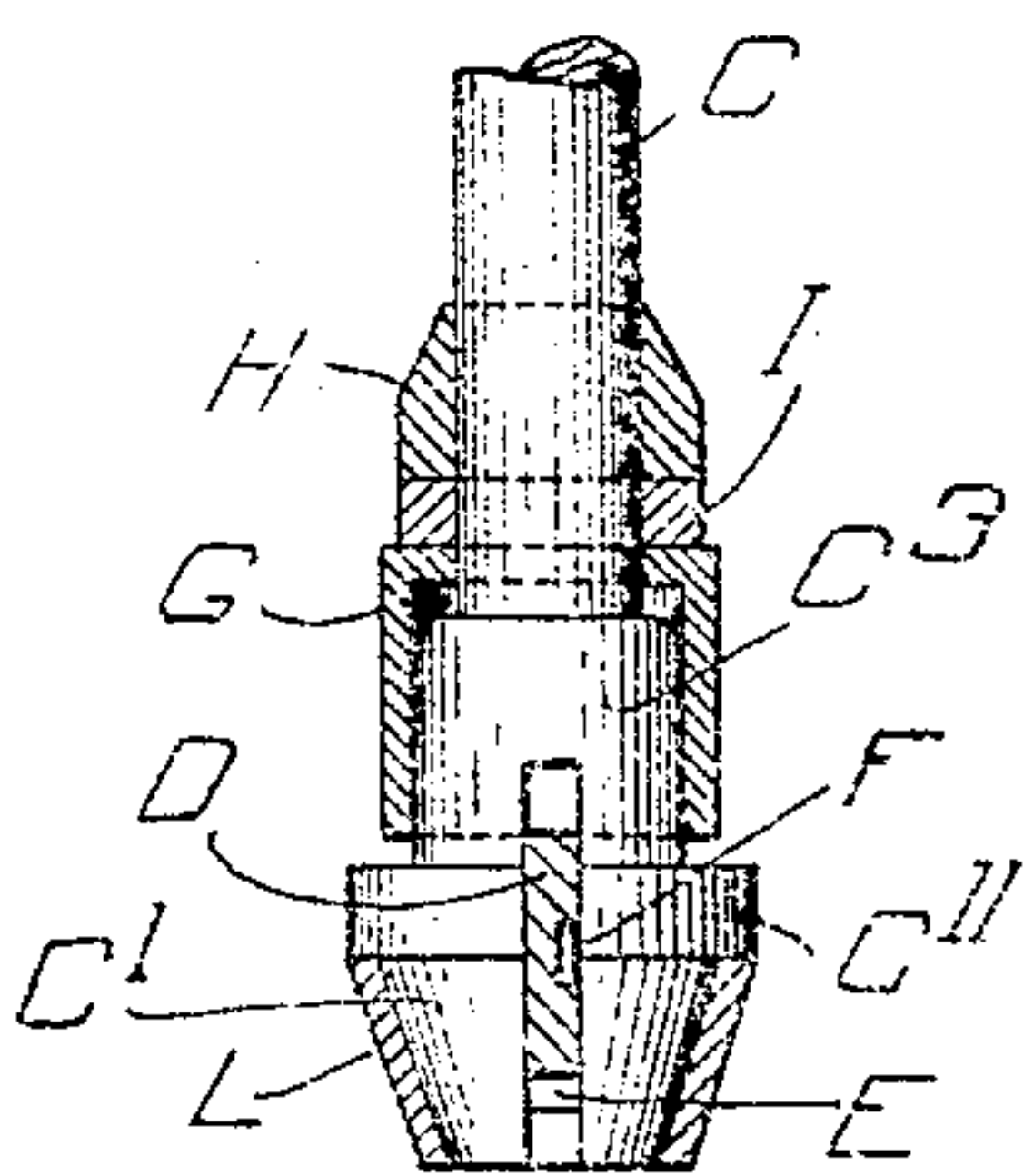


FIG. 4.

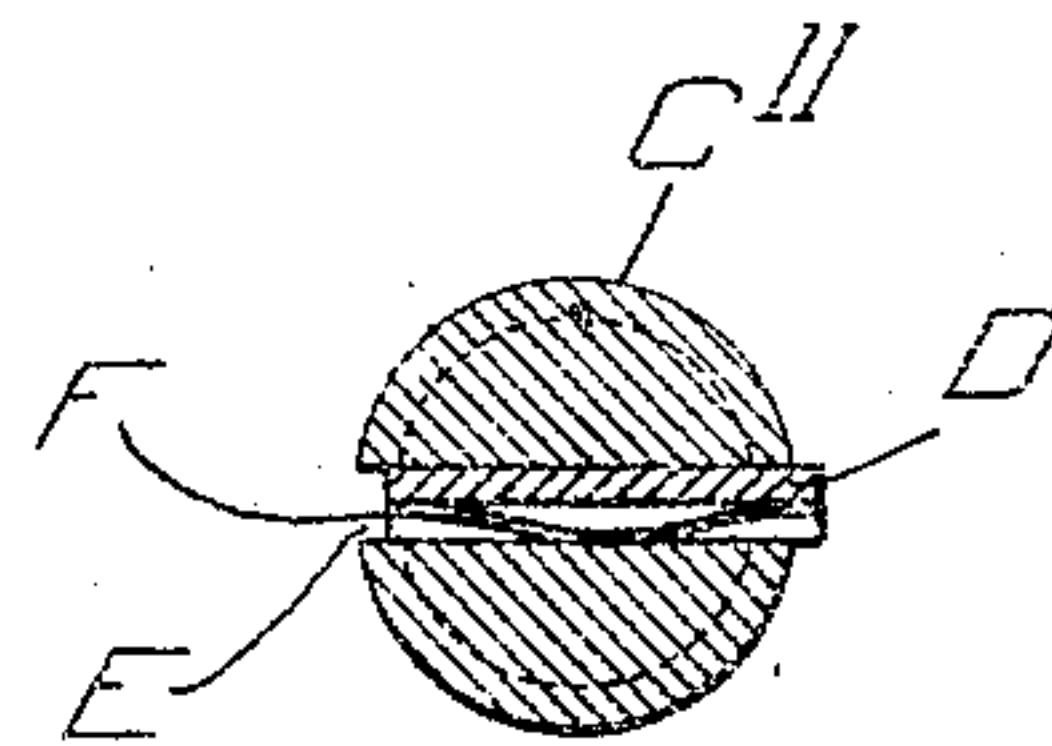


FIG. 3.

WITNESSES

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JOHN F. IVARSON, OF BOSTON, MASSACHUSETTS.

TOOL FOR RESEATING VALVES, COUPLINGS, &c.

No. 829,783.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed November 17, 1904. Serial No. 238,125.

To all whom it may concern:

Be it known that I, JOHN F. IVARSON, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Tools for Re-seating Valves, Couplings, &c., of which the following is a specification.

This invention relates to an improved tool for reseating seats for valves, couplings, &c., without the removal of the shell or case in which the seat is located, whereby such seat if worn can easily be made in proper condition to fit the valve, and the invention is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 is a side elevation of my device, showing detached an auxiliary ferrule adapted to fit the cone on the lower end of the device in case it is desired to use the tool for larger valve-openings than the solid cone. Fig. 2 is a section taken on the line 2 2 in Fig. 1, showing the device in operation on a faucet without the use of said auxiliary ferrule. Fig. 3 is a section on the line 3 3 in Fig. 1; and Fig. 4 is a sectional view of the tool, showing said ferrule in position on the cone.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In Fig. 2, A is a valve-case of a faucet or any well-known cut-off having an exterior screw-thread A' in its upper open end, onto which is adjustably connected the usual packing-nut B, which is centrally perforated, as usual, for holding the usual valve-stem in central position when the parts of the faucet are assembled for use.

A'' in Fig. 2 is the valve-seat, as usual. The invention consists of a spindle C, having a cone C' in its lower end, preferably provided at its upper end with an enlarged annular flange C'', as shown. That portion C'' of the spindle C immediately above the flange C'' is preferably slightly enlarged, as shown in the drawings, for the purpose of strengthening such portion, which is slotted, as shown at E, for the reception of the self-adjustable cutter-blade D, as shown. Such slit may extend downwardly through the end of the cone, as shown in Fig. 4, or only partially through the same, as shown in Figs. 1 and 2. In case of using an enlarged spindle for reseating large valves the shoulder C'' may be dispensed with or made of uniform size with the spindle C.

The self-adjustable cutter-blade D is adapted to be inserted in the transverse slot E when the device is in use, and for the purpose of holding said cutter in frictional yielding position in the slot I prefer to interpose between said cutter and interior of the slot a yielding spring F, as shown in detail in Fig. 3.

Surrounding the lower portion of the spindle is located a longitudinally-adjustable sleeve G, the lower end of which rests on the upper end of the said cutter-blade D, as shown. On the spindle is loosely located a cone-washer H, adapted to fit and bear against the lower edge of the centrally-perforated packing-nut B, so as to hold the spindle C in axial line relative to the valve-seat while the tool is in operation. Between the under side of the cone H and top of the sleeve G is located on the spindle C one or more washers I for the purpose of extending the cone H, according to the distance between the under side of the packing-nut B and the valve-seat, as shown in Fig. 2.

In using the device I first remove the nut B and the usual valve and its valve-spindle, after which I place the cutter in the slot E and adjust it in accordance with the size and shape of the valve-seat to be reseated. The cutter being laterally self-adjustable causes it to automatically fit the old valve-seat. I then place one or more washers I and cone H on the spindle C, as shown in Fig. 2, after which I place the nut B on the spindle C and screw the nut on the valve-case, so that the cutter bears slightly on the valve-seat and the cone H, centered in the central perforation of the nut B. I then place a handle K on the upper end of the spindle C, as shown in Fig. 2. I then rotate the spindle C and its self-adjustable cutter D, while at the same time I feed the cutter downward against the valve-seat by gradually turning the nut B until the proper reseating of the seat is effected.

In case it is desired to use the centering-cone C' for various sizes of valves, couplings, &c., I prefer to use in connection with the cone a detachable ferrule L, fitted around said cone, as shown in Fig. 4, such ferrule having a slot L, coinciding with the slot in the cone for receiving the self-adjustable cutter-blade.

What I wish to secure by Letters Patent and claim is—

1. A tool for reseating valve-seats, &c., consisting of a spindle having a conical, laterally-perforated end, a self-adjustable cutter lo-

5 cated in such perforation, a sleeve movably mounted on said spindle and resting on said cutter, and a perforated movable cone on said spindle and resting on said sleeve and adapted to be centered in an adjustable nut on the valve-case, as set forth.

10 2. A tool for reseating valve-seats, &c., consisting of a spindle, having a conical laterally-perforated end, a self-adjustable cutter, located in such perforation, and a cone located on said spindle and supported on the cutter, as set forth.

15 3. A tool for reseating valve-seats, &c., consisting of a spindle having a conical laterally-perforated end, a self-adjustable cutter located in said perforation, a movable cone located on said spindle and capable of acting against said cutter and a removable ferrule supported on the lower conical end of the spindle as set forth.

20 4. A tool for reseating valve-seats, consisting of a spindle adapted for insertion within a valve-casing and having a conical surface at the inserted end, there being a lateral perforation in the spindle at said end, a cutter projecting movably therefrom, and means

at the other end to center the spindle with respect to the valve-casing.

5. A tool for reseating valve-seats, consisting of a spindle adapted for insertion within a valve-casing and having a conical surface at the inserted end, there being a lateral perforation in the spindle at said end, a cutter projecting movably therefrom, there being a cone surrounding the spindle toward the other end, adapted to engage the valve-casing and center the spindle therein. 30 35

6. A tool for reseating valve-seats, consisting of a spindle adapted for insertion within a valve-casing and having a conical surface at the inserted end, a cutter supported by the spindle at the inserted end and projecting movably to an adjustable distance in a lateral direction from the spindle, and means at the other end to center the spindle with respect to the valve-casing. 40 45

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

JOHN F. IVARSON.

Witnesses:

ALBAN ANDRÉN,

CHARLES H. SMITH.