

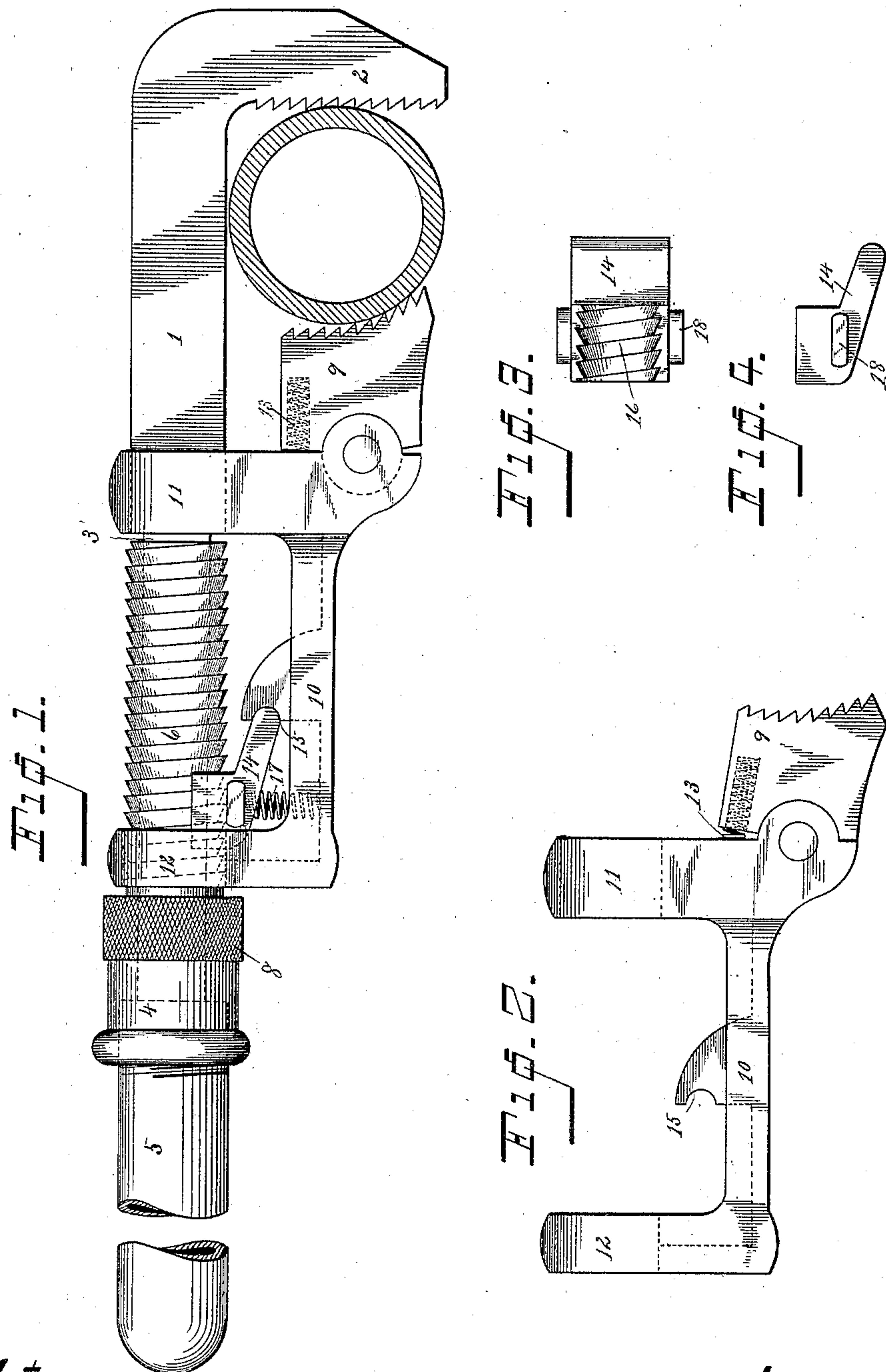
(No Model.)

L. F. CARSTENSEN.

WRENCH.

No. 396,857.

Patented Jan. 29, 1889.



WITNESSES.

C. M. Newman
Bertha E. Lee.

INVENTOR

Larus Friis Carstensen
By A. M. Wooster
Atty.

UNITED STATES PATENT OFFICE.

LARNS FRÜS CARSTENSEN, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO
THE ARMSTRONG MANUFACTURING COMPANY.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 396,857, dated January 29, 1889.

Application filed June 11, 1888. Serial No. 276,699. (No model.)

To all whom it may concern:

Be it known that I, LARNS FRÜS CARSTENSEN, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Wrenches; and I do 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 appertains to make and use the same.

My invention is applicable to all classes of wrenches—as, for example, pipe-wrenches, monkey-wrenches, &c.—and has for its general object to simplify and cheapen the construction and at the same time to greatly improve the operation in use. With these ends in view I have devised the novel construction of which the following description, in connection with the accompanying drawings, is a specification, numbers being used to denote the several parts.

Figure 1 is an elevation of the wrench complete, showing the manner in which an article is grasped; Fig. 2, an elevation of the slide and movable jaw detached; and Figs. 3 and 4 are respectively a face view and elevation of the dog detached.

1 denotes the shank or bar, having at its outer end a fixed jaw, 2, the inner end of the shank being reduced and rounded, as at 3.

4 denotes a hub, which is screwed or otherwise firmly secured to the end of the shank; and 5, the handle, which is screwed or otherwise firmly secured to the hub.

6 denotes a screw, having at its lower end a knurl, 8, for convenience in operation, and provided with a longitudinal opening adapted to receive the rounded portion of the shank, upon which it turns freely, as will be more fully explained.

9 is a movable jaw, which is pivoted to a carrier, 10. This carrier is provided with an arm, 11, having a squared opening to receive the shank, and an arm, 12, having an opening to receive the screw over which it slides without engagement. The movable jaw is pivoted to swing freely in the horizontal plane of the wrench, so as to adapt the tool to grasp articles of various sizes and shapes, and is provided with a spring, 13, which acts

to throw it to its farthest open position, as in Fig. 2.

14 is a dog, the shank of which is rounded and engages a socket, 15, in the carrier, or it may be pivoted thereto, if preferred. The inner face of the dog is provided with threads 16, adapted to engage screw 6. It is held at the engaged position by a spring, 17, and is provided with finger-pieces 18 for convenience in operation.

It will be noticed that the threads of the screw are inclined upon the lower side and made straight upon the upper side. This construction is preferably adopted in order to permit arm 12 and the dog to slide upward freely, but to lock them against backward movement.

The operation in grasping a pipe or other article is as follows: The jaws are placed over the article and the carrier moved upward until both jaws are in contact therewith. The screw is then rotated by means of the knurl, which, through the engagement of threads 16 upon the dog with the screw, moves the carrier upward still farther and sets the movable jaw firmly upon the article. To release the pipe or other article held, the knurl is given a slight turn backward to relieve the grip, and the dog lifted backward out of engagement with the screw by means of the finger-pieces. This allows the carrier and lower jaw to slip downward until they rest upon the knurl. It will thus be seen that I secure rapidity of operation both in opening and closing the jaws, that the strongest possible grip is secured upon the article to be held, while at the same time the construction is so simple and strong as to avoid all liability of breakage or getting out of repair.

It will of course be understood that the invention is not limited to the precise details of construction illustrated in the drawings, and that changes within reasonable limits may be made without departing from the principle of my invention.

I claim—

In a wrench, a fixed jaw and shank having a rounded portion, and a screw having a longitudinal opening to receive said rounded portion and turning freely thereon, in combination with a movable jaw, a carrier there-

for which slides freely over the shank and
screw, and a spring-actuated dog upon the
carrier which is adapted to engage the screw,
so that when the latter is turned the carrier
5 and jaw are moved thereby, and when the
dog is disengaged the carrier and jaw may be
moved independently of the screw.

In testimony whereof I affix my signature in
presence of two witnesses.

LARNS FRÜS CARSTENSEN.

Witnesses:

A. M. WOOSTER,
BERTHA E. LEE.