

No. 767,199.

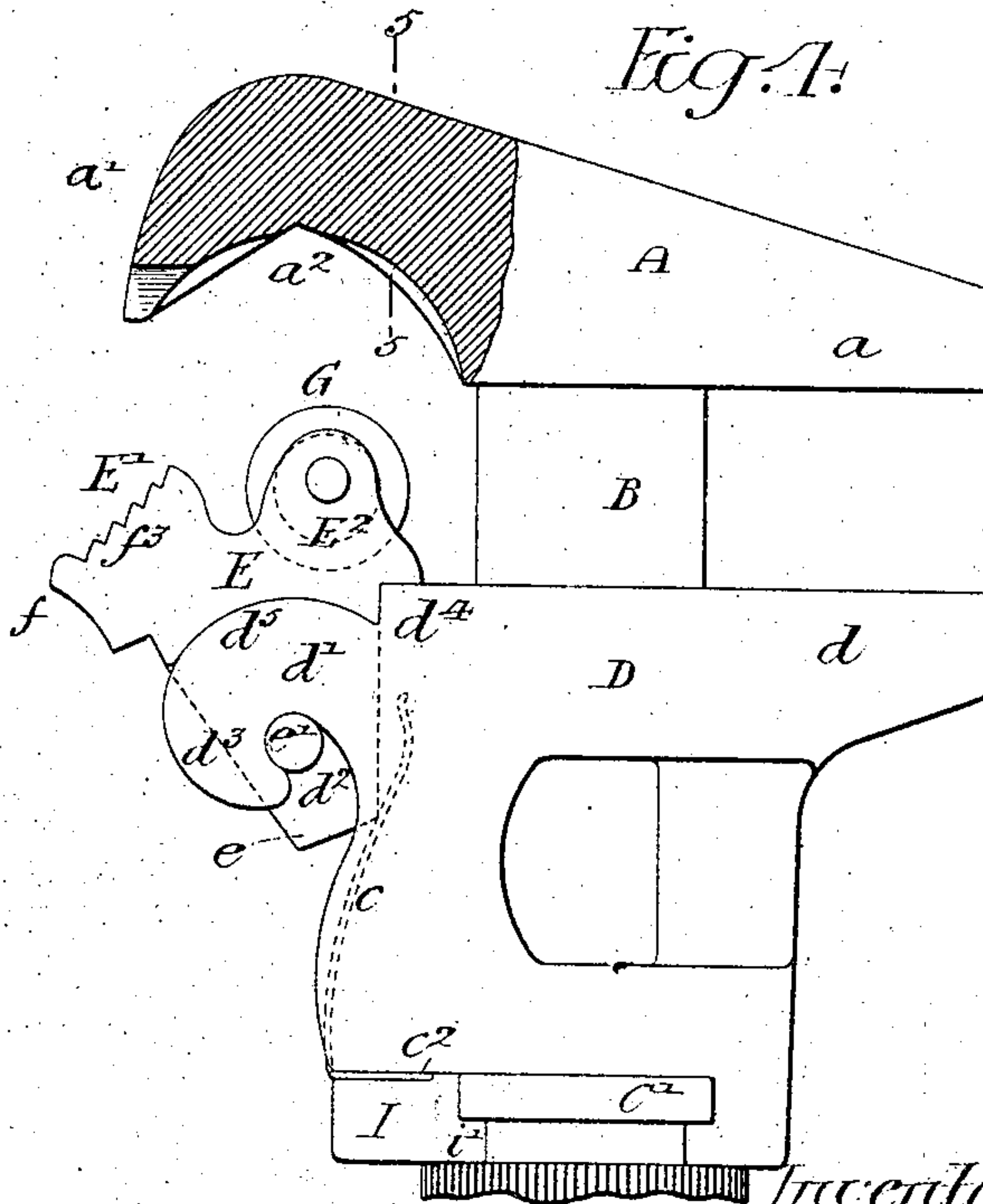
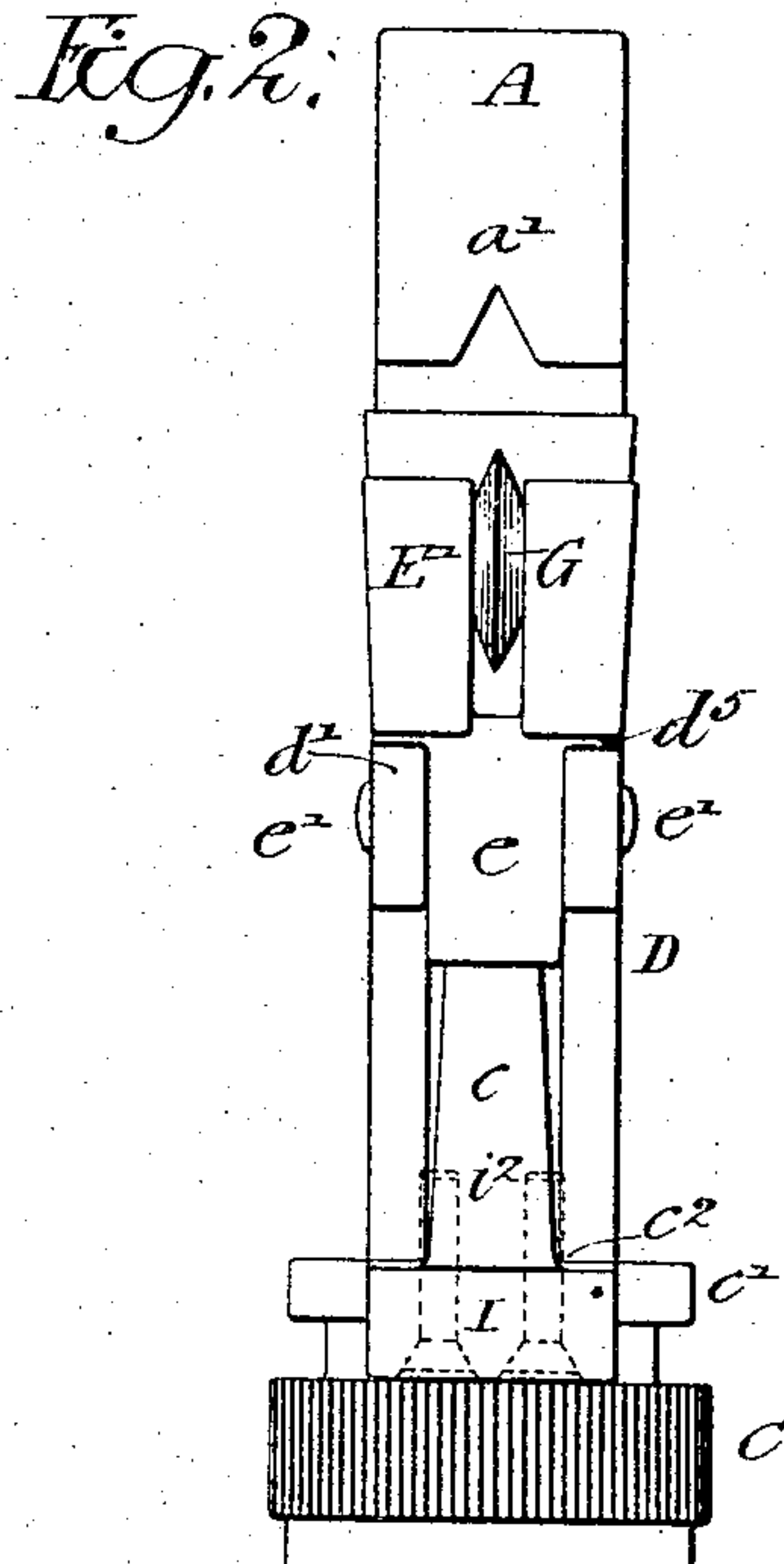
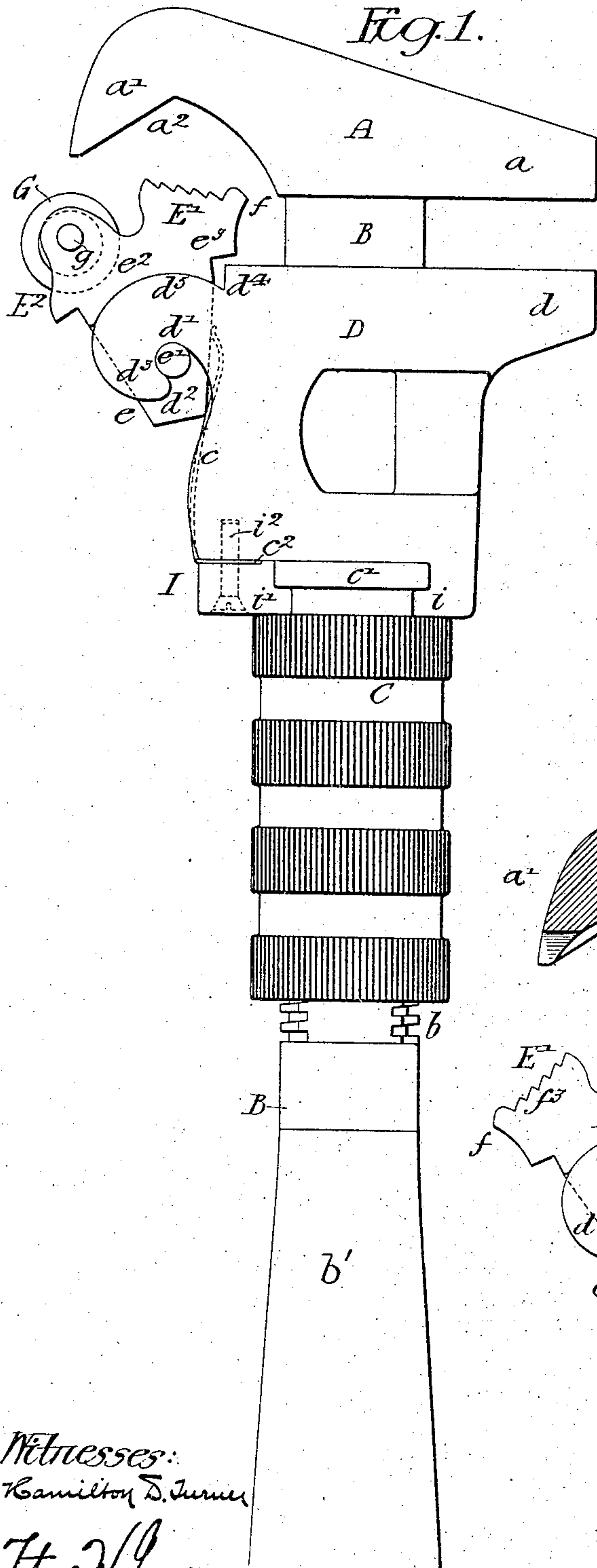
PATENTED AUG. 9, 1904.

J. G. BAKER.
WRENCH.

APPLICATION FILED NOV. 30, 1903.

NO MODEL.

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2.

Fig. 5.

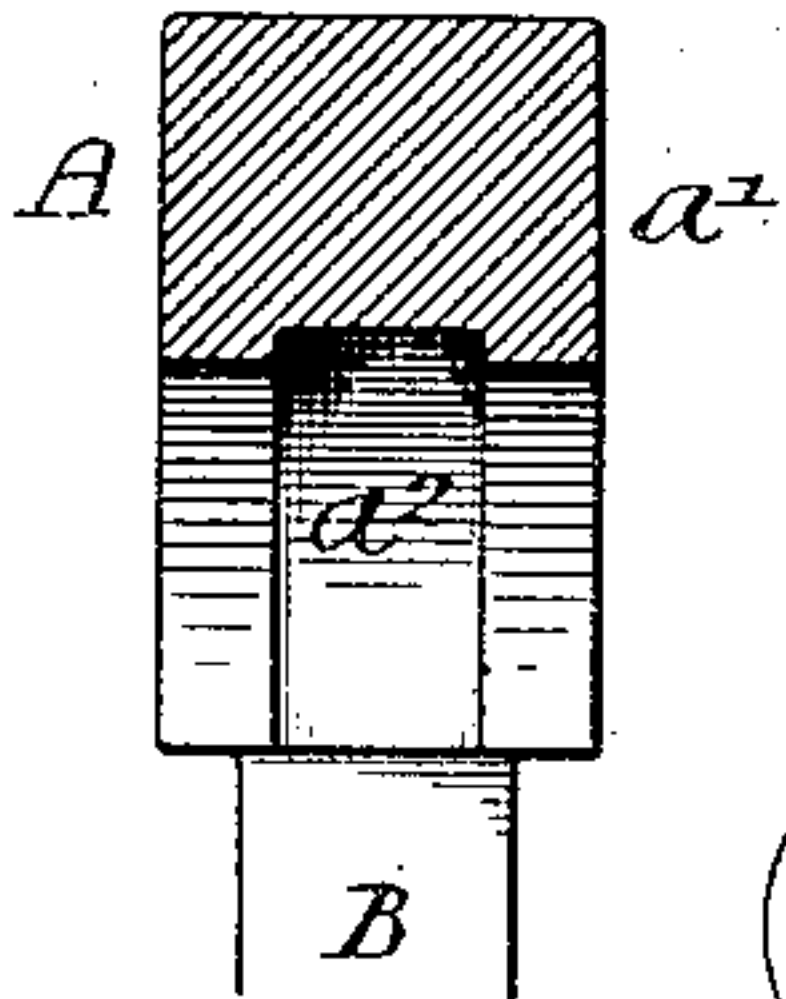


Fig. 10.

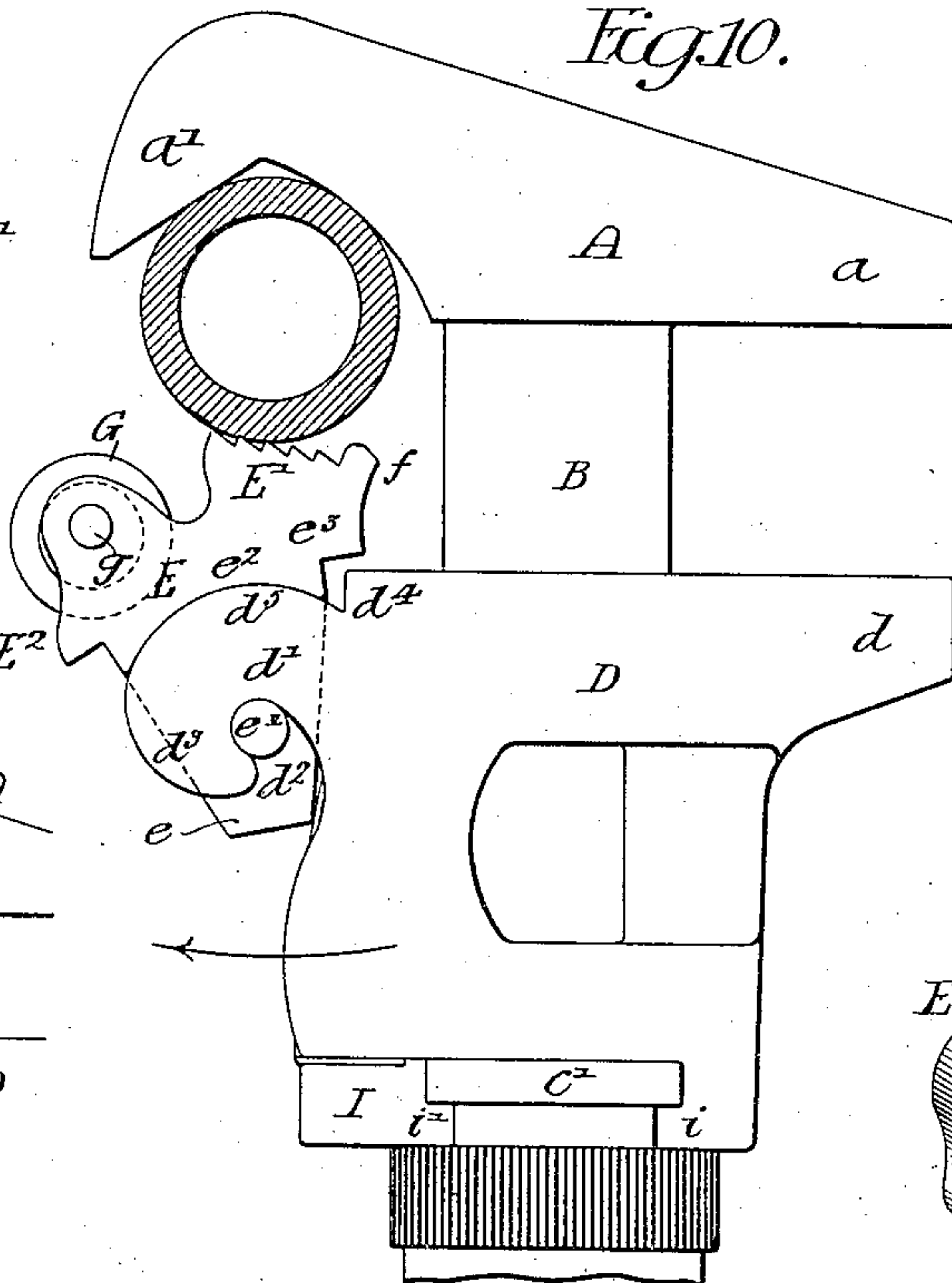


Fig. 6.

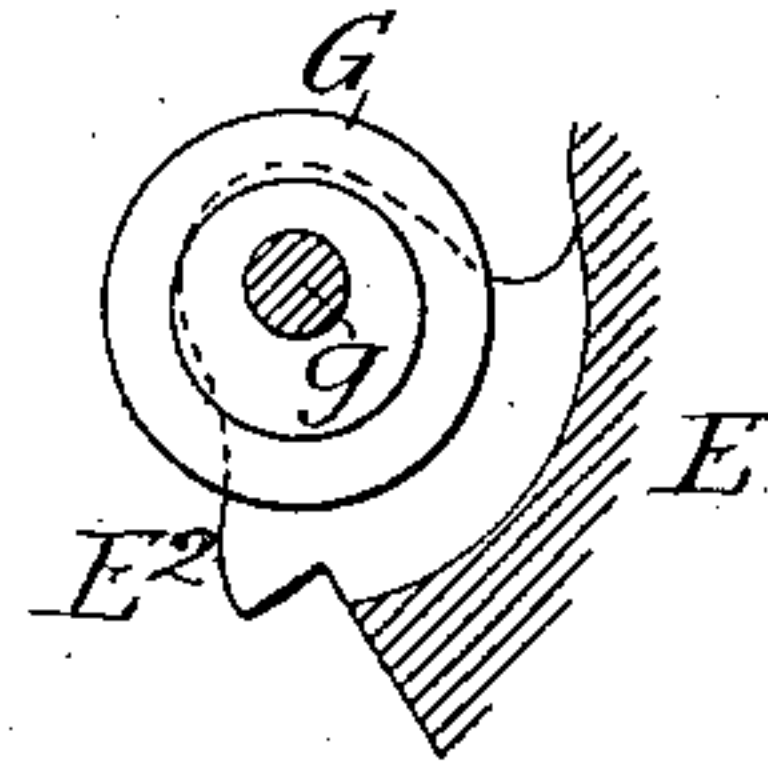


Fig. 9.

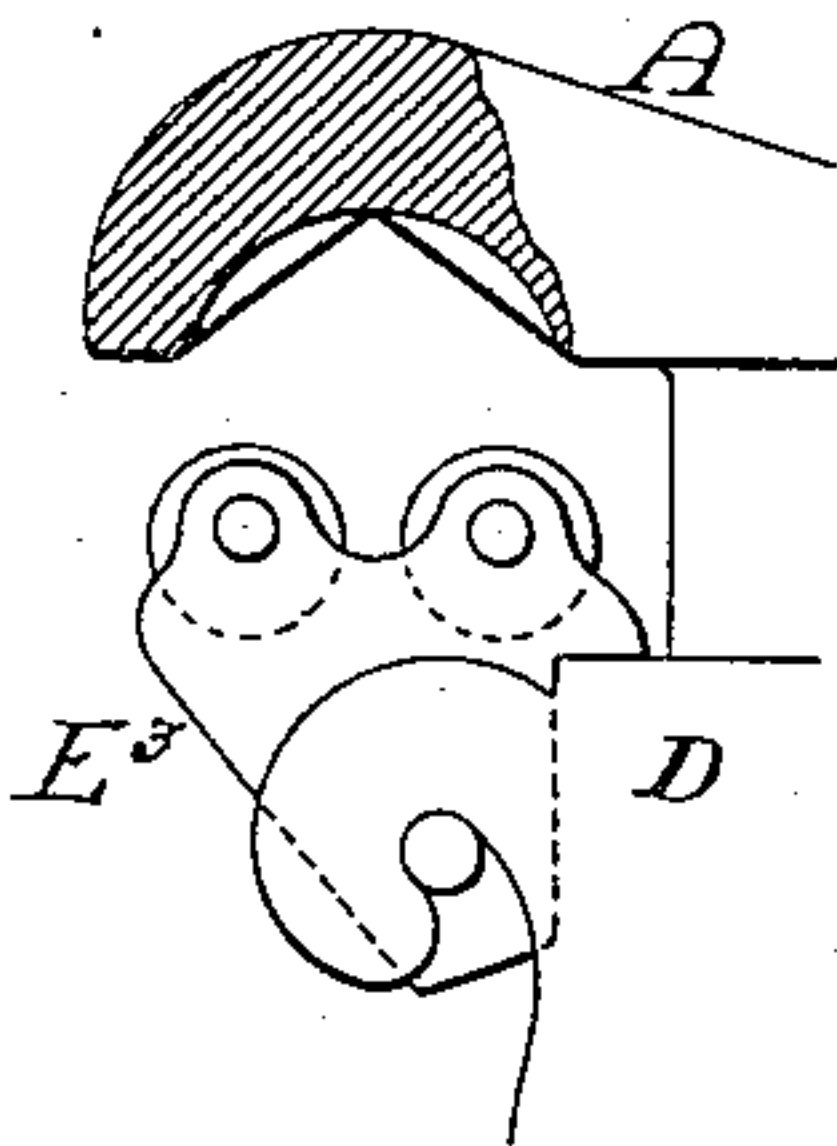


Fig. 3.

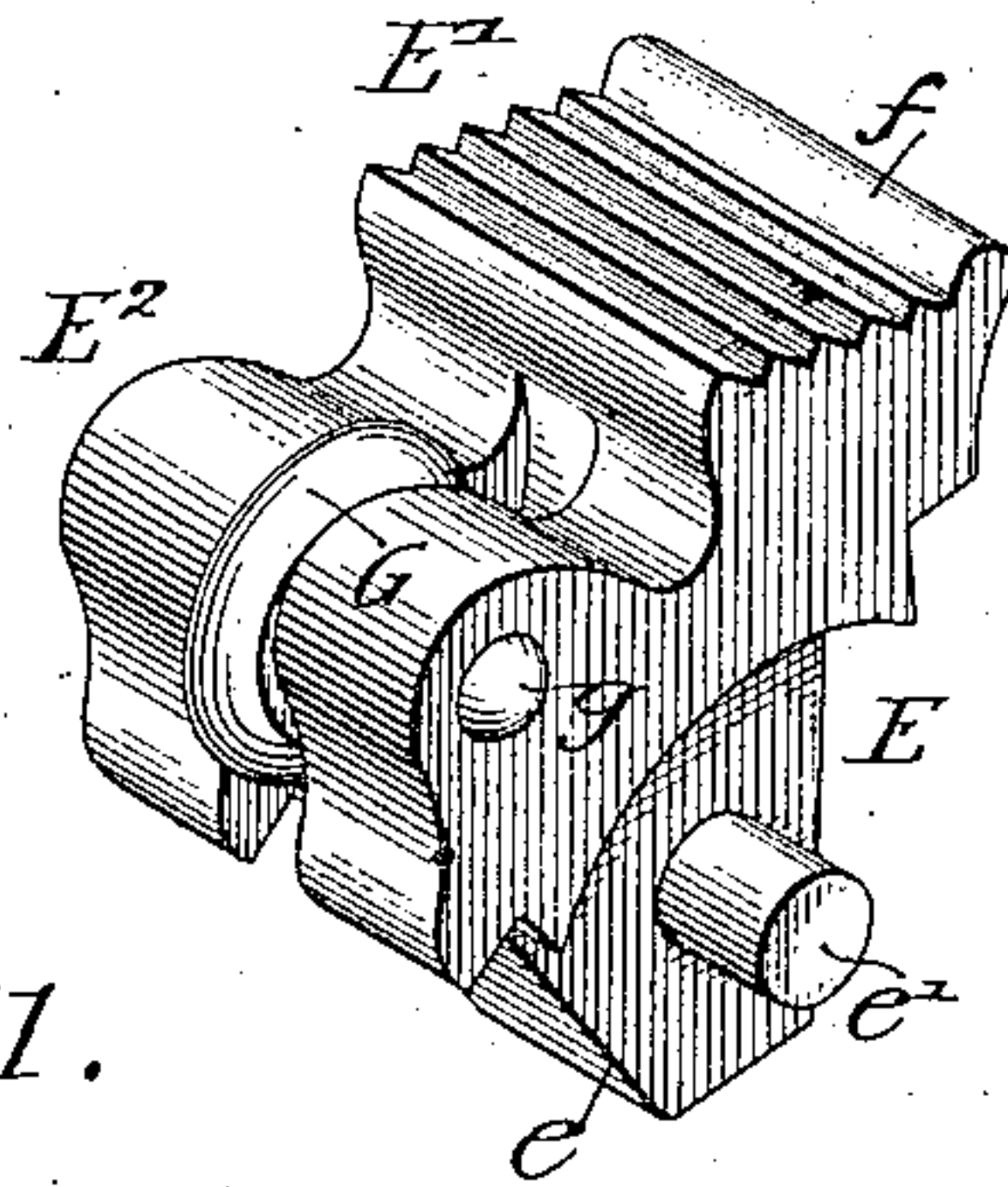


Fig. 11.

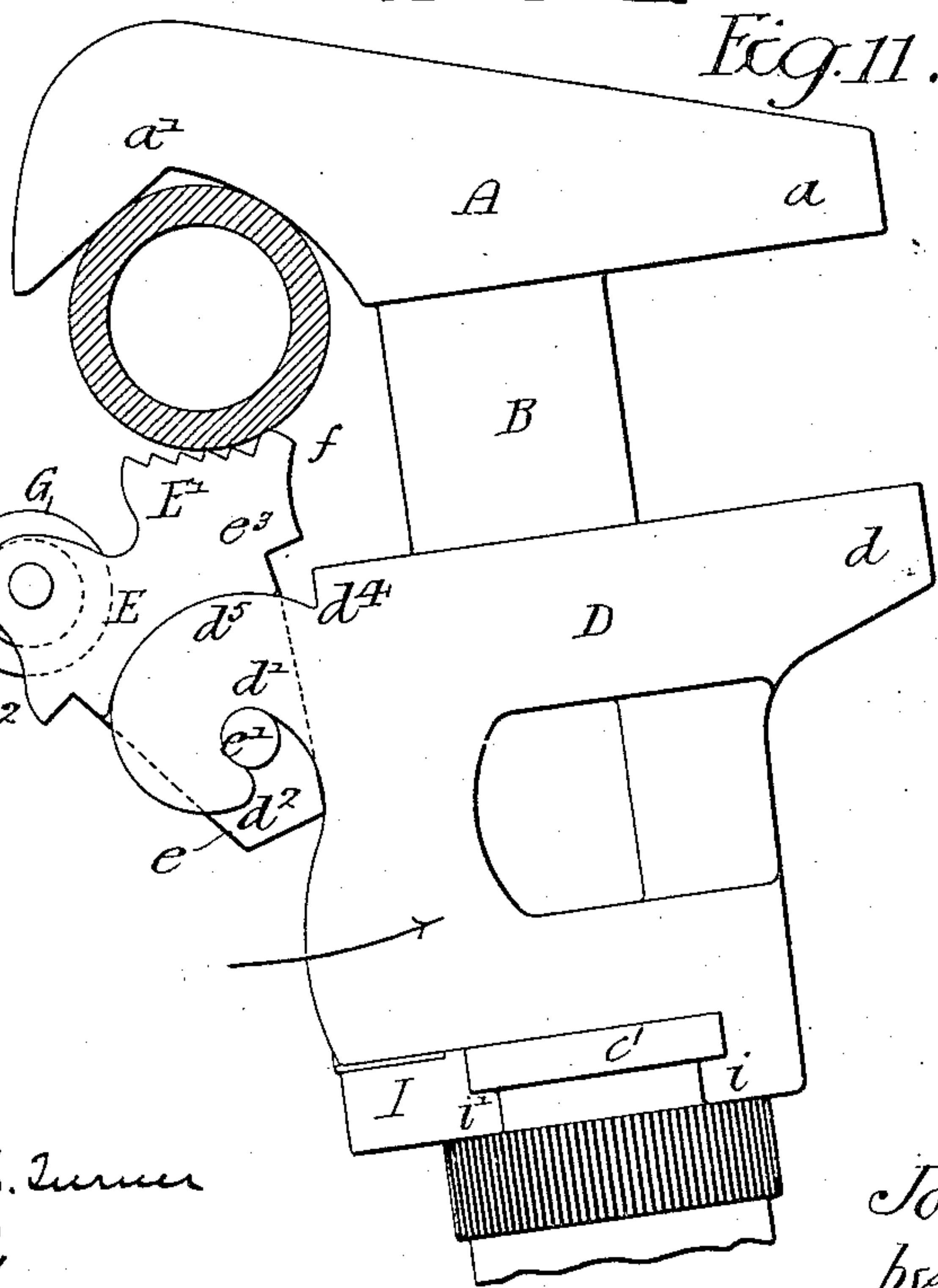


Fig. 7.

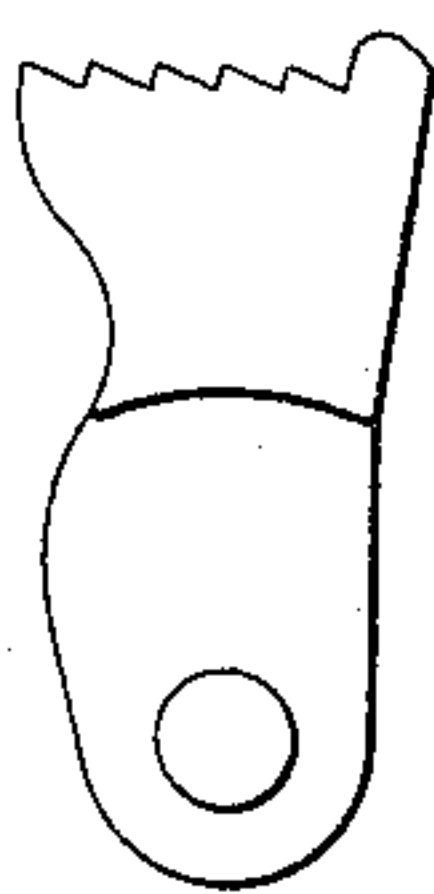
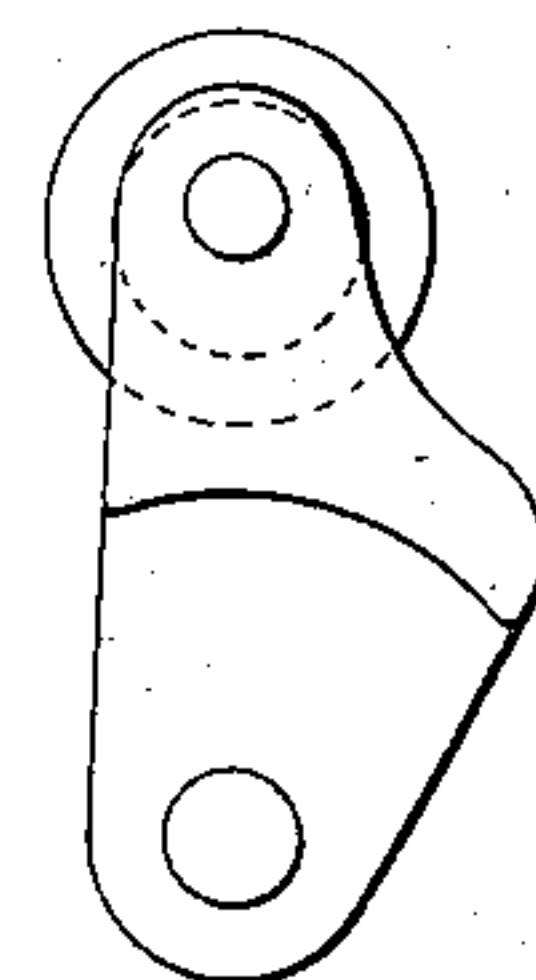


Fig. 8.



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WRENCH.

SPECIFICATION forming part of Letters Patent No. 767,199, dated August 9, 1904.

Application filed November 30, 1903. Serial No. 183,165. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH G. BAKER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Wrenches, of which the following is a specification.

My invention relates to certain improvements in combination-wrenches having a pipe-cutting attachment.

10 My invention also relates to certain improvements in pipe or rod cutters.

The object of my invention is to so construct a wrench of the type above alluded to that it will be accurate and strong, so as to sustain
15 the strain to which it is subjected, and can be adjusted to readily cut pipe or rods and can be used as a ratchet-wrench, if desired.

A further object of the invention is to make the pipe jaw and cutter readily interchangeable.
20 able.

Referring to the accompanying drawings, Figure 1 is a side view of my improved wrench. Fig. 2 is an edge view. Fig. 3 is a perspective view of the detachable jaw. Fig. 4 is a
25 view of a portion of the wrench similar to Fig. 1 with the removable jaw adjusted to cut pipe. Fig. 5 is a section on the line 5 5, Fig. 4. Fig. 6 is a sectional view of the removable jaw, showing the eccentric cutting-
30 wheel. Figs. 7, 8, and 9 are views of modifications of my invention, and Figs. 10 and 11 are diagram views showing the method of ratcheting a pipe.

A is the fixed jaw of the wrench, having a
35 shank B, which is screw-threaded at b and provided with a handle b' .

D is the movable jaw of the wrench, arranged to slide on the shank B and governed by a nut C, the threads of which engage the
40 threads b on the shank B. Only a portion of the nut C is threaded, and it is made of the length shown, so that the user can have a firm grasp upon the nut.

The portion a of the fixed jaw A and the
45 portion d of the movable jaw D have parallel faces similar to those of the ordinary monkey-wrench, while the portion a' of the fixed jaw

A is recessed at a^2 and is shaped, as shown, so as to center a pipe in respect to the jaw E.

On the rear of the sliding jaw D are two
50 projections d' , each having a socket d^2 , the lip d^3 of the extension passing slightly under the socket for the purpose described hereinafter.

E is the reversible jaw, having a shank e ,
55 which is mounted between the two extensions d' , and extending from each side of the shank is a pin e' , which enters the socket d^2 . A spring c , which is secured to the sliding jaw D, presses against the shank e of the removable jaw E and holds it in the socket; but by
60 turning the jaw E to the position at right angles and pressing it slightly the pivot-pins e' will be readily forced out of the sockets d^2 , and the jaw is then free to be turned, if de-
65 sired. The flanges e^2 of the jaw E are curved to rest upon the curved portions d^5 of the projections d' , so that the strain will come directly upon the jaw D and not upon the pivot-pins. The jaw E is further notched at each
70 side at e^3 , so as to fit snugly over the corner d^4 of the jaw D.

The jaw E in the present instance has two members $E^1 E^2$. The member E^1 has a serrated face, as shown, to engage a pipe, so that when
75 the jaw is in the position shown in Fig. 1 the wrench can be used as a pipe-wrench. The portion E^1 has an extension f , shaped as shown in Fig. 1 for the purpose of preventing the jaw from swinging loose on its pivot when the
80 pipe is being disengaged from the wrench or when the wrench is used as a ratchet-tool, and it is of such length, as shown in Fig. 11, as to compel the pipe to ride thereon and prevent the teeth from engaging the pipe. The
85 other arm, E^2 , of the jaw carries a cutting-wheel G, which is pivoted at g , as shown. This cutting-wheel is mounted eccentrically on the pivot g , as shown clearly in Fig. 6. This is an important feature, as the cutting-
90 wheel can be moved up to the pipe when the low portion of the eccentric is adjacent to the pipe, and when the wrench is turned the high portion of the wheel will cut into the pipe,

and as soon as the lower portion of the wheel is again in line the jaw can be moved up still farther, and so on until the pipe is completely severed. When the cutting-wheel is mounted

5 ed to turn concentrically, it is a difficult matter to force the wheel against the pipe, as the wrenches are comparatively small and the purchase is not sufficient to make a practical cutting-tool.

10 It will be understood that my improved cutting-wheel can be used on other types of pipe or rod cutters without departing from my invention.

The nut C is coupled to the movable jaw D 15 in the following manner: On the end of the nut is an annular head c' , and a lip i is formed on the front portion of the movable jaw, which rests in the groove between the head c' and the body of the nut. Secured to the rear portion of the jaw is a block I, which has a lip i' , 20 also entering the groove between the head c' and the body of the nut C, and this block is secured in the present instance to the jaw D by two screws i'' , which screws also pass 25 through the portion c'' of the spring c , holding it in place, as well as making a substantial coupling between the nut and the jaw.

It will be seen that the wrench can be used at all times as an ordinary monkey-wrench, 30 while when the tool is to be used as a pipe-wrench the reversible jaw E is so adjusted, as shown in Fig. 1, that the section E' will be in the proper position in respect to the fixed head.

When it is desired to use the tool as a pipe- 35 cutter, the jaw E is turned at right angles to the position shown and pressed down against the spring, forcing the pins e' out of their sockets, after which the jaw is reversed and readjusted to the position shown in Fig. 4. 40 When in this position, the cutting-wheel G will aline with the fixed jaw A. The tool can then be applied to a pipe, and as it is turned the wheel will cut into the pipe. The nut can be taken up when the low portion of the eccentric wheel is adjacent to the pipe, and 45 by reciprocating or turning the tool and feeding the wheel the pipe will be cut. Thus it will be seen that I am enabled to construct a wrench which is comparatively light and yet 50 very strong and in which the parts are suitably supported, besides being of such a nature as to quickly cut pipe or rods when desired.

In some instances I may make the two members E' and E'' of the jaw separately, as shown 55 in Figs. 7 and 8, one member having the serrated face and the other carrying the cutting-wheel, and also the eccentric cutting-wheel may be mounted in a fixed bearing on either the movable or fixed jaw of the wrench.

60 When the tool is used as a pipe-cutter, there is a bur formed by the wheel cutting into the pipe, and to allow for this I form a recess in the jaw A, as shown in Figs. 4 and 5, which receives said bur and prevents the jaw press- 65 ing it down into the cut.

In will be noticed in referring to Fig. 10 that when the pivoted jaw is mounted so that the tool can be used to grip a pipe, for instance, the gripping-teeth of the jaw E' are beyond a line drawn through the center of 70 the pipe and the center of the pivot of the jaw, so that when the wrench is moved in the direction of the arrow, Fig. 10, it engages the pipe and moves slightly toward the shoulder d' until it firmly grips the pipe. The continued 75 movement will cause the pipe to turn; but when it is wished to release the jaw or to ratchet it to take another hold all that is necessary is to turn the wrench in the reverse direction, as shown in Fig. 11, which will im- 80 mediately throw the pivoted jaw out, causing the projection f to strike the pipe and slide upon it; but on immediately reversing the movement of the wrench its teeth will engage the pipe, as clearly shown in Fig. 10. Thus 85 the wrench can be used to turn the pipe by simply moving it backward and forward, engaging the pipe in one direction and sliding over it when turned in the opposite direction. It will be noticed in the drawings that the pro- 90 jection f is clear of the pipe when the jaw is in the position shown in Fig. 10. When the jaw is adjusted so that the cutter will act as in Fig. 4, the cutting-wheel is back of the line drawn through the pivot of the jaw and the 95 center of the pipe to be cut, so that the cutter acts upon a pipe to one side of the said line. Thus the jaw when pressure is applied is retained in a fixed position against the shoulder d' . In some instances I may make 100 the jaw as shown in Fig. 9, in which case each member of the detachable jaw E carries a cutting-wheel, each preferably mounted eccentrically, so that both wheels will simultaneously cut the pipe. 105

I claim as my invention—

1. The combination in a wrench, of a fixed and a movable jaw, a projection on one of said jaws recessed on the under side forming an open socket, a detachable jaw having a pivot- 110 pin mounted in said socket and arranged to be turned into and out of position on its pivot, and means for retaining the pivot-pin in the open socket, substantially as described.

2. The combination in a wrench, of a fixed 115 and a movable jaw, projections on one of said jaws recessed on the under side forming open sockets, a shouldered detachable jaw having a pivot-pin mounted in the sockets of the projections, the shoulders of the jaw resting on 120 the projections, and means for retaining the pivot-pin in the sockets, substantially as described.

3. The combination of a fixed and a movable jaw, a detachable jaw carried by the movable 125 jaw, a projection on the movable jaw having a curved face and an open socket, the detachable jaw having a shoulder resting on the curved face and having a pin engaging the socket, substantially as described. 130

4. The combination of a fixed and a movable jaw, projections on the rear of the movable jaw, an open socket in the lower portion of the projections, the upper portion of the projections being curved, a detachable jaw having a curved shoulder resting on the curved portion of the projections and having a pin engaging the open sockets, substantially as described.
5. The combination of a wrench having fixed and movable jaws, a shank carrying the fixed jaw, a screw-thread on the shank, a nut on the screw-thread and engaging the movable jaw, extensions on the movable jaw, each having an open socket, a detachable jaw, the shank of said jaw fitting between the two extensions and having a pin entering the sockets, and a spring secured to the rear of the movable jaw and bearing against the shank of the detachable jaw, substantially as described.
6. A pipe-cutter having a cutting-wheel whose periphery is eccentric to its axis, substantially as described.
7. The combination of a wrench having movable and fixed jaws, with a cutting-wheel mounted eccentrically on one of said jaws, substantially as described.
8. The combination of movable and fixed jaws, a detachable jaw carried by one of said jaws, and a cutting-wheel mounted eccentrically on the detachable jaw, substantially as described.
9. The combination in a wrench, of a movable and a fixed jaw, a detachable jaw carried by one of said jaws, said detachable jaw having two members, one having a serrated face and the other having a cutting-wheel mounted eccentrically thereon, substantially as described.
10. The combination of a wrench having a fixed and a movable jaw, said fixed jaw having extensions, sockets in the lower portion of the extensions, a curved bearing-face on the upper portion of the extensions, some distance from the face of the jaw, a detachable jaw forming a corner-bearing, the detachable jaw having a shank mounted between said extensions and having a pin resting in the sockets, and a flange resting on the curved portions of the extensions and notched at each end to fit the corner of the movable jaw, said detachable jaw having a serrated face and carrying a cutting-wheel, substantially as described.
11. The combination in a wrench having a fixed and a movable jaw, of a ratcheting-jaw pivoted to one of said jaws, said ratcheting-jaw having a toothed face inclined toward the

back and a slight extension at its rear so shaped that when the wrench is reversed to take a grip the pipe will ride upon the projection, preventing the teeth engaging the pipe, substantially as described.

12. The combination of a wrench, a shank having a screw-threaded portion, a fixed jaw carried by said shank, a movable jaw mounted on the shank and having an undercut lip, a nut mounted on the shank and having an undercut head engaged by the lip, a block secured to the lower portion of the jaw opposite the lip and having a portion engaging the undercut head, substantially as described.

13. The combination of a wrench, a shank having a screw-threaded portion, a fixed jaw carried by said shank, a movable jaw mounted on the shank and having an undercut lip, a nut mounted on the shank and having an undercut head engaged by the lip, a block secured to the lower portion of the jaw opposite the lip and having a portion engaging the undercut head, with a detachable jaw carried by the movable jaw, a spring bearing against the detachable jaw and secured to the movable jaw by the block, substantially as described.

14. The combination in a wrench, of a shank, a fixed jaw thereon, a movable jaw, means for adjusting said movable jaw, a ratcheting-jaw pivoted to the movable jaw and having a curved shoulder fitting the curved portion of the movable jaw, a spring acting on said ratcheting-jaw, the toothed face of said jaw being inclined toward the rear and having a slight extension at the rear on which the pipe rides when the wrench is reversed to take a grip, substantially as described.

15. The combination of a recessed fixed jaw, a shank therefor, a movable jaw mounted on the shank of the fixed jaw, a detachable jaw pivoted to the movable jaw, said detachable jaw having a shank and two members, one member having a serrated face and a projection, the other member carrying a cutting-wheel, a spring bearing against the pivoted jaw, said pivoted jaw having notches at each side to fit the corner of the movable jaw, the pivoted jaw having a slight movement on its pivot, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH G. BAKER.

Witnesses:

WILL. A. BARR,
JOSEPH H. KLEIN.