

No. 733,617.

PATENTED JULY 14, 1903.

N. BOULANGER.
PIPE WRENCH.

APPLICATION FILED NOV. 17, 1902.

NO MODEL.

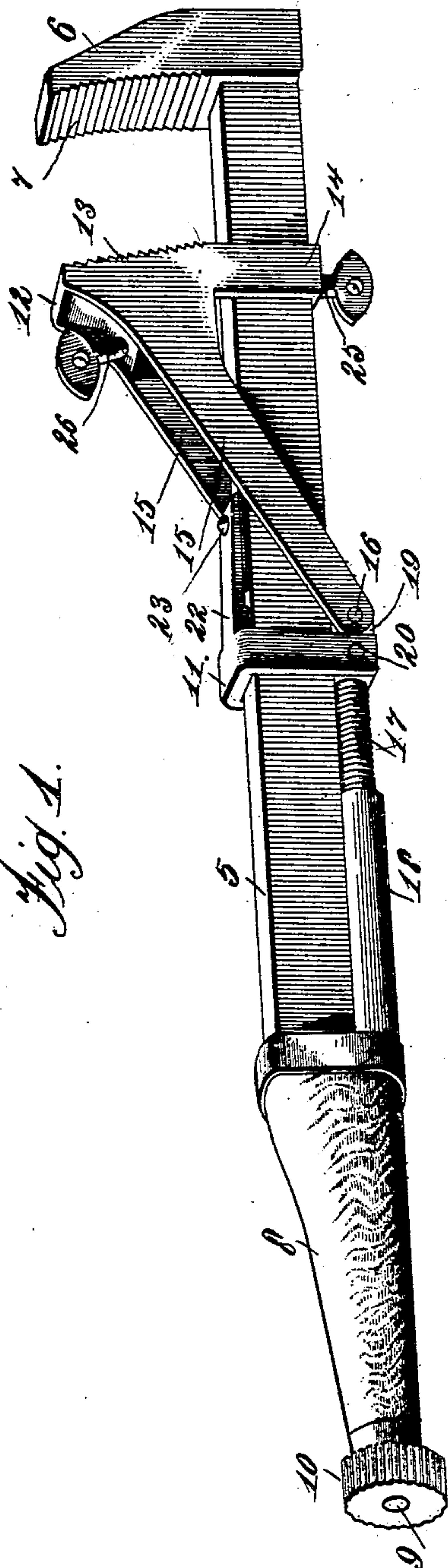


Fig. 1.

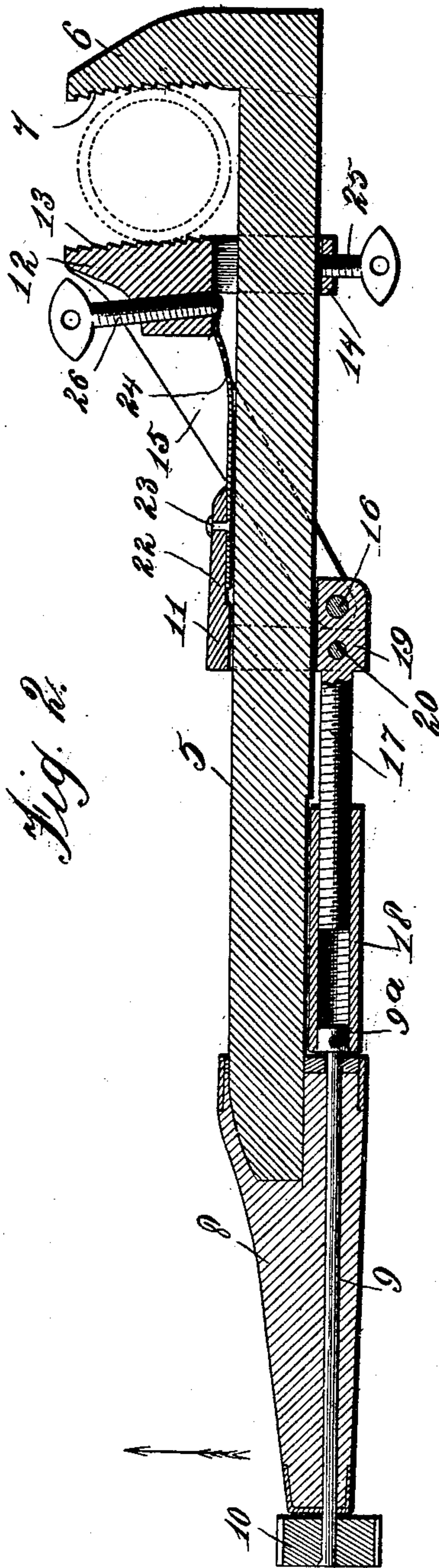


Fig. 2.

Witnesses:

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UNITED STATES PATENT OFFICE.

NARCISSE BOULANGER, OF BLACK LAKE, CANADA.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 733,617, dated July 14, 1903.

Application filed November 17, 1902. Serial No. 131,627. (No model.)

To all whom it may concern:

Be it known that I, NARCISSE BOULANGER, a subject of His Majesty the King of Great Britain, residing at Black Lake, county of Megantic, Province of Quebec, Canada, have invented certain new and useful Improvements in Pipe-Wrenches; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in pipe-wrenches; and the object in view is to provide an improved construction which when used on pipes of a certain kind may be allowed to automatically grip the pipe with increasing pressure proportionately to the increase in the power applied, and, furthermore, to provide means which will limit or arrest the degree of automatic adjustment and the pressure upon the pipe exerted by an element of the improved wrench, whereby the wrench when used on pipes of soft metal will not crush, break, or otherwise injure the same.

With these ends in view the invention consists in the novel construction and arrangement of parts, which will be hereinafter fully described and claimed.

In the drawings hereto annexed, forming a part of this specification, Figure 1 is a perspective view of a pipe-wrench embodying my invention. Fig. 2 is a longitudinal sectional elevation of the same.

Like numerals of reference denote like parts in each figure of the drawings.

5 designates the bar or shank of the improved wrench, the same being provided with a rigid jaw 6 at one end, said jaw having a serrated working face 7. The other end of the shank or bar is equipped with a handle 8, through which extends a rotary adjusting-stem 9, having a thumb-wheel 10 at its protruding end.

11 designates a slide or clasp which embraces the shank or bar snugly and is capable of a free movement or adjustment lengthwise thereon. With this slide is associated the adjustable jaw 12, the same having a serrated working face 13, which is in opposing relation to the corresponding working face of the permanent jaw 6. Said movable jaw is pro-

vided with a yoke 14 and with a pair of arms or plates 15, the latter arranged at an angle to the yoke and extending for a considerable distance from the jaw. The yoke and the arms of said movable jaw are arranged to embrace the shank or bar 5 of the wrench, but this movable jaw has a pivotal connection at 16 with the slide 11, and the yoke is so spaced with relation to the jaw 12 that the parts loosely embrace the shank or bar, whereby the slidable jaw 12 is also capable of a limited rocking or swaying movement on the axis afforded by the pivot 16.

Any means known to the art may be employed for adjusting the slidable jaw; but in the drawings I have represented an operative means for this purpose, the same consisting of a screw 17 and the elongated nut or sleeve 18, said parts being threaded and screwed together, as more clearly represented by Fig. 2. The screw is provided with a head 19, which is fitted within the slide 11 and which has the pivot-pin 16 for the movable jaw connected therewith, said headed end of the screw being secured to the slide by the pin, bolt, or screw 20. The sleeve or nut 18 is connected with or secured fast to a headed end 9^a of the operating-stem 9, and said sleeve 18 may be grasped by the operator's fingers, so as to be turned thereby in order to adjust this screw and the slidable jaw, or said sleeve 18 may be rotated by manipulating the thumb-wheel 10, the motion of which is communicated by the stem 9 to said sleeve.

The slide 11 is provided with a tongue 22, arranged to extend toward the inclined arms of the slidable jaw, and to this tongue is secured at 23 a leaf-spring 24, said spring being movable with the slide and the jaw 12 and the free end of the spring being seated against the jaw in order to normally force said jaw away from the shank and draw the yoke 14 into engagement with the shank, as clearly shown by Fig. 2.

The means for limiting the oscillating or rocking movement of the slidable jaw on the pivot 16 or for locking said jaw in its adjusted position consists of the clamping-screws 25 26, the former of which is mounted in the yoke 14 so as to impinge the rear side of the shank or bar 5, while the other screw 26 is mounted in a solid portion of the jaw 12, within the

serrated face 13 thereof, and either of these screws may be adjusted so as to engage with the shank or bar in order to limit the rocking movement of the jaw or to prevent the jaw
5 from having any rocking movement on the pin 16, according to the nature of the pipe or work to which the wrench is applied.

In using the wrench on hard-metal pipes which are not likely to be fractured by the
10 pressure exerted by the wrench the sliding jaw is adjusted by manipulation of the sleeve until it will cooperate with the permanent jaw in engaging with the work, and the screws 25 26 are manipulated so as to withdraw them
15 from engagement with the bar, thus permitting the pivoted jaw to be free to have the oscillating or rocking adjustment. Pressure is applied to the wrench to turn the latter in the direction indicated by the arrow *m* in Fig.
20 2, and this movement thrusts the jaw 12 inwardly toward the shank and against the tension of the spring 24, whereby the jaw 12 cooperates with the permanent jaw in gripping the work under increasing pressure, and
25 the increase of pressure exerted by the implement secures a tighter gripping of the work between the jaws. This operation is very advantageous in manipulating work of the class described; but on using the wrench on soft-
30 metal pipes the latter is liable to be crushed or broken by the undue application of pressure owing to the automatic movement of the jaw 12. To overcome this objection the wrench is used by adjusting the jaw 12 length-
35 wise on the shank until the work is properly engaged, and then the set-screws 25 26, or either of them, may be manipulated in order to lock the jaw 12 against the oscillating movement on the pivot 16.

40 Changes within the scope of the appended claims may be made in the form and proportion of some of the parts while their essential features are retained and the spirit of the invention is embodied. Hence I do not desire to
45 be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

Having thus described my invention, what I claim as new is—

50 1. In a pipe-wrench, in combination, a shank comprising a fixed jaw, a slide movably mounted upon said shank, a second jaw pivotally attached to said slide and cooperating with

said first jaw, said second jaw comprising a yoke surrounding said shank, a spring at-
55 tached to said slide and constraining said second jaw, and adjusting-screws carried by said second jaw the tips whereof lie respectively adjacent to the opposite sides of said shank, substantially as described. 60

2. In a pipe-wrench, in combination, a shank comprising a fixed jaw, a slide mounted upon said shank, means for advancing said slide along said shank, a movable jaw pivotally at-
65 tached to said slide, and cooperating with said fixed jaw, said movable jaw comprising a yoke surrounding said shank, a leaf-spring carried by said slide, the tip whereof rests against the inner side of said movable jaw, an adjusting-
70 screw mounted in said movable jaw beyond the tip of said spring, and a second adjusting-screw mounted in said yoke, the tips of said adjusting-screws respectively lying adjacent the opposite sides of said shank, substantially as described. 75

3. In a pipe-wrench, in combination, a shank comprising a fixed jaw, a slide movably mount-
80 ed upon said shank, a movable jaw pivotally mounted upon said slide and having a face cooperating with said fixed jaw, and a pair of adjusting-screws carried by said movable jaw, the tips whereof respectively lie adjacent to the opposite sides of said shank, whereby the angular position of said movable jaw may be
85 adjusted with respect to said slide, substantially as described.

4. In a pipe-wrench, in combination, a shank comprising a fixed jaw, a slide carried upon said shank, means for adjusting the same lon-
90 gitudinally upon the said shank, a second jaw pivotally carried by said slide and having a face cooperating with said fixed jaw, a leaf-spring carried by said slide and constraining said movable jaw toward an extreme position, and a pair of adjusting-screws carried by said
95 movable jaw, the extremities whereof lie adjacent respectively to the opposite sides of said shank, whereby the angular position of said face may be adjusted into different fixed po-
100 sitions, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

NARCISSE BOULANGER.

Witnesses:

NORBERT COUTURE,
GEORGES LAGNEUX.