(No Model.)

E. M. WOLFE.

PIPE TAP.

No. 482,955. Patented Sept. 20, 1892.

Fig. 1.

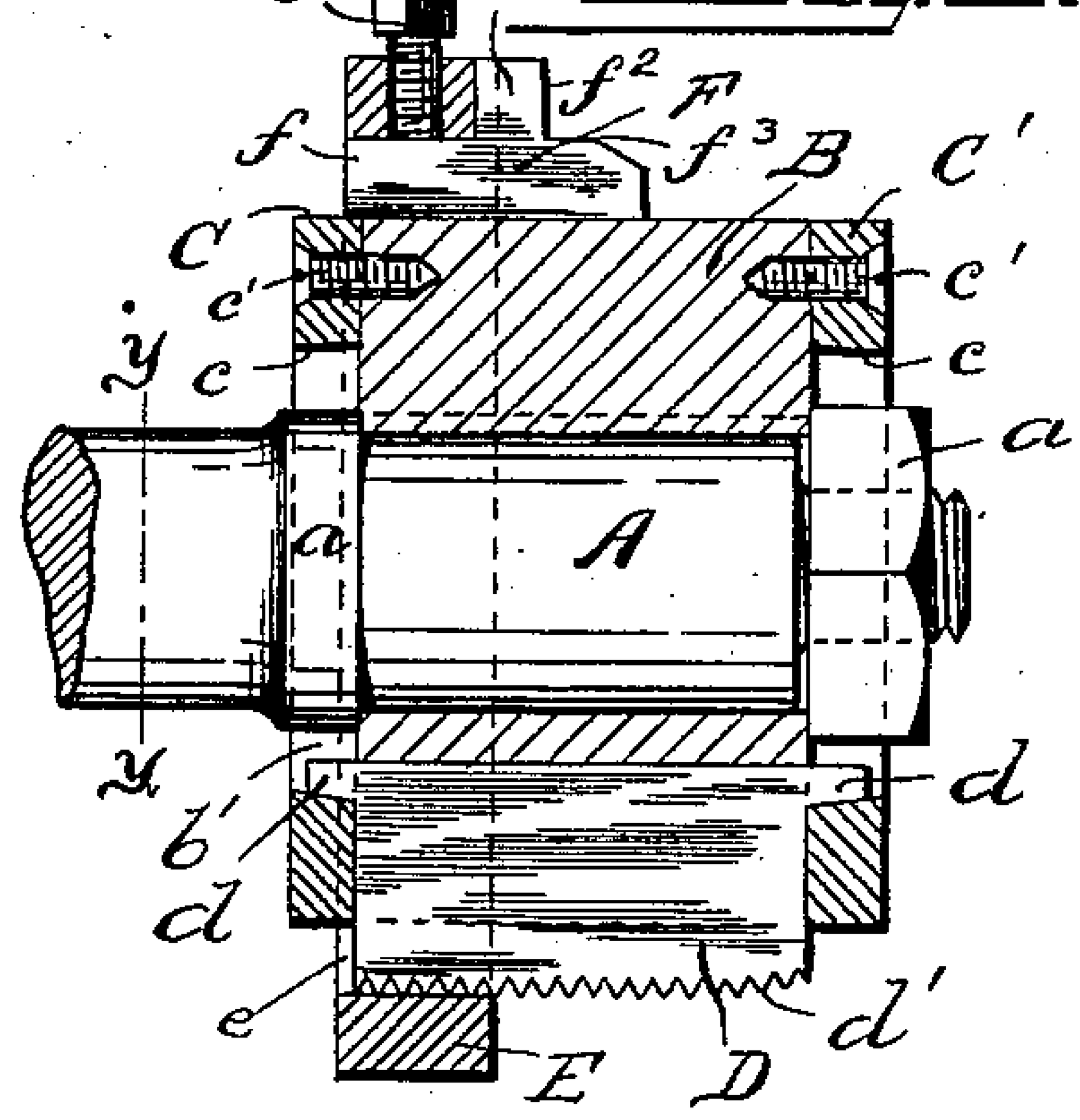


Fig. 2.

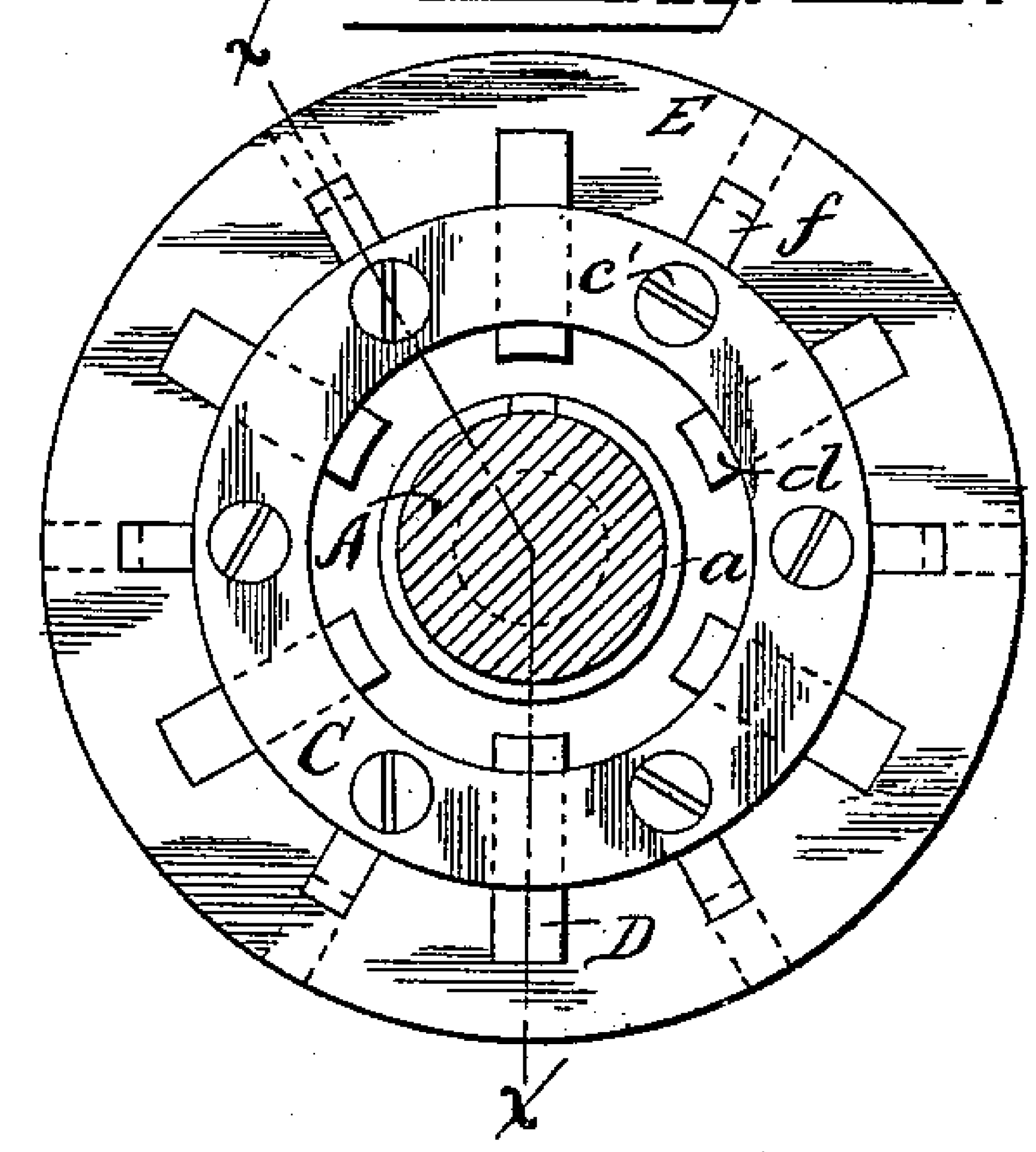


Fig. 3.

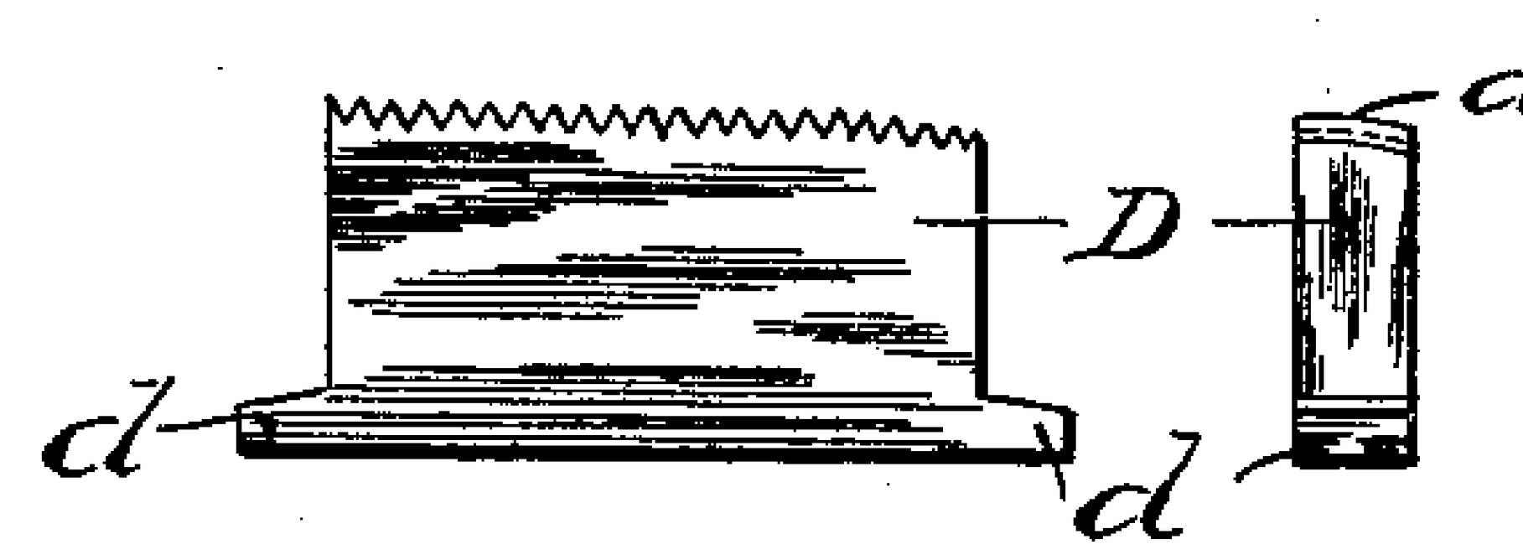


Fig. 5.

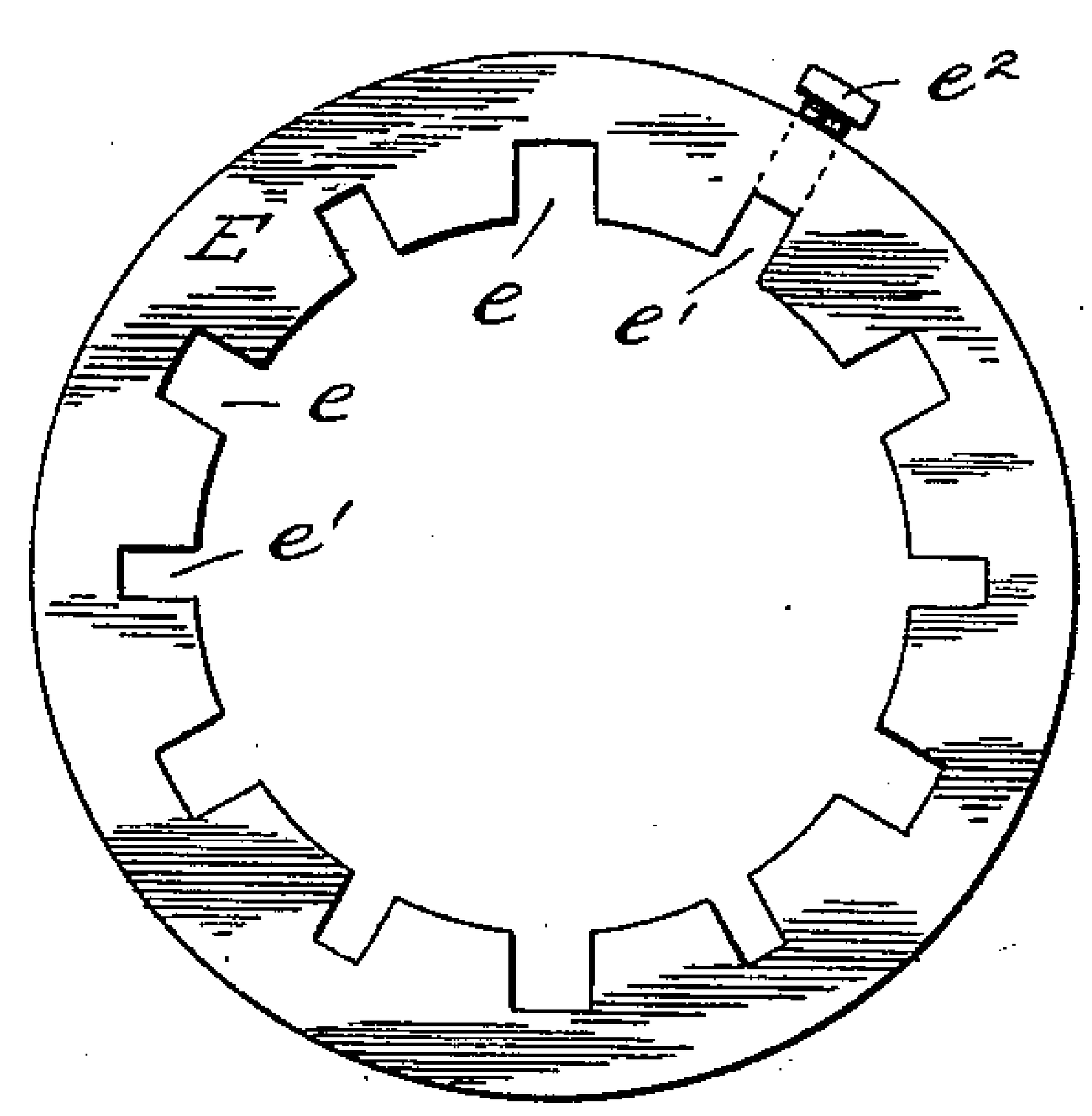


Fig. 4.

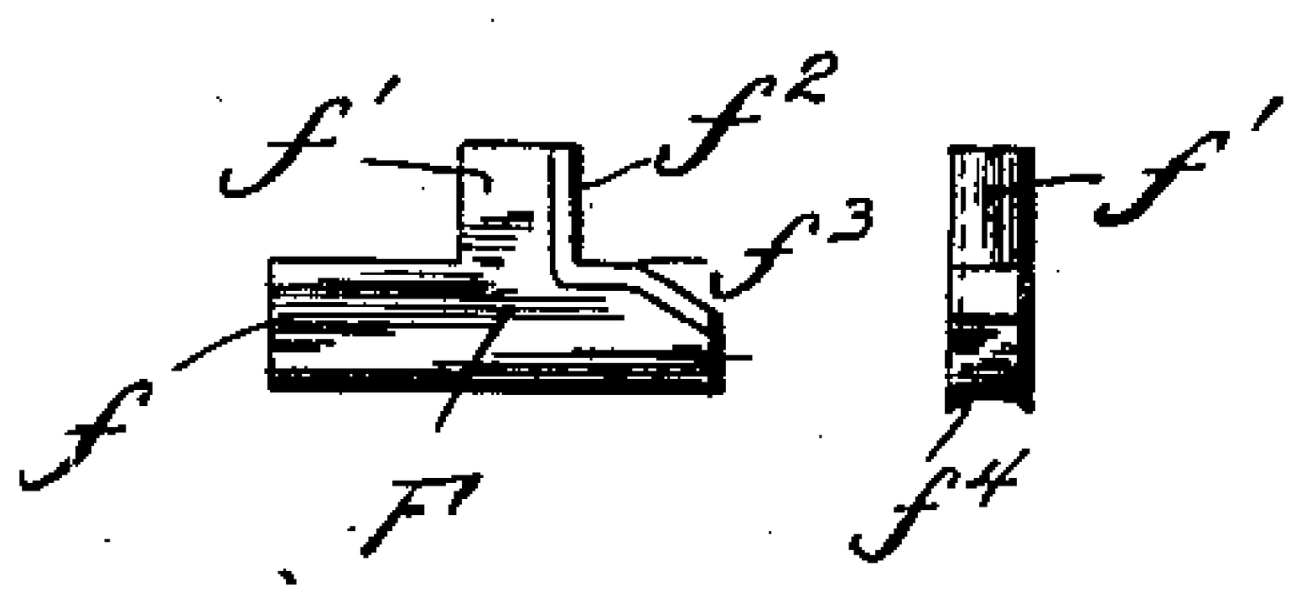
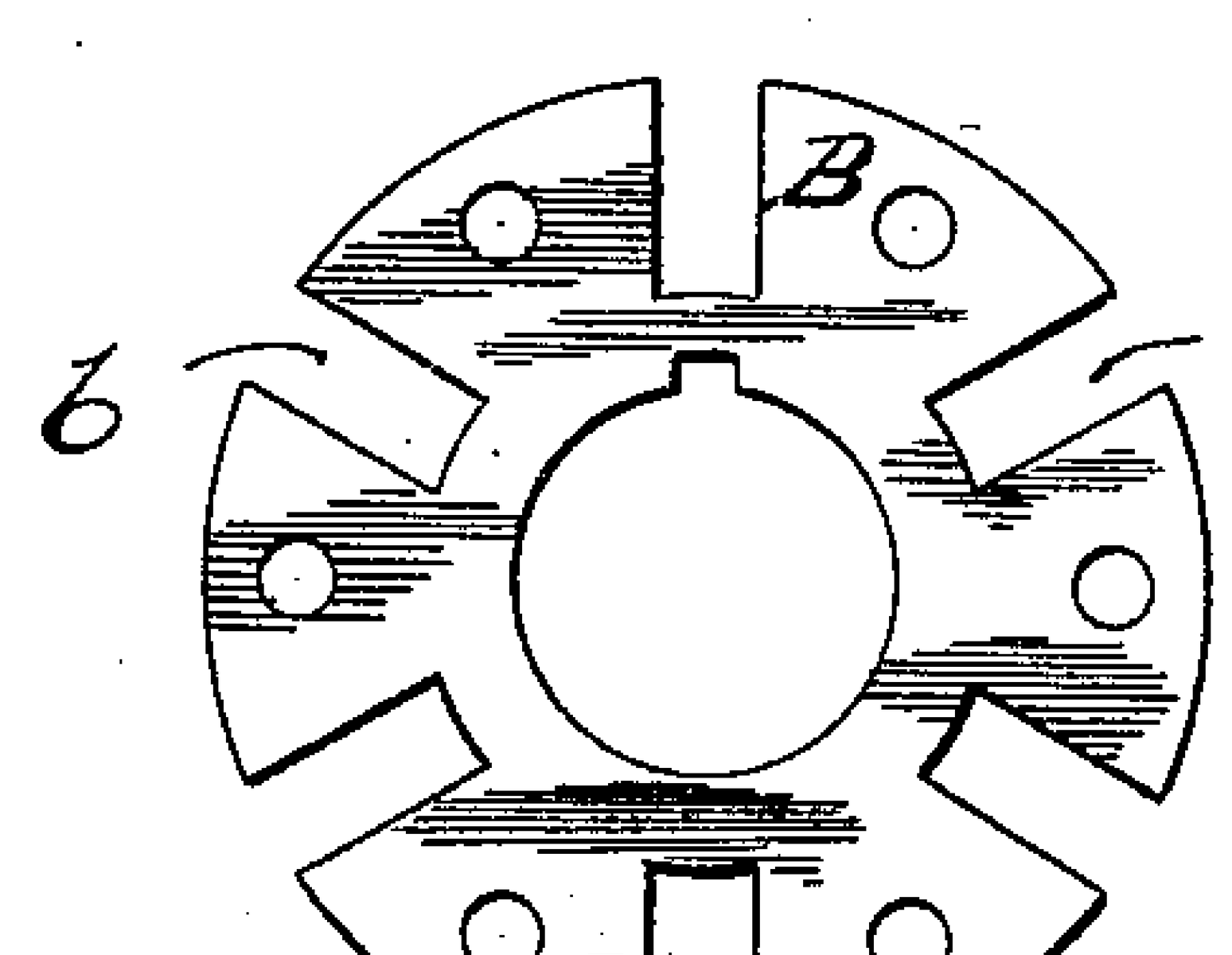


Fig. 6



Witnesses

Edward M. Wolfe. Inventor

By his Attorney

UNITED STATES PATENT OFFICE.

EDWARD M. WOLFE, OF READING, PENNSYLVANIA, ASSIGNOR TO THE READING IRON COMPANY, OF SAME PLACE.

PIPE-TAP.

SPECIFICATION forming part of Letters Patent No. 482,955, dated September 20, 1892.

Application filed February 15, 1892. Serial No. 421,553. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. WOLFE, a citizen of the United States, residing at Reading, in the county of Berks, State of Pennsylvania, have invented certain Improvements in Pipe-Taps, of which the following is a specification.

This invention relates to taps intended more particularly for screw-threading steam and gas pipe fittings. The main object is to provide a tool which may be readily set to tap to any desired depth and, when desired, to simultaneously counterbore and face the end of the fitting, or which may be run entirely through a sleeve-coupling, for instance, to produce a straight thread. The construction by means of which these and other advantages are secured over taps of this class heretofore devised is fully described in connection with the accompanying drawings, and the novel features are specifically pointed out in the claims.

Figure 1 is a sectional view of my improved tap, taken on the line X X of Fig. 2. Fig. 2 is an end view showing the mandrel in section on the line Y Y of Fig. 1. Figs. 3 and 4 are detail views of the thread-cutter and counterboring and facing tools, respectively. Fig. 5 is a separate view of the movable collar. Fig. 6 is a similar view of the stock.

The cylindrical stock B is removably secured to the mandrel A by means of a nut a^3, which clamps the stock firmly against the shoulder a on the mandrel, stocks of different sizes being thus readily applied to the same mandrel A. Longitudinal grooves b in the stock are adapted to receive thread-cutters D, which are firmly held therein by means of projecting ears d d, formed at either end, which ears project beyond the stock and have inclined surfaces and are engaged by the correspondingly-inclined walls of openings c in clamping-rings C C′, the latter being fastened to the stock by means of screw-bolts c' and serving to firmly secure the cutters to the stock, so that the tool may be thus used for tapping a sleeve by running it clear through.

The movable collar E is bored to fit the stock B loosely and is provided with grooves e e e, which pass freely over the projecting threaded portions of the screw-cutters, thus permitting the collar to be moved to any desired point in the length of the stock, where when fastened it will determine the depth to which the fitting shall be threaded. The cutters F, which are carried by this ring, are each formed with cutting-edges f^2 and f^3 at right angles to each other, have a shank f, which enters one of the grooves e in the collar E, a heel f', which bears upon the face of the collar, and a concave face f^4, which is adapted to grip the curved surface of the stock B when pressed against it by means of set-screws e^2, passing through the ring and bearing upon the shank f, thus serving to clamp both the collar and the cutters firmly in any desired position.

The cutting-edges d' of the thread-cutters are cut back for clearance, as usual, and are adapted to cut a thread of standard taper. Each of the several parts is turned up in position so as to be perfectly symmetrical. When the tap is used vertically, the annular recess b' between the mandrel A and the opening c of the ring C serves as an oil-receptacle, from which the oil is fed uniformly to the several cutters. The collar E may be readily set for cutting any desired number of threads in the fitting. As the points of the cutters F come in contact with the fitting the latter is counterbored perfectly concentrically with the thread which is cut, and when the cutting-edge f^2 comes in contact with it the end of the fitting is faced off perfectly square. In this manner, therefore, not only are the three operations of threading, counterboring, and facing carried on together and finished at the same time, but the work is more perfectly done than when carried on independently in the usual way. The device is strong and simple in construction, may be readily adapted for different classes of work, and enables a maximum amount of work to be accomplished.

Having thus fully described my invention, I do not limit myself to the exact construction shown and described; but

What I claim is—

1. In a pipe-tap, the combination, with the grooved stock B, having thread-cutters D, removably secured in the grooves, of the movable collar E, grooved to pass freely over the projecting thread-cutters, cutters F, seated in grooves in said collar, and set-screws for press-

ing said cutters F into gripping contact with the stock, substantially as set forth.

2. In a pipe-tap, the combination, with the stock B, provided with thread-cutters D, of the longitudinally-adjustable collar E, carrying cutters F, having cutting-edges f^2 and f^3 for facing and counterboring, respectively, substantially as set forth.

3. In a pipe-tap, the combination, with the stock provided with thread-cutters, of a collar grooved to pass freely over the projecting thread-cutters, cutters F, having shanks entering grooves in said collar, heels bearing upon the face of the collar, and cutting-surfaces adapted to face and counterbore, and means engaging said shanks for forcing the cutters into gripping contact with the stock, substantially as set forth.

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

EDWARD M. WOLFE.

Witnesses:

GEO. W. DELANY,

H. T. YOST.