

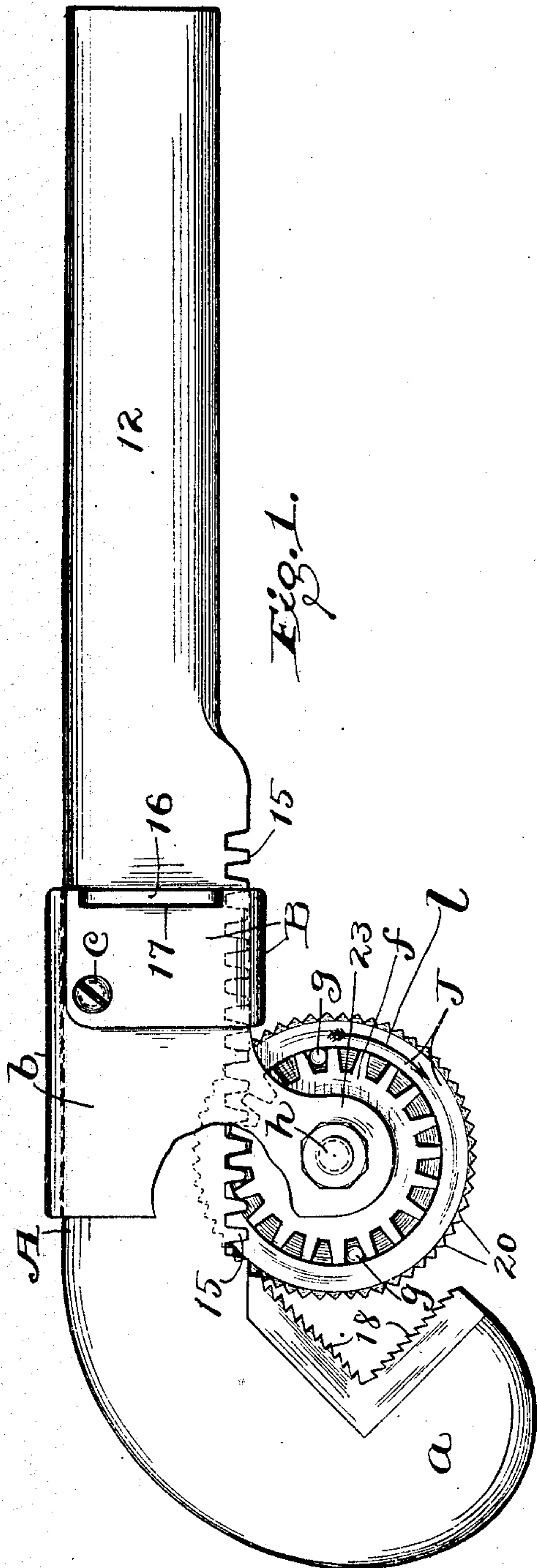
No. 870,781.

PATENTED NOV. 12, 1907.

G. HECKLING.
PIPE WRENCH.

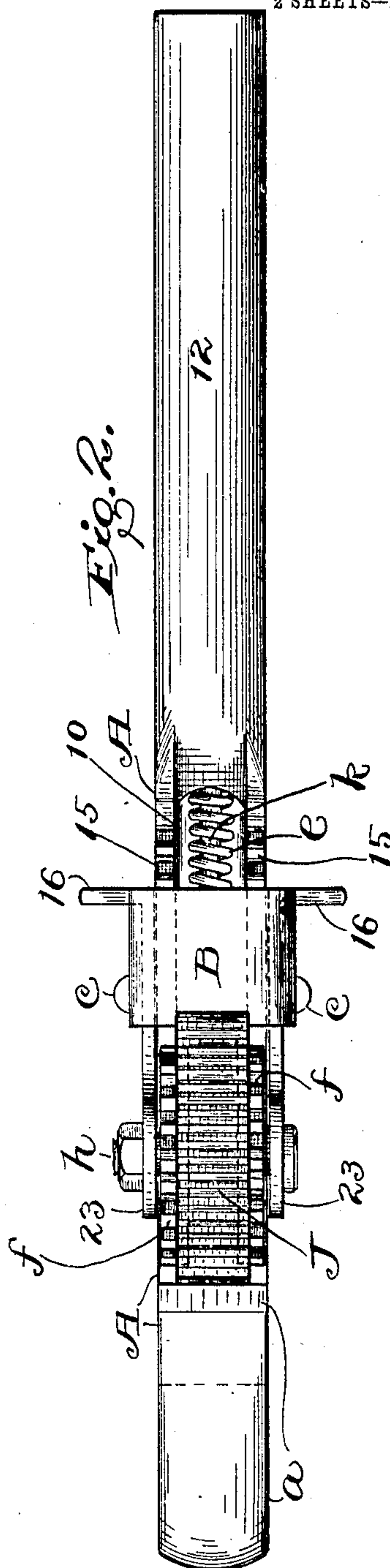
APPLICATION FILED MAY 16, 1906.

2 SHEETS--SHEET 1.



WITNESSES:

Daniel E. Daly.
 B. C. Brown.



INVENTOR

INVENTOR
George Heckling
BY
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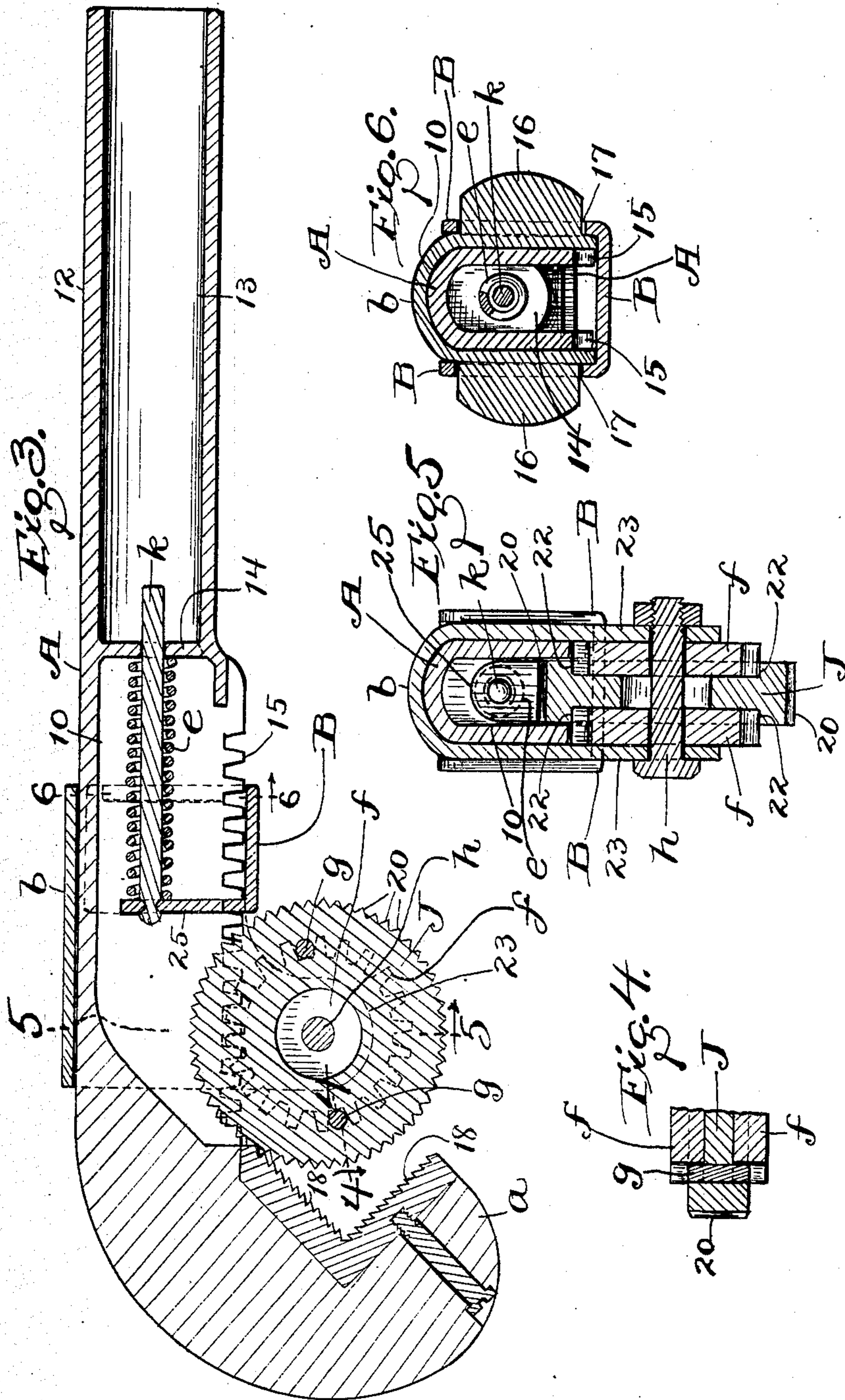
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UNITED STATES PATENT OFFICE.

GEORGE HECKLING, OF CLEVELAND, OHIO.

PIPE-WRENCH.

No. 870,781.

Specification of Letters Patent.

Patented Nov. 12, 1907.

Application filed May 15, 1906. Serial No. 316,948.

To all whom it may concern:

Be it known that I, GEORGE HECKLING, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Pipe-Wrenches; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

10 This invention relates to improvements in pipe-wrenches.

The object of this invention is to provide a pipe-wrench which is simple and durable in construction and exceedingly efficient and reliable in its operation.

15 With this object in view, and to the end of realizing other advantages hereinafter appearing, this invention consists in certain features of construction, and combinations of parts, hereinafter described and pointed out in the claims.

20 In the accompanying drawings, Figure 1 is a side view of a pipe-wrench embodying my invention, and a portion of the jaw-bearing sleeve is broken away in this figure to more clearly show the construction. Fig. 2 is a bottom plan relative to Fig. 1. Fig. 3 is a 25 central longitudinal section of the wrench. Fig. 4 is a section in detail on line 4—4, Fig. 3, looking in the direction indicated by the arrow. Fig. 5 is a transverse section on line 5—5, Fig. 3, looking in the direction indicated by the arrow. Fig. 6 is a transverse 30 section on line 6—6, Fig. 3, looking in the direction indicated by the arrow.

Referring to the drawings, A indicates the shank of the tool. The shank A is provided (see Figs. 2, 3, 5 and 6) with a recess 10 which is formed in the shank 35 in any approved manner and extends a suitable distance longitudinally of the shank. Preferably the recess 10 extends from the forward end of the shank rearwardly to a point about centrally between the ends of the shank. That portion of the shank rearward of the recess 10 forms a handle 12. The handle-forming portion of the shank is hollow, with the interior chamber 13 formed in the handle-forming portion 40 extending from the inner end to the outer extremity of the handle. The shank A is provided between its 45 handle-forming portion and the recess 10 and interiorly (see Fig. 3) with a web 14 which extends transversely of the shank. The shank A is provided with two correspondingly parallel racks 15 arranged at opposite sides respectively of and extending longitudinally of the recess 10. The racks 15 are arranged 50 therefore longitudinally of the shank and extend approximately from end to end of the recess 10.

A sleeve is mounted on and movable endwise of the recessed portion of the shank A and preferably consists of two U-shaped sections B and b oppositely 55 arranged and suitably secured together, and straddling

the shank from opposite sides respectively, with the sleeve-section B also straddling the sleeve-section b and preferably secured to the latter by suitably applied screws c. Preferably the end members of the sleeve-section b are provided at the rear end of the sleeve 60 with laterally and outwardly projecting flanges 16 which snugly engage and extend through and a suitable distance beyond the outer sides of slots or recesses 17 formed in the end-members of the sleeve-section 65 B. The flanges 16 engaging with the slots or recesses 17 not only participate in holding the two sleeve-sections in position relative to each other but afford means for conveniently taking hold of the sleeve in shifting the sleeve endwise of the shank. 70

A rotatable jaw J is borne by the sleeve at the rack-forming side of the shank A and extends or projects into the recess 10. The jaw J is arranged opposite the relatively stationary jaw a formed forward of the jaw J upon the forward end of the shank A. The jaw a projects 75 therefore laterally of the rack-forming side of the shank A and is arranged forward of the forward end of the recess 10. The sleeve is normally in its forward position wherein the rotatable jaw J abuts against the inner end of the relatively stationary jaw a. The jaw 80 a has suitably serrated work-engageable surfaces 18. The rotatable jaw J consists of an annular disk having a suitably serrated peripheral surface, with the peripheral teeth 20 of the jaw arranged parallel with the axis of the jaw. Preferably a suitably applied spiral 85 spring e (see Figs. 3 and 6) acts to retain the sleeve in its forward and normal position. Two corresponding pinions f (see Figs. 1, 2 and 5) mesh with the racks 15 and are borne by the sleeve. The rotatable jaw J has 90 its central portion interposed between the two pinions. The jaw J is larger diametrically than the pinions, and the outer portion of the said jaw extends around or embraces the inner ends of the pinions, as at 22, Fig. 5. Only the outer ends of the pinions therefore mesh with the racks. The jaw J is arranged with its axis coincident 95 with the axes of the pinions. One or more pins g (see Figs. 1, 3 and 4) extend through the rotatable jaw J into the pinions. Each pin g is preferably arranged with one of its ends projecting between the adjacent portions of adjacent teeth of one of the pinions, and 100 with its other end projecting between adjacent portions of adjacent teeth of the other pinion. The pins g lock the jaw J to the pinions so that the said jaw can not rotate independently of the pinions. The two pinions are loosely mounted on an axle h which is supported 105 from ears 23 formed upon the sleeve-section b.

The sleeve-section B (see Fig. 3) is provided at its inner end with an arm 25 which projects inwardly into the recess 10 and is provided at its inner end with a pin k arranged longitudinally of the shank A and projecting rearwardly from the said arm toward the handle-forming portion 12 of the shank. The pin k is at- 110

tached to the sleeve-arm 25 in any approved manner and extends loosely through and is guided by the web 14 within the shank. The spring *e* is mounted and confined upon the pin *k* between the sleeve-arm 25 and 5 the web 14.

By the construction hereinbefore described it will be observed that in applying the wrench the sleeve is actuated toward the outer end of the handle-bearing portion of the shank to accommodate the location of the 10 pipe or work to be gripped between the two jaws *a* and *J*; that the said jaws cooperate with each other in gripping the work; that during the manipulation of the wrench any tendency to turn the jaw *J* and connected pinions in the direction indicated by the arrow *l* in 15 Fig. 1 while the jaws are gripping the work tends to cause the jaws to still more tightly grip the work, and that the pinions *f* and racks 15 constitute means for effectually preventing rearward movement of the sleeve during the work-gripping operation of the jaws.

20 What I claim is:—

1. In a pipe-wrench, the combination, with the shank provided with two corresponding parallel racks arranged longitudinally of the shank, which shank terminates at its forward end in a work-gripping jaw; a sleeve mounted 25 on and movable endwise of the shank and normally in its forward position; means acting to retain the sleeve in its normal position; two corresponding pinions meshing with the racks and borne by the sleeve, and a rotatable jaw adapted to cooperate with the first-mentioned jaw in grip-

ping the work and having its central portion interposed 30 between the pinions, said rotatable jaw being arranged with its axis coincident with the axes of the pinions and larger diametrically than the pinions, of a pin extending through the rotatable jaw adjacent the periphery of the pinions and occupying the adjacent portion of the space 35 between adjacent teeth of each pinion.

2. A pipe-wrench comprising the following:—a shank which has a recess extending a suitable distance longitudinally of the shank, which shank terminates at the forward end of the recess in a work-gripping jaw and terminates at the rear end of the recess in a handle-forming 40 portion; a sleeve mounted on and movable endwise of the recessed portion of the shank, which sleeve is normally in its forward position; means acting to retain the sleeve in its forward position; a rotatable jaw borne by the afore- 45 said sleeve and adapted to cooperate with the first-mentioned jaw in gripping the work, and means whereby the rearward movement of the sleeve during the work-gripping operation of the jaws is prevented, and the said sleeve 50 being formed in two sections suitably secured together and straddling the shank from opposite sides respectively, one of the sleeve-sections straddling the other sleeve-section and provided with slots arranged at and transversely of opposite sides respectively of the shank, and the last- 55 mentioned sleeve-section being provided with laterally and outwardly projecting flanges engaging and extending through the said slots.

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses.

GEORGE HECKLING.

Witnesses:

C. H. DORER,
B. C. BROWN.