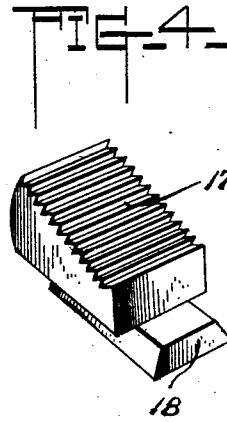
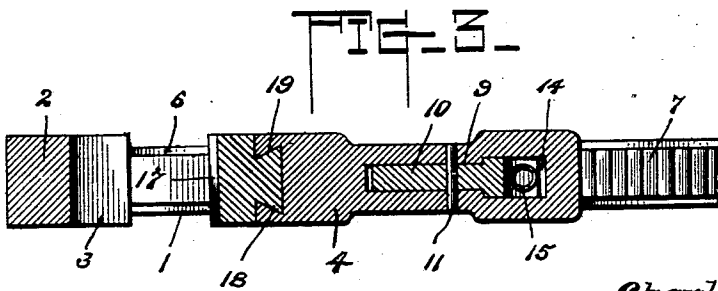
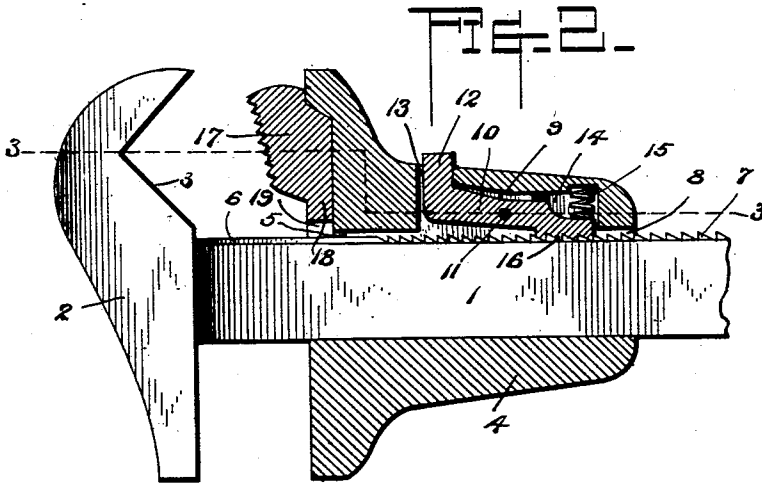
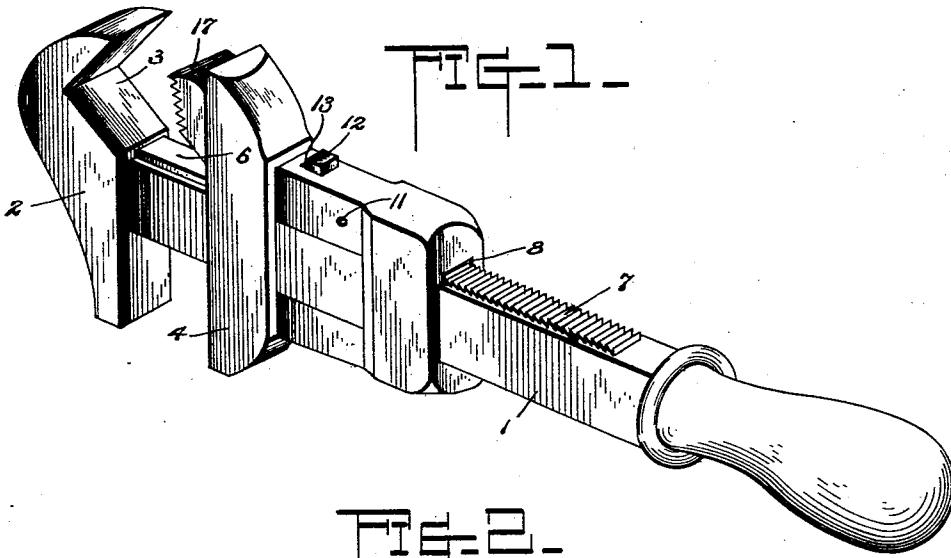


(No Model.)

C. A. BIGELOW & T. C. GATES
WRENCH.

No. 573,806.

Patented Dec. 22, 1896.



Witnesses

Amoryton

Amoryton

By *their* Attorneys,

Calnow & Co.

Inventors
Charles A. Bigelow and Thomas C. Gates

UNITED STATES PATENT OFFICE.

CHARLES A. BIGELOW, OF PARKER CITY, AND THOMAS C. GATES, OF HOODVILLE, PENNSYLVANIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 573,806, dated December 22, 1896.

Application filed August 13, 1896. Serial No. 602,668. (No model.)

To all whom it may concern:

Be it known that we, CHARLES A. BIGELOW, residing at Parker City, in the county of Armstrong, and THOMAS C. GATES, residing at Hoodville, in the county of Venango, State of Pennsylvania, citizens of the United States, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to improvements in wrenches.

The object of the invention is to provide a wrench which is adapted for use both upon nuts and the like and pipes, to so construct the wrench as to permit the same being readily and quickly adjusted to suit various requirements, and, further, to embody in the construction of the wrench a gripping-head adapted to be easily removed when desired to replace the same either by a new one or a head of a different shape or for other purposes.

With these objects in view the invention consists, substantially, in the construction, combination, and arrangement of parts, as will be hereinafter fully illustrated, described, and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a wrench constructed in accordance with the present invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a transverse sectional view on the line 3 3, Fig. 2. Fig. 4 is a detail perspective view of the removable gripping-head.

Similar numerals of reference indicate corresponding parts throughout the figures.

Referring to the drawings, 1 designates a shank which is provided at one of its ends with a T-shaped head 2, the inner face of one end of said head being squared and the other end having its inner face provided with a notch 3, said ends being so formed as to adapt the same for application to nuts and the like and pipes; and it will be noted that said T-shaped head 2 constitutes the rigid jaw of the wrench.

Mounted upon the shank 1 is a sliding jaw 4, said jaw being provided with a longitudinal passage 5, which is adapted to receive the shank 1 and thereby permit the sliding jaw moving on said shank, and said sliding jaw 4 at one of its ends and at each side of the

shank 1 is laterally extended, so as to correspond with the ends of the T-shaped head 2, the portion of the jaw 4 from the extended sides to the other end forming a handle by which said jaw may be moved.

Formed on one of the sides of the shank 1, and extending throughout the length thereof, is a ridge 6, upon which is provided a series of teeth 7, and the sliding jaw 4 at one side of the longitudinal passage 5 has a guide 8, which guide receives the ridge 6 and is of such size as to permit the sliding jaw readily passing along said ridge. Intermediate the ends of the sliding jaw 4, and opening into the longitudinal passage 5 at the side where in the guide 8 is formed, is a chamber 9, in which is fulcrumed a locking-catch 10 by means of a pin 11, said catch having formed at one of its ends a right-angled stem 12, which passes through an opening 13, leading from the chamber 9, and thereby permits said stem 12 to project at one side of the sliding jaw 4 and be operated in order to release the locking-catch.

The end of the locking-catch 10 opposite to the right-angled stem 12 is slightly enlarged and is disposed in a socket 14, formed at the end of the chamber 9 opposite to the opening 13, a coil-spring 15 or its equivalent being also arranged in said socket 14 and exerting its tension to normally force the enlarged end of the locking-catch 10 against the ridge 6, and it will be observed that said enlarged end of the locking-catch 10 is provided with teeth 16, which are thereby caused to engage with the teeth 7 on the ridge 6. It is to be noted at this point that the teeth 7 are inclined toward the T-shaped head 2, and will thus readily permit the sliding jaw 4 being moved toward said T-shaped head 2 without any manipulation whatever of the locking-catch 10, but any movement of said sliding jaw away from said T-shaped head is effectually prevented by the teeth of the locking-catch engaging with the teeth on the ridge 6, and thus the sliding jaw is held in a locked position until the locking-catch is released from engagement with the teeth of said ridge 6 through the medium of the right-angled stem 12. While only one locking-catch has

been shown and described, it is obvious that more may be employed if desired and placed in any position in the sliding jaw 4.

To provide for effectually applying the wrench to a pipe, a removable gripping-head 17 is employed, and said gripping-head is secured in the laterally-extended end of the side of the sliding jaw 4 which is alined with the end of the T-shaped head 2 in which the notch 3 is formed. In order to secure the gripping-head 17 to the sliding jaw 4, said head is provided at one of its faces with a dovetailed tongue 18, said tongue 18 fitting in a correspondingly-shaped channel 19, which is formed in the laterally-extended end of the side of the sliding jaw 4. As clearly shown, the tongue 18 is formed centrally upon the head 17, and said tongue has one of its ends projecting slightly beyond the adjacent end of the head 17, while its other end terminates a short distance from the other end of said head, thereby enabling the head 17 being moved outwardly and over the outer edge of the extended end of the sliding jaw, and thus placing said head in alinement with the notch 3 which is formed in one end of the T-shaped head 2. The gripping-head 17 is shown as inclined to form a wedge, but it will be understood that should it be desired said head may be of any other preferred shape to suit various requirements, and in order to place the tongue 18 in the dovetailed channel 19 said tongue is formed of a length which will permit the same being first inserted into the end of the longitudinal passage 5 and then slid into said dovetailed channel 19. This construction allows the gripping-head being easily and quickly removed for any purpose.

The groove or channel 19 extends outward from the shank-receiving opening of the sliding jaw, and it terminates short of the end of the jaw, so that its outer end is closed, and the tongue of the gripping-head is introduced into the sliding jaw before the latter is placed on the shank, whereby when the shank 1 is arranged within the shank-receiving opening of the sliding jaw it will lock the gripping-head in the groove or channel 19 and dispense with any separate fastening device.

The operation and advantages of the herein-described wrench will be readily understood by those skilled in the art.

In practice the wrench is formed of any suitable material, and in order to apply the same to a nut or the like or a pipe it is simply necessary to adjust the sliding jaw 4 to open or close the wrench to the required size. This is accomplished, if said jaw is to be moved toward the T-shaped head 2, by forcing the sliding jaw along the shank 1 without any manipulation of the locking-catch 10, and by reason of the teeth 7 on the ridge 6 being inclined as described it will be seen that such movement of the sliding jaw may

be effected, the coil-spring 15 forcing the teeth of the locking-catch into engagement with the teeth on the ridge 6 and thereby holding the sliding jaw in the adjusted position. After the wrench has been thus set the same may be applied to either a nut or the like or to a pipe, and, if necessary, closed to a further extent for the purpose of firmly gripping the same. To release the wrench, the right-angled stem 12 of the locking-catch 10 is operated by a finger or thumb and frees the teeth of said locking-catch from the teeth on the ridge 6, so that the sliding jaw 4 may be readily moved away from the T-shaped head 2 and the wrench removed from the nut or pipe to which the same is applied.

From the foregoing it will be apparent that we have provided a wrench which is simple, inexpensive, and durable; that the same is adapted for use both upon nuts or the like and pipes; that the wrench is so constructed as will enable the same to be readily and quickly adjusted to suit various requirements, and, finally, that the gripping-head which is embodied in the construction of the wrench may be easily removed when the same has either become worn to such an extent as to be useless, to replace the same by a new one when broken, or to substitute therefor a head of a different shape.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a wrench, the combination of a shank, a rigid jaw, a sliding jaw provided with a shank-receiving opening, arranged on said shank and provided at its engaging end with a groove extending outward from the shank-receiving opening and terminating short of the outer end of the sliding jaw to close its outer terminal, and a gripping-head mounted on the sliding jaw and provided with a tongue interlocked with the said groove and introduced therein before the sliding jaw is placed on the shank, whereby when the shank is arranged within the shank-receiving opening of the sliding jaw, the gripping-head will be locked in the said groove, substantially as described.

2. A wrench, comprising a shank, a T-shaped head formed at one end of said shank and constituting the rigid jaw of the wrench, a sliding jaw mounted on said shank and having each of its sides at one of its ends laterally extended and in alinement with the ends of the T-shaped head, said sliding jaw being provided with a longitudinal passage to receive the shank, a ridge formed on the shank and extending throughout the length thereof, said ridge being provided with a series of teeth and adapted to enter a guide formed at one side of the longitudinal passage of the sliding jaw, a spring-pressed locking-catch fulcrumed in a chamber formed in said sliding jaw, said locking-catch having one of its ends enlarged and provided with teeth adapted to

engage with the teeth formed on the shank,
and the other end being provided with a right-
angled stem passing through an opening lead-
ing from the chamber in the sliding jaw to
5 permitsaid locking-catch being operated, and
a gripping-head removably secured to the
sliding jaw, said gripping head being provided
with a dovetailed tongue adapted to enter and
be held in a dovetailed channel formed in one
10 of the laterally-extended sides at one end of
said sliding jaw, said head being adapted to

firmly engage the article to which the wrench
is applied, substantially as set forth.

In testimony that we claim the foregoing as
our own we have hereto affixed our signatures 15
in the presence of two witnesses.

CHARLES A. BIGELOW.
THOMAS C. GATES.

Witnesses:

W. S. MCCLINTOCK,
A. A. ANDERSON.