

No. 765,569.

PATENTED JULY 19, 1904.

A. G. ELY.  
WRENCH.

APPLICATION FILED JULY 2, 1903.

NO MODEL.

Fig. 1.

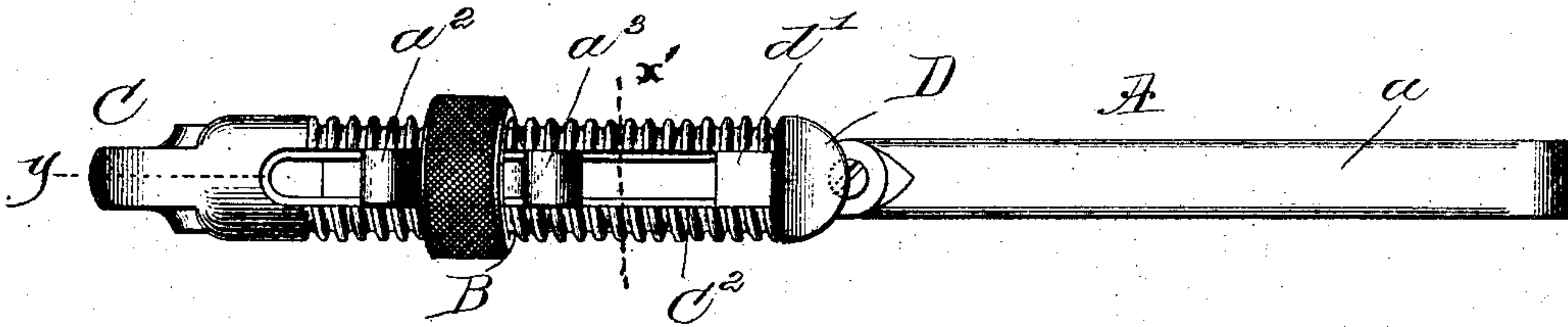


Fig. 2.

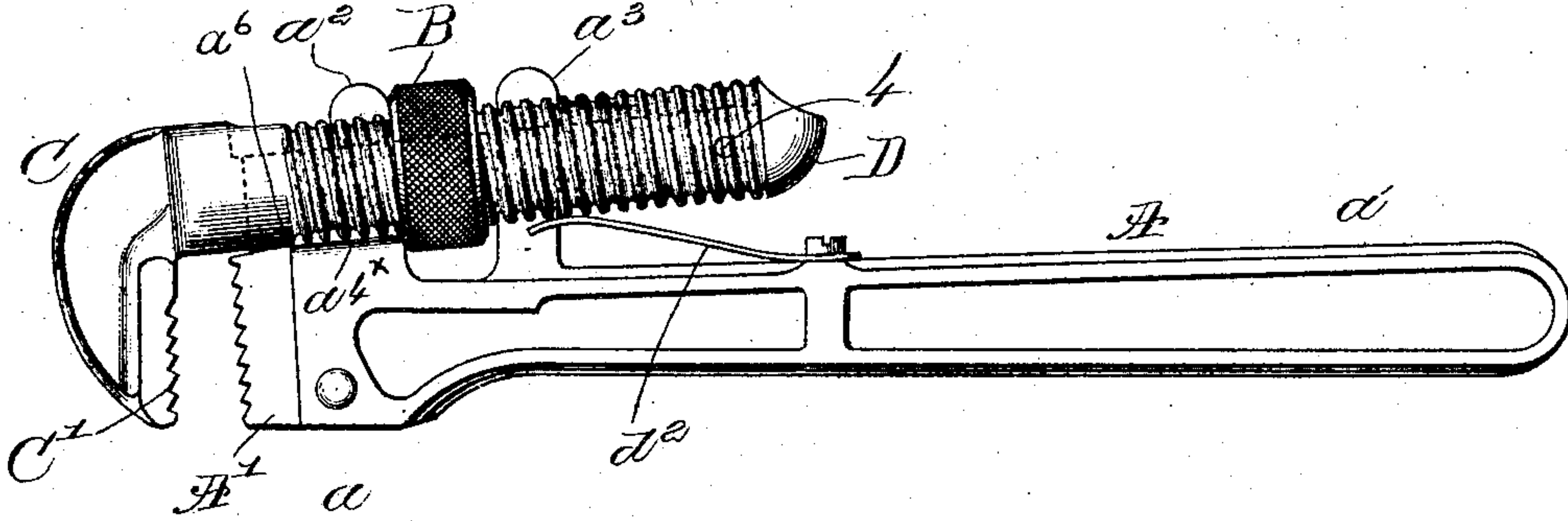


Fig. 3.

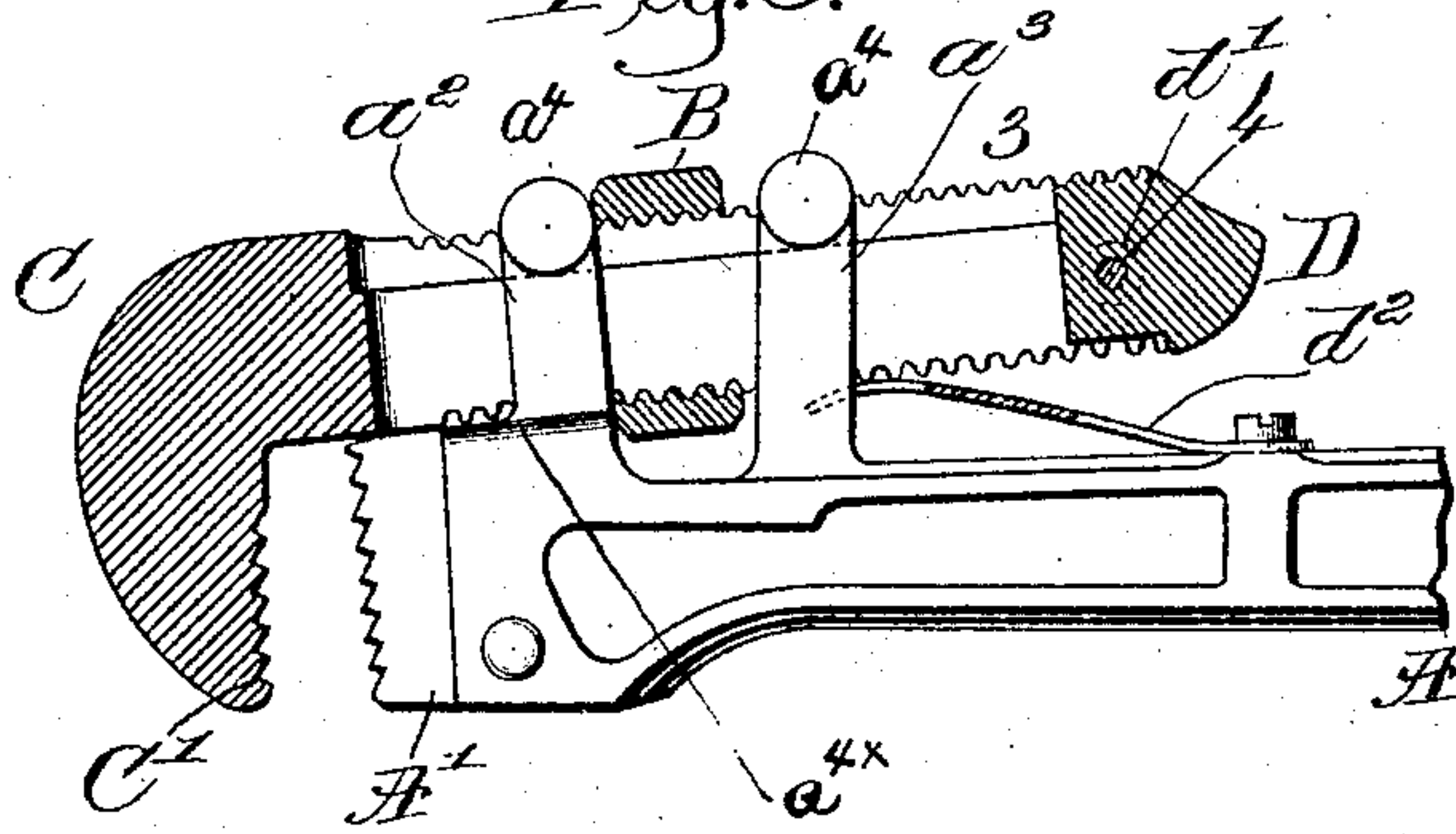
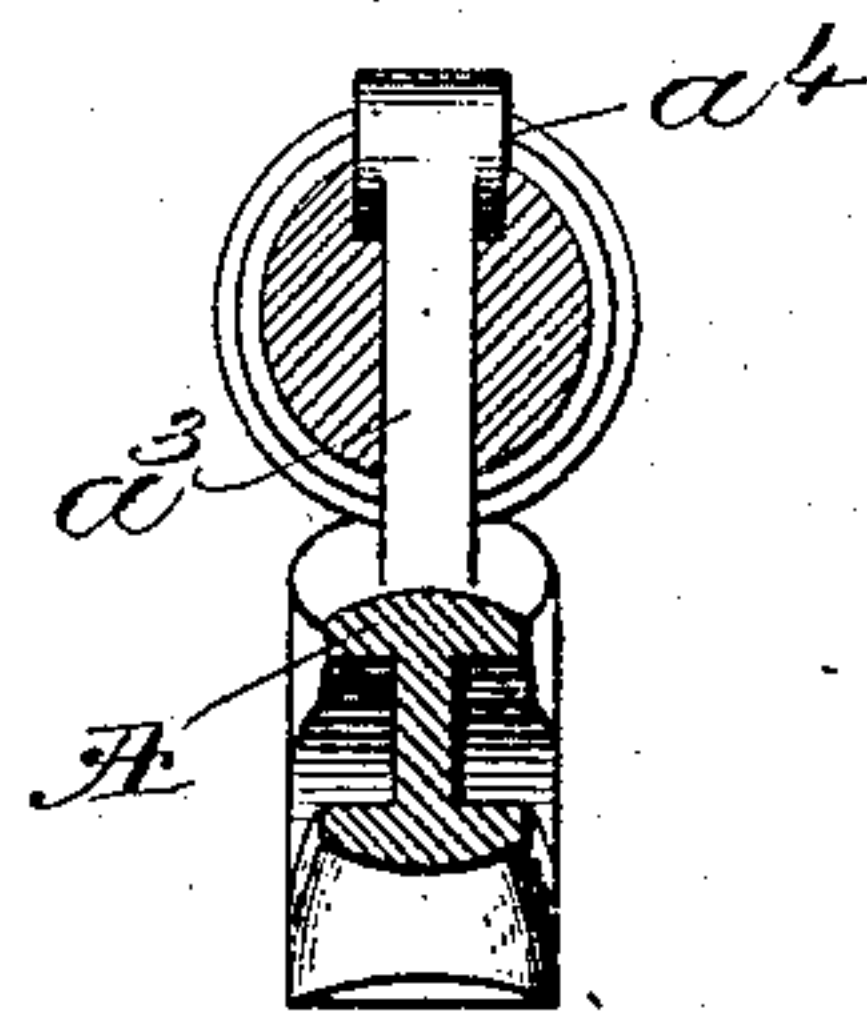


Fig. 4.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## WRENCH.

SPECIFICATION forming part of Letters Patent No. 765,569, dated July 19, 1904.

Application filed July 2, 1903. Serial No. 163,995. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED G. ELY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented an Improvement in Wrenches, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

10 This invention has for its object the production of a novel wrench, the invention being illustrated in a wrench adapted for handling pipe, as well as for other work.

15 My novel wrench includes a handpiece having a guide extended outwardly from the back thereof and a loose jaw having its threaded shank slotted, the slot being in a plane parallel to the length of the face of the loose jaw and substantially central with relation to said jaw, said slot embracing said guide and being free to be slid thereover by a nut.

20 The guide shown comprises two fingers, between which is located the nut embracing the slotted shank of the loose jaw, the rotation of said nut sliding the loose jaw on the handpiece, one or the other of said fingers sustaining one or the other side of said nut, according to the direction in which the nut is being turned, that depending upon the direction it is desired to slide the loose jaw on or with relation to the handpiece. The guide has at its outer end extensions that overhang the guide and contact with that edge of the shank of the loose jaw farthest from the handpiece.

35 Figure 1 is a view of the back of a wrench embodying my invention in one practical form. Fig. 2 is a side elevation thereof. Fig. 3 is a partial section in the line  $y$ , Fig. 1; and Fig. 4 is a cross-section in the line  $x'$ , Fig. 1.

40 The handpiece A, preferably a forging, is provided at its inner end with a jaw A', herein shown as toothed and composed of hardened tool-steel secured in a slot of the handpiece by a screw, rivet, or pin  $a$  in usual manner, so that in case of accident to the jaw it may be removed and a new jaw be placed in the handpiece.

50 The back  $a'$  of the handpiece has an outwardly-extended guide represented as composed of two fingers  $a^2 a^3$ , which are shown as

having enlarged outer ends  $a^4$ . (See Fig. 4.) The guide for the best results will be forged integral with the handpiece, and the fingers will be separated one from the other far enough to receive loosely between them the usual threaded nut B, leaving enough play between the fingers of the guide to enable the loose jaw  $c$  to move when applying the wrench to or withdrawing it from the article to be handled or turned by the wrench. One or the other side of this nut will act upon the inner side of one or the other of the fingers, according to the direction of its rotation and the direction it is desired to slide the loose jaw with relation to the handpiece. The shank of the loose jaw is slotted at  $c^2$  in the direction of its length to embrace and slide on the outwardly-extended guide in the direction of the length of the handpiece, said slot being parallel with the length of the face of the loose jaw and substantially central with relation to the width thereof. To prevent the accidental withdrawal of the loose jaw from the handpiece when the wrench is in use, I have provided the guide with an enlargement  $a^6$ . The longitudinal slot  $c^2$  in the shank of the loose jaw is shown as made wider at its outer edge to leave suitable shoulders 3, against which may bear the projecting or overhanging portions of the enlargements  $a^6$ .

80 I prefer to close the slot  $c^2$  at the end of the shank of the loose jaw by a filler D, herein shown as a metal block having its outer face beveled or concaved to be acted upon by the thumb of the user of the wrench when it is desired to move the jaw in opposition to the spring  $d^2$  to release the jaw from or apply it to a pipe. The filler has a projection  $d'$ , that just fills the slot  $c^2$ , and the filler is held in place by a suitable screw or pin 4, that may be removed when it is desired to remove the filler to withdraw the loose jaw from the guide of the handpiece. The spring employed with the wrench when used for turning pipe may be of any usual shape, this invention not being limited to any particular shape of spring.

95 Viewing Figs. 2 and 3, it will be noticed that the jaw has a shoulder  $a^6$ , and the handpiece at the base of the finger  $a^2$  has a projecting shoulder  $a^{4x}$ . These shoulders by 100



contacting when the wrench is being subjected to strain in use act to prevent any overstraining of the loose jaw, the left-hand side (see Fig. 3) of the nut at such time acting  
 5 against the inner or right-hand side of the finger  $a^2$ , which when the wrench is used only for round objects will be inclined with relation to the longitudinal axis of the handpiece in order that part of the strain on the wrench may  
 10 be borne by the nut, and in this way the strain of the nut on the thread is uniform throughout. The loose jaw will also preferably be a one-piece forging; but my invention would not be departed from if the loose jaw were made in  
 15 two pieces divided on the dotted line  $y$ , Fig. 1, and attached together by suitable strong rivets, and in such event the toothed surface of the loose jaw may be made as the toothed surface  $A'$  of the handpiece and be clamped between the two halves of the loose jaw and also  
 20 held therein in position by a suitable rivet.

If the wrench having the slotted jaw is to be used as a monkey-wrench, the opposed faces of the jaws need not be toothed and the  
 25 contiguous sides of the fingers  $a^2$   $a^3$  at opposite sides of the nut will be substantially parallel and be removed one from the other for substantially the width of the nut  $B$ , and in this event the spring  $d^2$  may be omitted.

30 It will be especially noticed in my novel wrench that the guide over which the slotted shank of the loose jaw is free to be moved longitudinally is extended outwardly from the back of the handpiece and occupies a position substantially central with relation to the  
 35 thickness of said handpiece and that the slot in the shank of the loose jaw embracing said outwardly-extended guide is parallel to the length of the face of the loose jaw. The slot  
 40 in the shank of the loose jaw is extended entirely through from its top to its bottom side, so that the guide may pass entirely through said slot, the overhanging ends of the enlargements at the outer end of the guide crossing  
 45 the slot and contacting with the shank of the slotted jaw to retain the same on the guide. It will also be noticed that the threads shown extend from the edges of the slot about the sides of the shank of the loose jaw.

50 Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a wrench, a handpiece presenting at one end a jaw and having a guide extended  
 55 outwardly from the back thereof centrally of the thickness of said handpiece, a loose jaw having a threaded shank slotted parallel to the length of the face of said jaw to straddle said guide, and a threaded ring-nut embracing said slotted and threaded shank.

2. A wrench comprising a handpiece having a toothed jaw at one end, and having at one edge a guide represented as a finger having an enlargement at its end, and a loose jaw hav-  
 65 ing its shank slotted and embracing said fin-

ger, the enlargement of the finger being adapted to contact with a shoulder inside the slotted part of said loose jaw.

3. A wrench comprising a handpiece having a toothed jaw at one end, and a guide composed of a plurality of fingers, a loose jaw having its shank slotted longitudinally to embrace said fingers, and a threaded nut encircling the loose jaw and located between said fingers, the finger nearest the toothed jaw of the hand-  
 75 piece at its side farthest from the toothed jaw being inclined.

4. A wrench comprising a handpiece having a jaw, a guide projecting from the back of the handpiece, and a loose jaw having its shank  
 80 slotted and threaded, the slot embracing the guide, a nut embracing the loose jaw between different parts of the guide, and a filler closing the slot at the end of the loose jaw.

5. A wrench comprising a handpiece having  
 85 a jaw and fingers extended therefrom and provided with enlargements at their outer ends, said handpiece having an abutment, and a loose jaw having its shank slotted and threaded and embracing said guide, and a spring act-  
 90 ing normally to keep the face of the loose jaw pressed toward the jaw of the handpiece, said enlargements and abutment acting upon the loose jaw at its outer and inner edges at different points of the length of the jaw during  
 95 strain on the jaw when turning a pipe.

6. A handpiece having a finger arranged in line with the length of the handpiece and extended substantially centrally of the thickness of the handpiece, said finger having an en-  
 100 largement, and a slotted loose jaw having smooth edges located within said slot, and between the threaded edges of the slotted part of said loose jaw, said projection contacting with said smooth edge.

7. In a wrench, a handpiece having a jaw at one end, and provided with a guide extending from the handpiece substantially central of the thickness of the handpiece, and a threaded loose jaw having its shank slotted parallel to  
 110 the length of the face of the loose jaw to embrace and slide over both sides of said guide, and a nut embracing the slotted shank of said loose jaw.

8. In a wrench, a handpiece having a jaw at  
 115 one end, and provided with a guide extending from the handpiece substantially central of the thickness of the handpiece, and a threaded loose jaw having its shank slotted parallel to the length of the face of said jaw and in a line  
 120 substantially central with relation to the width thereof to embrace and slide over both sides of said guide, and a nut embracing the slotted shank of said loose jaw, and a filler closing the slot at the end of the loose jaw.

9. In a wrench, a handpiece having at one end a jaw and at one edge a guide provided at its end with an enlargement extended out-  
 125 wardly from both sides of said guide, and a jaw having a threaded and longitudinally- 130



slotted shank to embrace both sides of said guide, and a threaded nut surrounding said threaded and slotted jaw, said nut in its rotation contacting with a projection of said hand-  
5 piece to move said loose jaw on the handpiece and with relation to its jaw, to adapt the wrench to different-sized work.

10 10. A wrench comprising a handpiece provided at one end with a jaw and having extended centrally from the edge thereof outwardly a guide having at its outer end an enlargement, and a loose jaw having a threaded shank provided with a slot parallel to the length of the face of said loose jaw and sub-

stantially in line with the center of the width 15 of the face of said jaw, said slot embracing said guide, the outer sides of said slotted shank presenting screw-threads terminating substantially at the upper and lower edges of said slot, and a nut embracing said threaded 20 shank.

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

ALFRED G. ELY.

Witnesses:

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EDITH M. STODDARD.