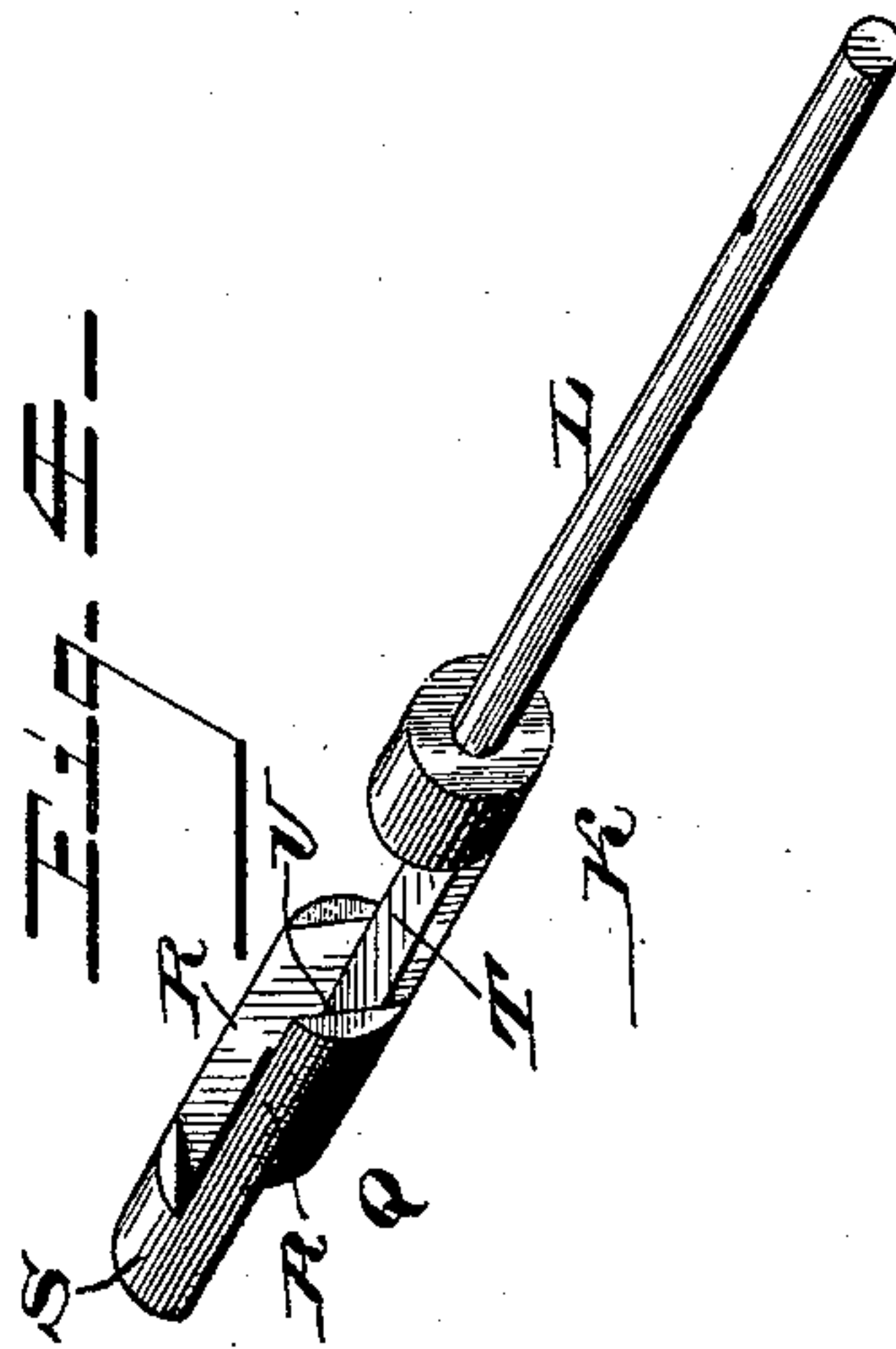
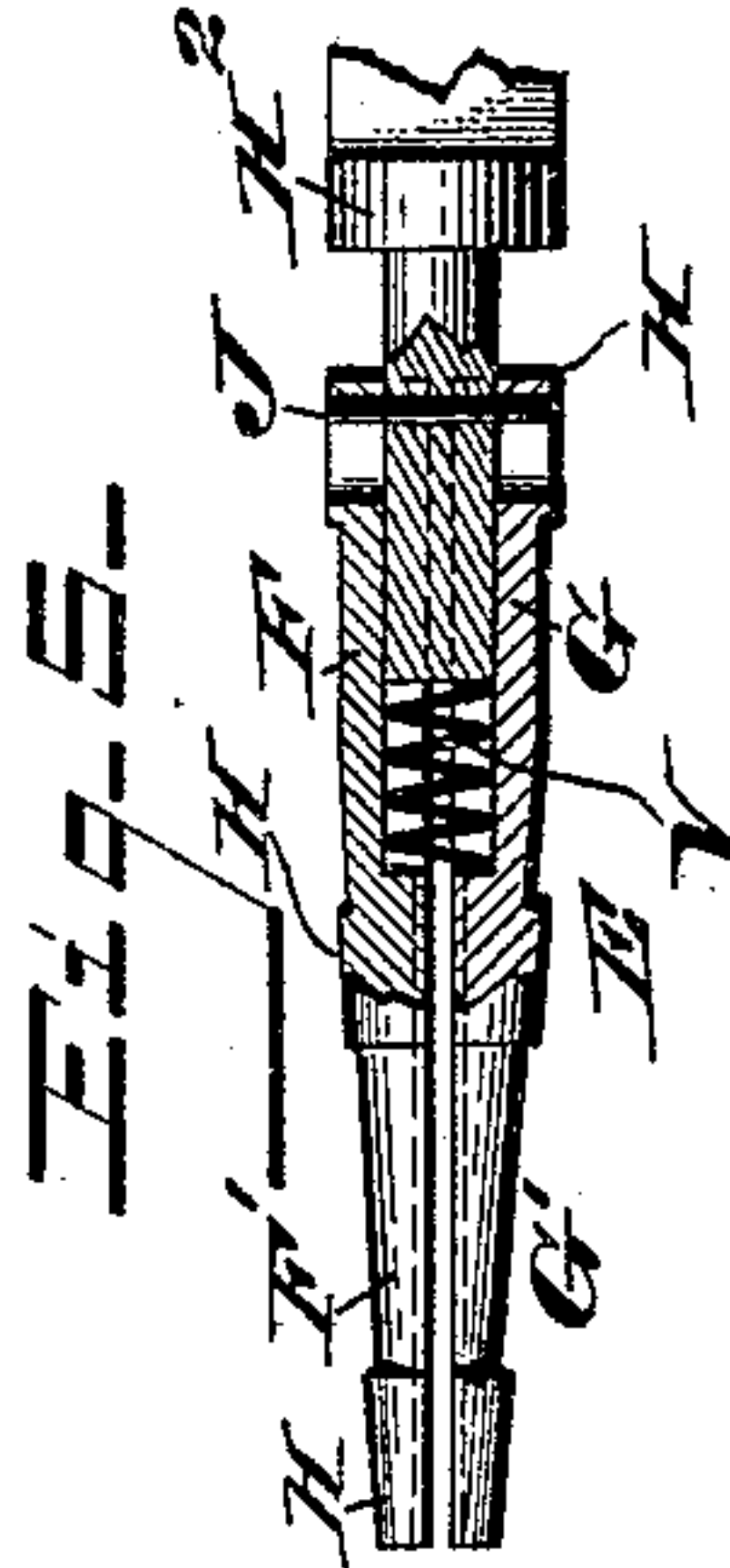
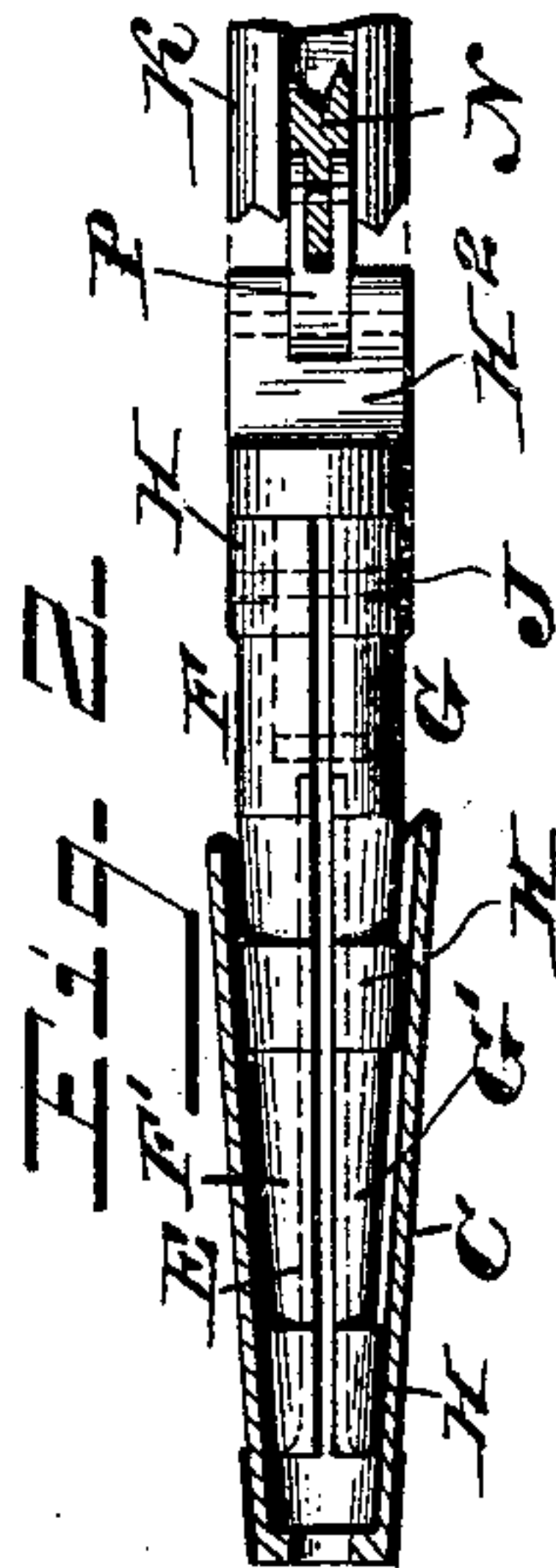
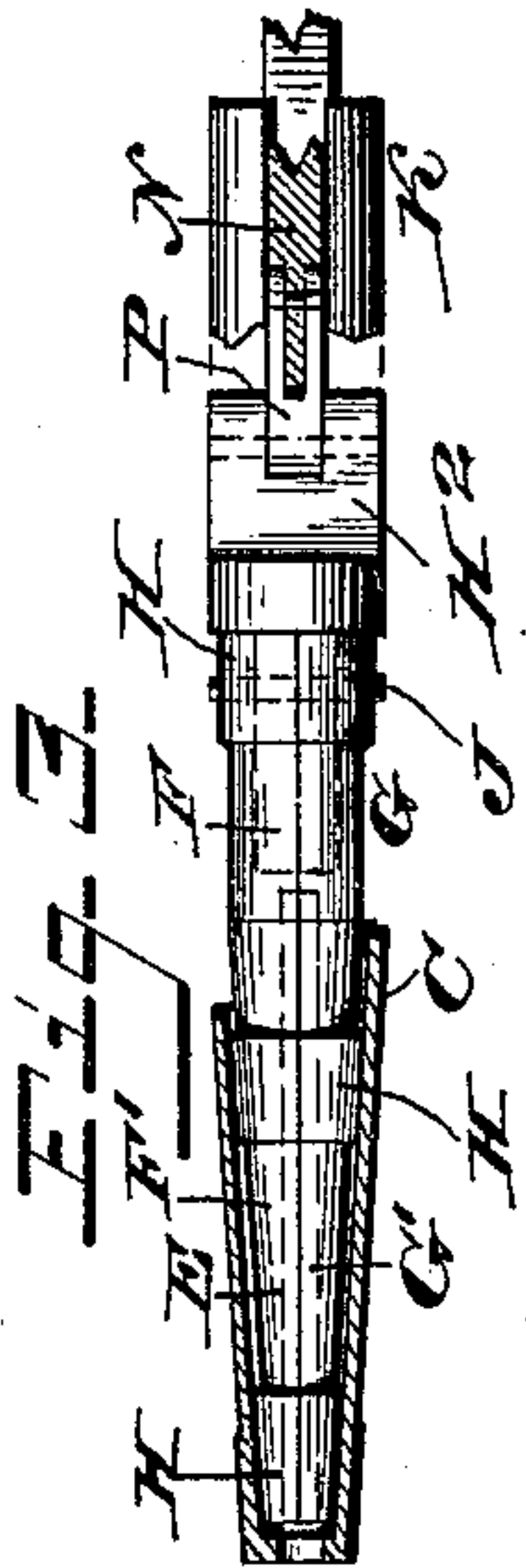
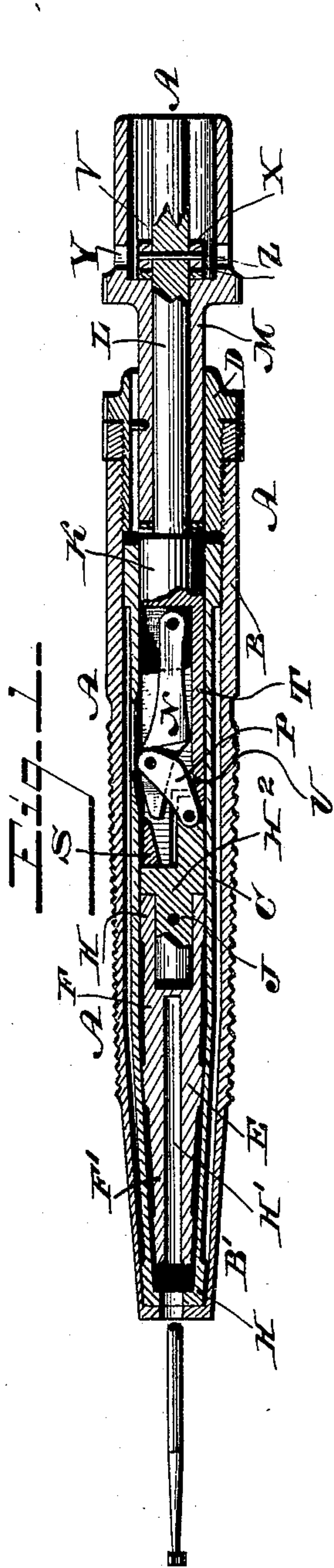


(Model.)

G., M. O. & J. G. REHFUSS.
TOOL HOLDER.

No. 478,943.

Patented July 12, 1892.



WITNESSES:

L. Douville,
A. P. Jennings.

Inventors:
George Rehfuß,
Martin O. Rehfuß,
John G. Rehfuß.
BY John A. Diederichsen
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE REHFUSS, MARTIN O. REHFUSS, AND JOHN G. REHFUSS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO HENRY D. JUSTI, OF SAME PLACE.

TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 478,943, dated July 12, 1892.

Application filed September 22, 1890. Serial No. 365,846. (Model.)

To all whom it may concern:

Be it known that we, GEORGE REHFUSS, MARTIN O. REHFUSS, and JOHN G. REHFUSS, citizens of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Tool-Holders, which improvement is fully set forth in the following specification and accompanying drawings.

Our invention consists of a novel tool-holder having a sleeve adapted to hold the shank of a tool and to be compressed by contact with an inclosing casing.

It further consists of the combination of parts hereinafter set forth.

Figure 1 represents a central longitudinal section of a tool-holder embodying our invention. Fig. 2 represents a view of a portion of the compressible sectional sleeve, the inclosing case being in section. Fig. 3 represents a view of the same parts, the sleeve and case being in different relative positions from those shown in Fig. 2. Fig. 4 represents a perspective view of the operating-spindle. Fig. 5 represents a modification of part of the device.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a tool-holder having an outer shell or casing B with a tapering or conical end B'. Within the shell B is an inner casing C, adapted to be revolved in said shell, which is secured therein by a screw-cap D, so as to prevent any longitudinal movement of the same.

Within the casing C is a compressible sectional sleeve E, corresponding in form to the inner face of the casing and consisting of the parts F and G, each extending longitudinally and having tapering ends F' G'. The said sections, which are normally separated longitudinally, are provided at intervals with enlarged portions H, adapted to contact with the inner face of the casing C, the other parts of the surface thereof between said portions H being free from contact with the said casing, so as to lessen the friction in operating the device. The sections have sockets H', adapted to receive the shank of the tool, the said shank passing through openings in the

ends of said shell and casing into said sockets. One end of each of the sections F G is connected with a head H² by a pin J passing through an opening in the section and entering the head, the pin being of such diameter as to permit a slight movement of the sections on the said head.

Fitting in one end of the casing C and adapted to slide therein is a head K, having a spindle L, which operates in a sleeve M, passing through an opening in the cap D. Pivotaly secured to the inner face of the casing C is one end of the member N of a toggle-lever, the other member P being pivoted to the head H². Forming a part of the head K and within the casing C is a piece Q with the sides R and a cross-piece S, the latter having an inclined under face adapted to contact with the outer part of the jointed end of the member N of the toggle-lever, and a connecting strip or neck T, having its forward end or portion between the sides R provided with an inclined face U, adapted to contact with the opposite side of the front end of the said member N from that contacted with by the cross-piece S.

To prevent the withdrawal or separation of the sleeve M from the device, the outer end thereof is enlarged and provided with an annular groove V, in which is located a collar X, secured to the spindle L by means of screws Z, which are inserted into said collar and spindle through openings Y in the sleeve, the heads of the screws being flush with the periphery of the collar, so that they do not interfere in the rotation of said collar and spindle within the sleeve.

The manner of operating the device is as follows: The parts being in position, as in Fig. 1, the shank of the tool is inserted in the openings in the smaller end of the shell and casing and the spindle is drawn back, so that the inclined under face of the cross-piece S comes in contact with the outer end of the member N, forcing the latter, and with it the member P, in such direction that the lever is opened, and the end of the said member P, which is pivoted to the head H², is pushed along with the said head and the sections F G connected therewith toward the smaller end

of the casing, where, owing to the tapering or conical form of the said casing, the ends of the sections in contact therewith are pressed closer together, thereby clamping the tool, so that the same is firmly held in place. To release the tool, the spindle L is pushed in, so that the inclined face U of the neck T, engaging the member N of the toggle-lever, closes the lever, the cross-piece S having previously passed over the said lever, so as to be out of the way of the joint thereof. As the said toggle-lever is being closed, the head H², with the sections F G, are drawn away from the smaller end of the casing, so as to release the pressure of the said sections on the shank, and thereby permit the release of the tool.

In the modification shown in Fig. 5 a coil-spring V is inserted between the end of a stem on the head H² and shouldered portions of the sections F and G, thereby adapting the movement of the sections, so as to permit the insertion in the sockets of shanks of different diameters and tightly hold and clamp the same therein, the tension or grip being uniform in each case, whether the diameter of the shank is larger or smaller.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

30 1. A tool-holder having a casing with a tapering or conical end, a head movable in said casing and having secured thereto a sleeve with tapering ends, a toggle-lever having one end pivoted to the casing and the other to the head, and mechanism, substantially as described, for operating said toggle-lever, said parts being combined substantially as described.

40 2. A tool-holder having a casing with a tapering end having an opening therein, a head movable in said casing and having a compressible sleeve secured thereto, a toggle-lever pivoted to the casing and head, and a spindle with mechanism attached thereto, substantially as described, for opening and closing

ing said toggle-lever, said parts being combined substantially as described.

3. A tool-holder having a casing with a tapering end having an opening therein, a head movable in said casing, a compressible sleeve connected with said head, a toggle-lever pivoted to said head and casing, a spindle with a cross-piece adapted to contact with the said lever, so as to open the same, and means, substantially as described, connected with the spindle for closing said lever, said parts being combined substantially as described.

4. A tool-holder having a casing, a compressible sleeve within said casing consisting of sections, a head connected to each of said sections by pins passing through enlarged openings in said sections, and mechanism pivotally connected with said head and casing for closing said sleeve, said parts being combined substantially as described.

5. A tool-holder having a casing, a compressible sleeve within said casing formed of longitudinal sections, a head connected with said sections, a toggle-lever pivoted to said head and casing, a head with a spindle, and a strip or neck secured to said last-mentioned head and having an inclined front portion adapted to contact with one side of a member of the said toggle-lever, said parts being combined substantially as described.

6. A tool-holder having a casing, a spindle therein provided with a sleeve having an enlarged portion with an annular groove therein, a collar on said spindle within said groove, and screws securing the collar to said spindle, said sleeve having openings in its sides for the passage of said screws, said parts being combined substantially as described.

GEORGE REHFUSS.
MARTIN O. REHFUSS.
JOHN G. REHFUSS.

Witnesses:

JOHN A. WIEDERSHEIM,
A. P. JENNINGS.