

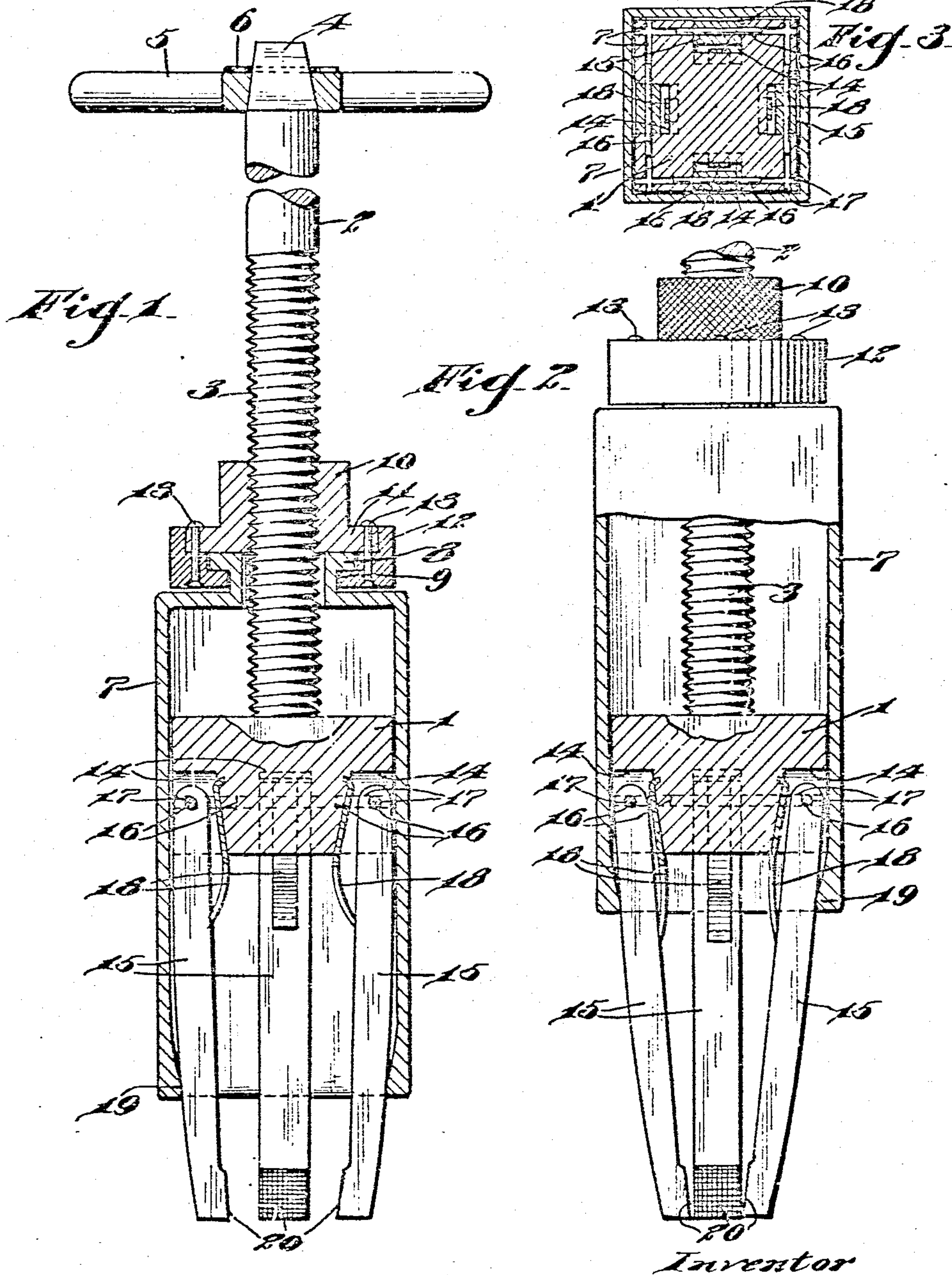
WRENCH.

APPLICATION FILED NOV. 29 1968

Patented Dec. 13, 1910.

2 SHEETS-SHEET 1.

978,208.



Witnesses
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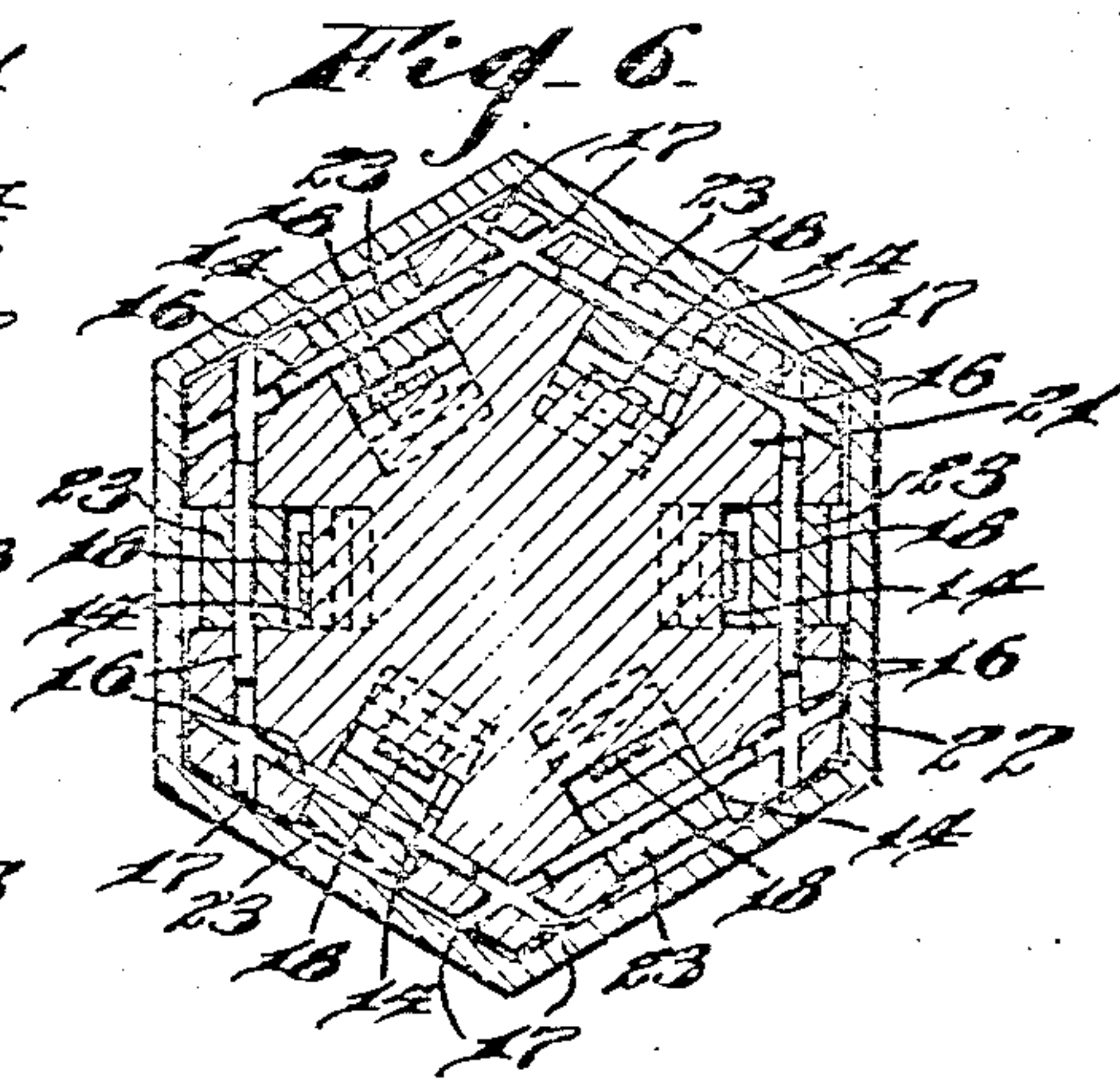
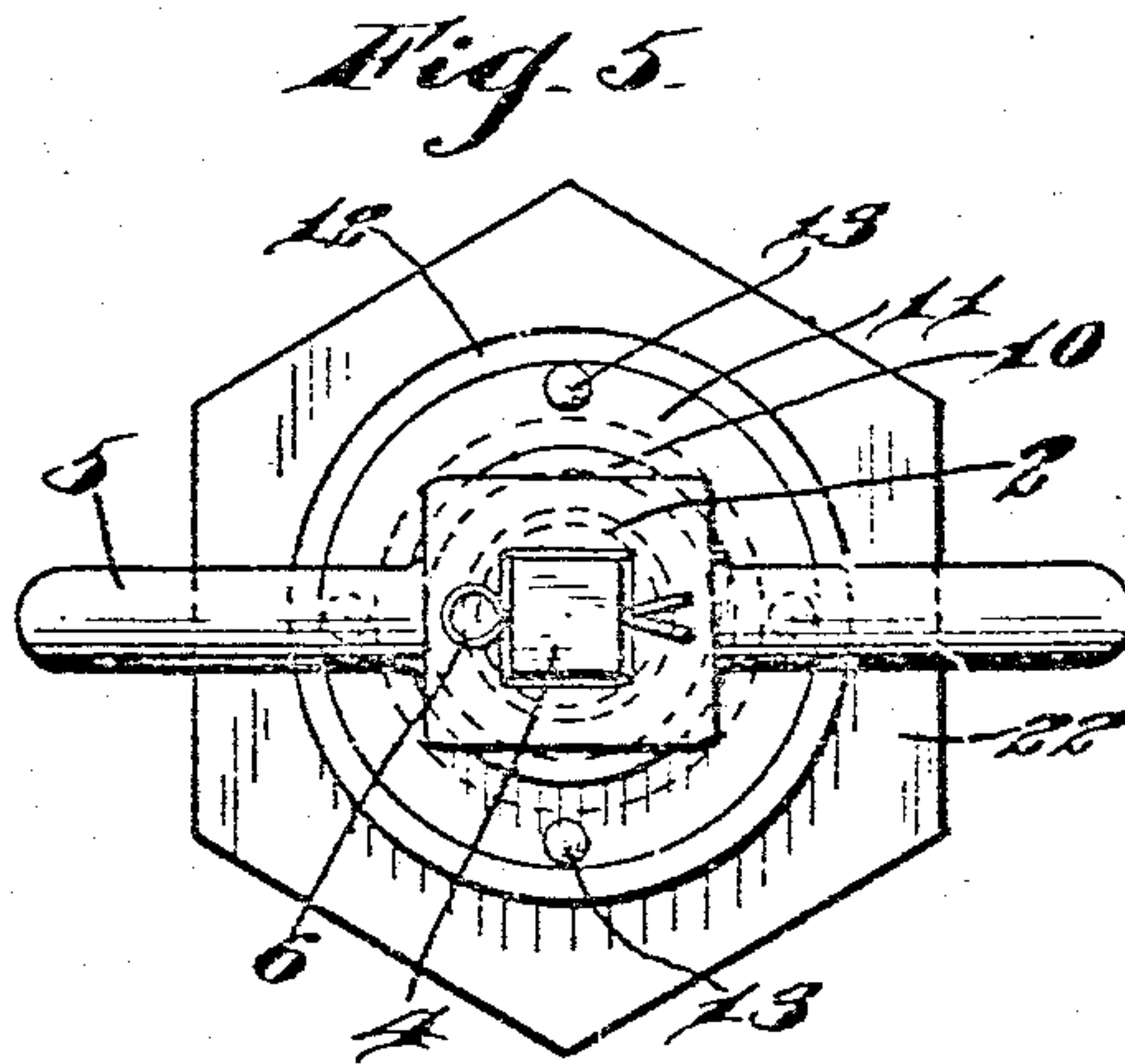
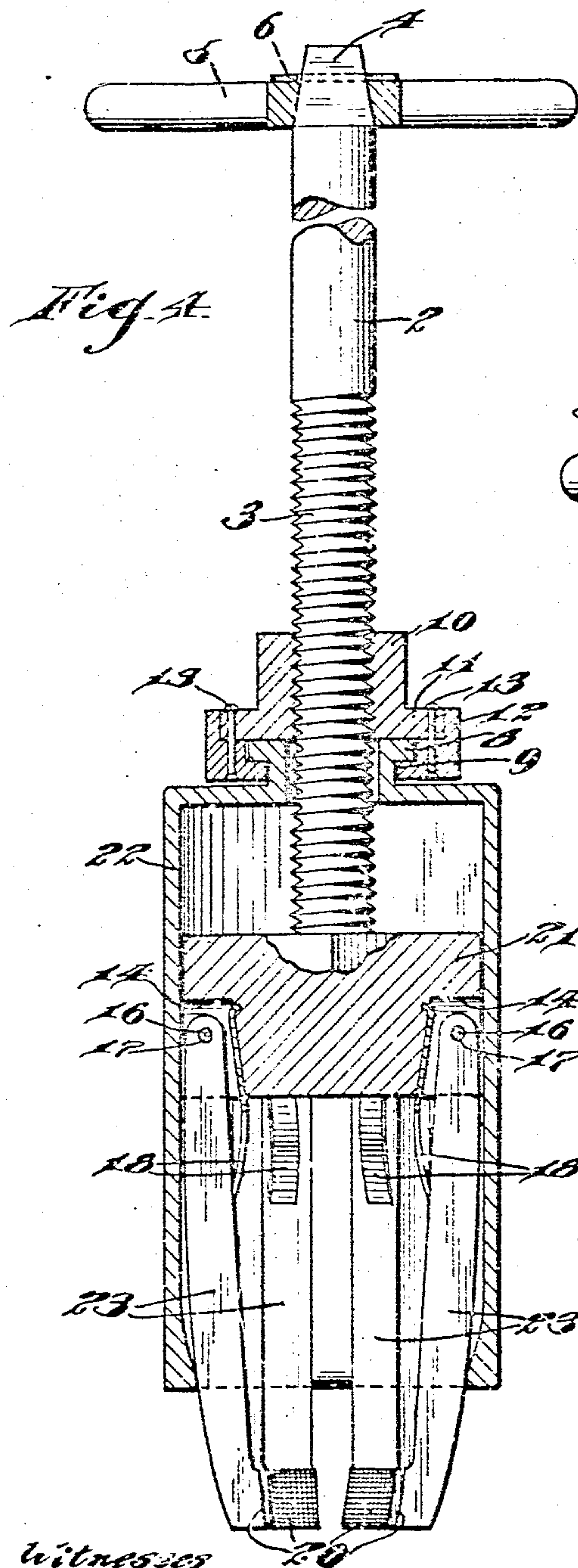
P. REILLY.
WRENCH.

APPLICATION FILED NOV. 29, 1903.

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2 SHEETS—SHEET 2.

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UNITED STATES PATENT OFFICE.

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WRENCH.

978,208.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PATRICK REILLY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to improvements in wrenches, the object of the invention being to provide an improved device of this character which is capable of adjustment, in order to grasp various sizes of nuts, and which is especially adapted for operating nuts in confined spaces, such for example, as the moving and placing of nuts in the bottom portion of car structures, where the workmen must get at the nuts from underneath the car, and where an ordinary wrench is practically useless.

A further object is to provide an improved wrench of this character which can be cheaply manufactured, which can be easily and quickly adjusted, and which will be strong and durable in use.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described and pointed out in the claim.

In the accompanying drawings: Figure 1 is a view partly in elevation and partly in longitudinal section illustrating one form of my improved wrench, the parts being adjusted to engage a larger size of nut. Fig. 2 is a view partly in elevation and partly in longitudinal section of Fig. 1, showing the parts adjusted to engage one of the smaller sizes of nuts. Fig. 3 is a view in cross section on the line 3—3 of Fig. 1. Fig. 4 is a view partly in elevation and partly in longitudinal section of a modified form of wrench adapted for the engagement of hexagonal nuts. Fig. 5 is an end view of Fig. 4, and Fig. 6 is a view in section on the line 6—6 of Fig. 4.

Referring to Figs. 1, 2, and 3, 1 represents a rectangular block which is integral with, or fixed to, a rod 2, the latter screw threaded throughout a portion of its length as shown in 3, and having a tapering angular free end 4, upon which a handle 5 is secured by means of a cotter pin 6. On block 1, a rectangular casing 7 is mounted to slide, is open at one end, and at its other end is pro-

vided with a collar 8, larger than rod 2, and provided with an annular groove 9.

10 is an adjusting nut, having internal screw threads engaging the screw threads 3, and provided at one end with an annular flange 11.

12 represents a coupling ring which overlies flange 11 and is made with an annular internal flange to project into groove 9, and when said ring 12 is secured to flange 11 by means of rivets 13, the turning of nut 10 will compel casing 7 to move longitudinally on block 1.

Block 1 is provided in its four sides, with recesses 14, in which the inner ends of arms 15 are pivotally secured by means of pins 16, which project through openings 17 in the block and through the arms 15. Bow springs 18 are secured in notches in the block 1, and bear at their free ends against the arms 15, pressing the latter outward and against the inner faces of casing 7, the open free end of which latter is preferably slightly enlarged to reduce the internal diameter of the casing as shown at 19. The outer faces of all of the arms 15 are curved as shown, so that when the casing 7 is moved toward the handle 5, the free ends of the arms 15 will be moved toward each other, and their nut engaging faces 20 will be positioned for engaging smaller sizes of nuts. When the sleeve is moved in the opposite direction, that is toward the free ends of arms 15, the arms will be permitted to move apart and be held in this position by means of spring 18, so as to engage the larger sizes of nuts and it will be noted that in this position for engaging larger sizes of nuts, the arms will be more firmly braced by means of the casing, which is of course desirable, as it requires greater strain to turn large nuts than small ones.

In the modification illustrated in Figs. 4, 5, and 6, the construction is precisely like that shown in Figs. 1, 2, and 3 and as above described, with the exception that the block 21, corresponding to block 1 of Fig. 1, is hexagonal in form and the casing 22 corresponding with casing 7, is also hexagonal in form, and there are six arms 23, corresponding with the arms 15. In all other respects this modified structure is precisely like that shown in Figs. 1, 2, and 3, and I have utilized the same reference characters to indicate similar parts on the preferred form and the modification. The operation of the

modification is the same as that of the preferred form, the only difference being that by providing six of these arms 23, they will engage the six faces of a hexagonal nut, while in the preferred form but four arms are necessary to engage the four faces of the ordinary square nut.

Various slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not restrict myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claim.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

In a wrench, the combination with a block, having a plurality of flat faces and recesses corresponding in number to the number of flat faces, a screw-threaded rod fixed to the center of said block, a casing movable on said block and having a plurality of internal

flat faces engaging the flat faces of the block, compelling the block and casing to turn together, a handle on the free end of said rod, arms pivoted in said recesses, flat springs secured in said recesses and pressing said arms outward against the end of said casing, said casing having at its end a reduced internal diameter, and an adjusting nut mounted on said rod, a grooved extension on said casing, and a ring of three internal diameters, the larger internal diameter located over the nut, the intermediate diameter located over the larger diameter of the extension, and the smallest diameter projecting into the groove of the extension, substantially as described.

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

PATRICK REILLY.

Witnesses:

CHAS. E. POTTS,
JOSHUA R. H. POTTS.