

(No Model.)

E. ANDERSON.
RATCHET DRILL.

No. 497,261.

Patented May 9, 1893.

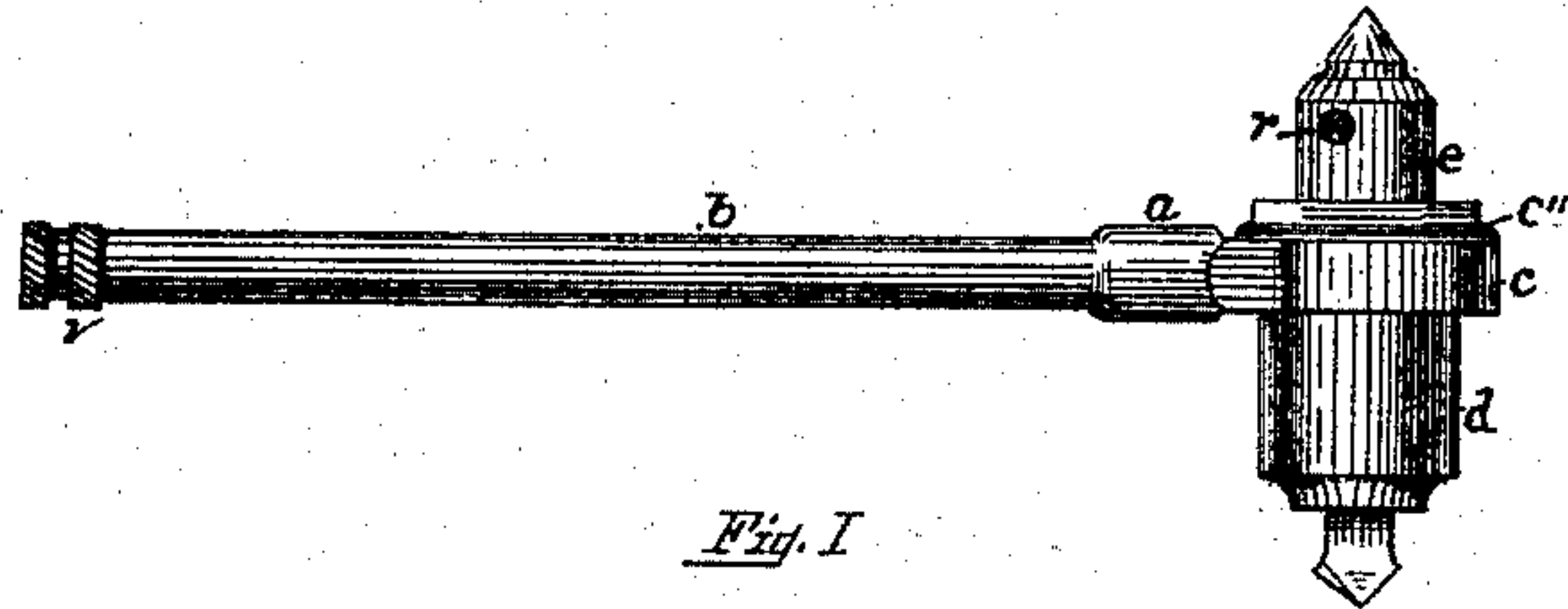


Fig. I

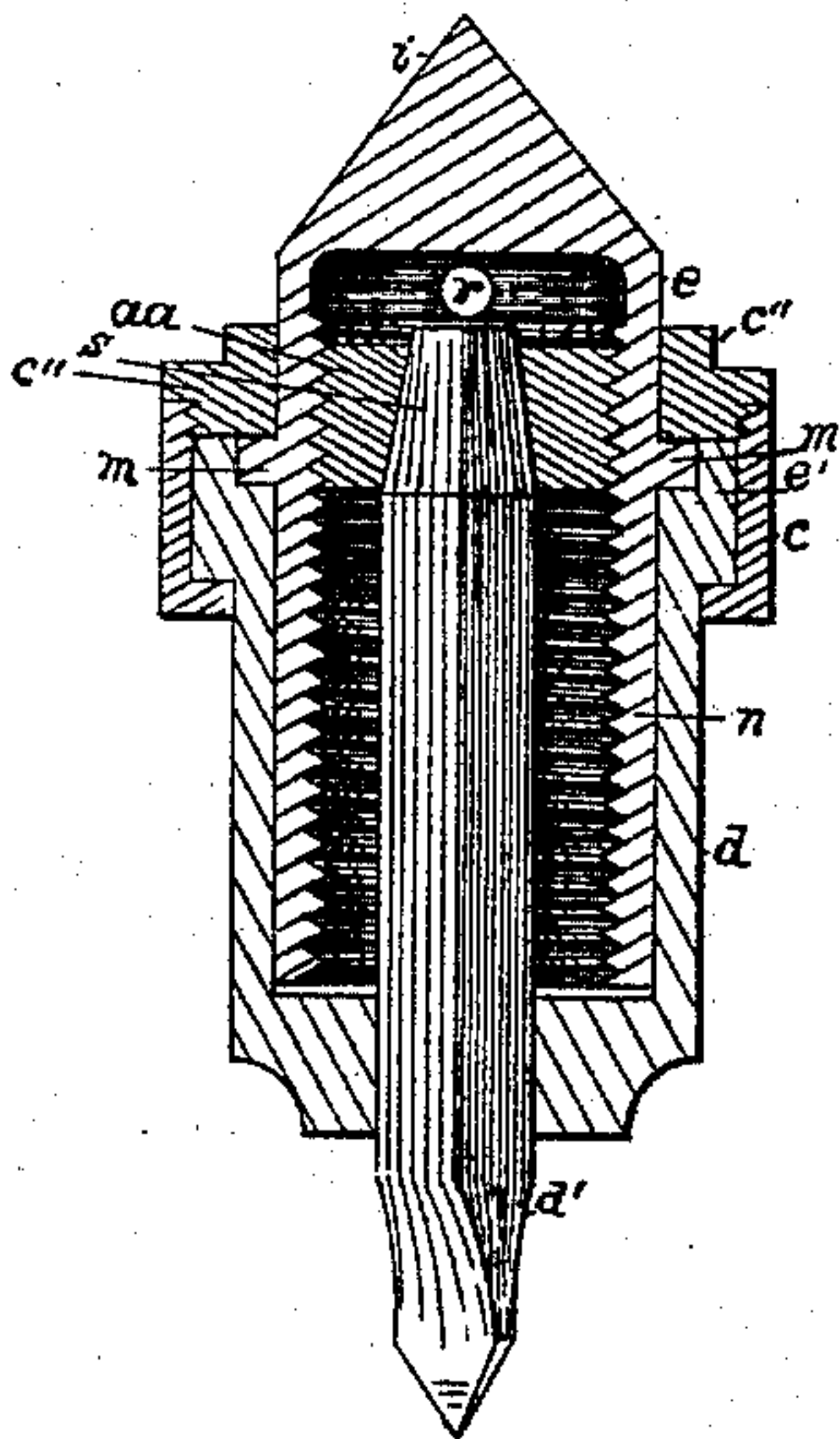


Fig. II

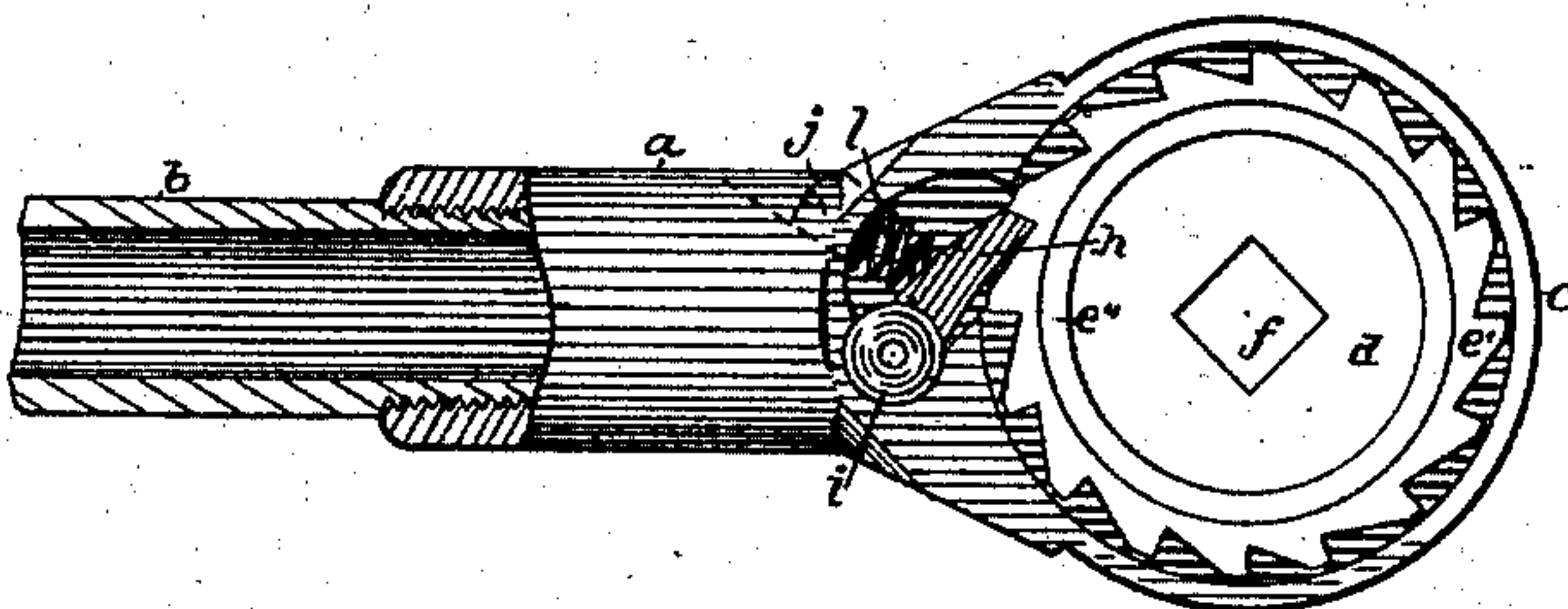


Fig. III

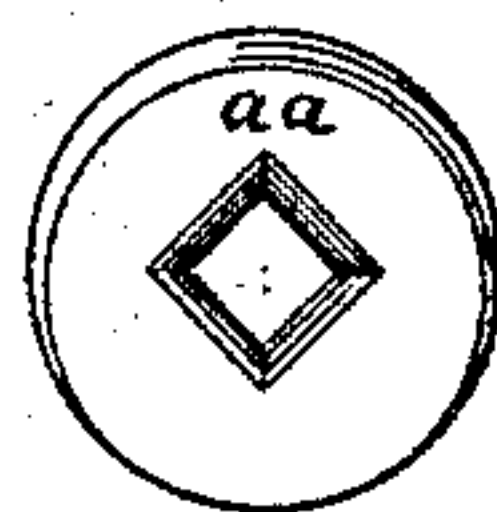


Fig. IV

WITNESSES:
James O. Kappan
Wm. H. Kappan

INVENTOR
E. Anderson
BY
H. Anderson
ATTORNEY.

UNITED STATES PATENT OFFICE.

EUCLID ANDERSON, OF PEEKSKILL, NEW YORK.

RATCHET-DRILL.

SPECIFICATION forming part of Letters Patent No. 497,261, dated May 9, 1893.

Application filed April 5, 1892. Serial No. 427,966. (No model.)

To all whom it may concern:

Be it known that I, EUCLID ANDERSON, a citizen of the United States, and a resident of Peekskill, in the county of Westchester and State of New York, have invented a new and useful Improvement in Ratchet-Drills, of which the following is a specification, which I declare to be a full, clear, and accurate description of my invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being made to the accompanying drawings.

My invention has for its object, solidity, steadiness and compactness in a ratchet-drill, a ratchet from which the drill itself is pushed to its work, differing in this respect from the usual forms of construction in all of which the feeding of the drill is accomplished by causing one part of the ratchet to unscrew from another part. These objects are accomplished by the means set forth in the drawings.

Figure I represents the general appearance of my ratchet drill. Fig. II is a vertical cross sectional view taken at right angles to the handle. Fig. III is a plan of the handle and ratchet. Fig. IV represents the drill feeding nut.

Like letters refer to similar parts throughout the several views.

By reference to Fig. III it will be seen that what I call the handle consists of two pieces, *a*, *c*, and *b*,—the hub *a* and casing *c* consisting of one piece, the handle *b* screwing into the hub *a* so that it can be easily removed. The pawl *h* and its bearing *i* are in one piece, the bearing fitting a socket in the solid metal as shown. The spring *l* is subject to a variation of tension by means of a screw *j* shown by broken lines. A drift for insertion in the hole *r* to turn the feed, is attached to the milled head *v*, Fig. I, which is screwed into the end of the handle, the hollow handle forming a convenient sheath for it.

The particular features of the ratchet are clearly represented in Fig. II. A hub *d* is closed at one end except that it has a square hole *f*, Fig. II, in the center for the insertion of a drill, in which the drill does not fit tight, but slides easily. The other end of the hub is provided with ratchet teeth *e'* as in Fig. III. These parts fit in the casing as shown. The hub is bored to receive an internally threaded

stock *e*, and is provided with a recess *e''* to accommodate a flange *m* on the said stock. This stock terminates in a center point in the ordinary manner, and has a hole *r* through it for the insertion of a drift or rod for turning it. The hub and stock are united and inserted in the casing *c* as shown, and are held there securely by the nut *c''* which screws into the top of the casing. When so united each piece will freely turn independently of the other.

Within the stock *e* a nut *a a* is fitted to the thread, through its center, in alignment with the square hole in the hub *d*, the nut is provided with a square, tapered hole, as shown in Figs. II and IV.

It will be plain, that revolving the several parts shown in Fig. II, without the drill *d'*, will not change the position of the nut *a a*. But, when a drill is inserted as shown, it is plain that if the stock *e* be held stationary and the hub *d* be turned by means of the handle and ratchet, a downward movement of the nut *a a* will follow, and a consequent outward feeding of the drill. A reversal of the movement will draw the drill within the machine. This explains the action of the ratchet in drilling.

Some of the advantages of this ratchet must be apparent. By using a drill with the point coming flush with the end of the hub *d* a hole may be bored in a space that will barely admit the ratchet. Drills may be quickly and cheaply made from square steel the size of the sockets. In the use of long drills the instability of the ordinary ratchet arising from poor fitting of the drill shanks to the common form of socket is a trying inconvenience. This is overcome in the ratchet described by the drill having two bearings instead of one,—in the hub *d* and in the nut *a a*. Another convenience is the facility afforded for removing the drill from its socket.

By reference to Fig. II it will be seen that if a rod be inserted through the hole *r* in the stock *e*, and the nut *a a* be screwed upward, the butt of the shank of the drill will come in contact with the rod and be forced from the socket.

The nut *c''* is easily removable, and when it is taken away the stock *e* is readily removed from its place, and a longer stock can be inserted when the nature of the work requires

a drill with a long traverse. A long stock differs from the one shown only in being longer from the top of the flange *m* to the extreme point, and having an internal thread
5 its full length.

While I have shown a square drill, and a square drill socket, it is obvious that any means for holding the drill in the manner indicated, that is, so that it shall be revolved by the hub
10 *d*, and cause the nut *a a* to turn with it, will accomplish the same purpose and come within the scope of my invention.

I reserve the right to change the forms of construction herein shown so long as I embody
15 in them the principles of my invention.

I claim—

1. The combination of the ratchet hub *d* perforated to receive the shank of a drill, the drill being free to slide longitudinally through
20 the said perforation but not to rotate therein, and the stock *e* held within the said hub by the casing *c, c''*, internally threaded and carrying a nut *a a* which receives the end of the drill, causing the drill to move in or out of

the stock as the hub *d* is revolved while the
25 stock *e* is held stationary, substantially as shown and described.

2. The combination in a ratchet drill of the internally threaded stock *e* provided with a flange *m*, the ratchet hub *d* inclosing part of
30 the stock *e* and revoluble by means of the handle and pawl, and allowing the passage of the drill through it longitudinally but causing the drill to revolve with it, a nut *a a* traversing the thread in its stock *e* and receiving
35 the drill shank through its center causing the nut to move the drill when the hub *d* revolves and the stock *e* is held stationary, the several parts being held within the casing *c* by the nut *c''*, substantially as shown and described. 40

In testimony that I claim the foregoing as my invention I have signed my name in presence of two witnesses.

EUCLID ANDERSON.

Witnesses:

CORS VAN HORN,
ALLEN BARGER.