(No Model.)

J. DINKELACKER, Jr.

WRENCH.

No. 552,106. Patented Dec. 31. 1895.

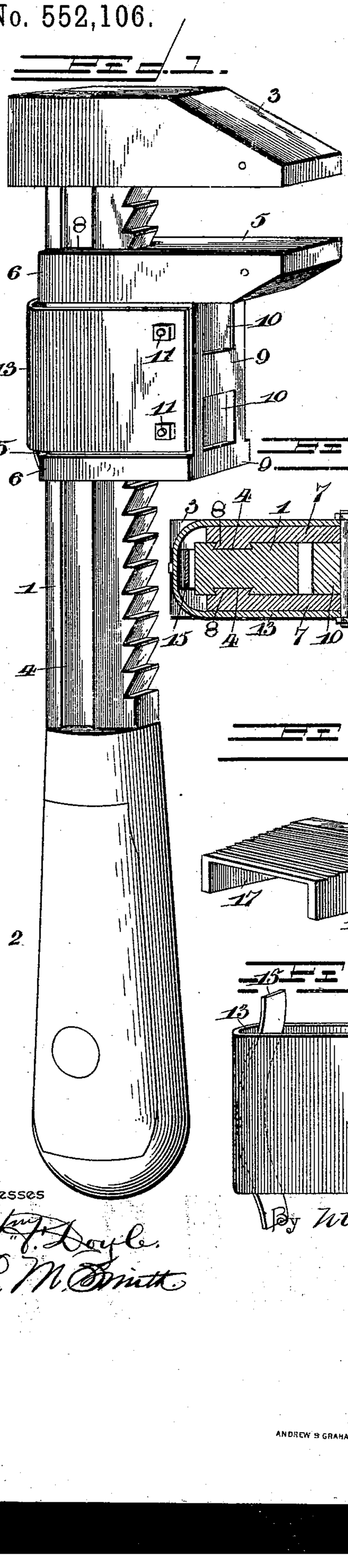

FIG. 1.

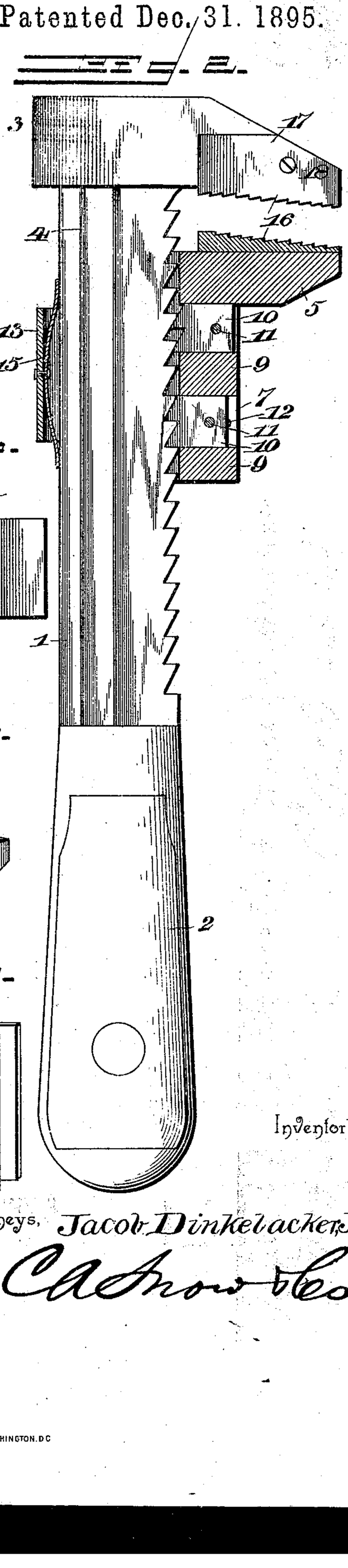

FIG. 2.

FIG. 3.

FIG. 5.

FIG. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

JACOB DINKELACKER, JR., OF MILNESVILLE, PENNSYLVANIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 552,106, dated December 31, 1895.

Application filed March 19, 1895. Serial No. 542,394. (No model.)

To all whom it may concern:

Be it known that I, JACOB DINKELACKER, Jr., a citizen of the United States, residing at Milnesville, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to an improvement in wrenches, and particularly to that class in which a sliding jaw is employed.

The object of the present invention is to simplify and improve the construction of devices of this nature, and to provide one which shall be efficient and durable in operation and practice, which may be instantly adjusted to a nut of any size and which shall possess other advantages hereinafter enumerated.

To this end the invention consists in the combination, with a grooved and toothed shank provided with a fixed jaw, of a sliding jaw provided with one or more pawls or dogs having a sliding relation to said sliding jaw, in the manner of mounting said sliding pawls or dogs in the movable jaw, and in the manner of connecting the movable jaw with the toothed shank, and in certain features and details of construction and arrangement of parts hereinafter fully described, illustrated in the drawings, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a wrench constructed in accordance with my improvements. Fig. 2 is a side elevation of the wrench with the movable jaw in longitudinal section. Fig. 3 is a horizontal section through the toothed shank and sliding jaw, showing also one of the sliding jaws or pawls and the means for operating the same for withdrawing them out of engagement with the toothed shank. Fig. 4 is a detail perspective view of the U-shaped plate for operating the pawls or dogs. Fig. 5 is a similar view of one of the detachable serrated attachments for adapting the wrench for use in connection with pipes.

Similar numerals of reference indicate corresponding parts in the several figures of the drawings.

Referring to the drawings, the shank 1 of the wrench is provided with the usual handle 2 and a laterally-extending fixed jaw 3, said parts being formed in one piece of any desired material. The front edge of the shank 1 is formed with a series of teeth preferably in the form of saw-teeth or with horizontal upper faces and inclined lower faces, as shown. The shank 1 is further provided upon either side with a dovetail groove 4, the purpose of which will appear.

The sliding jaw 5 is provided with a recess at its inner end or with parallel arms 6 adapted to stride or partially embrace the shank 1. The sliding jaw 5 is also provided with a downward extension, which is made hollow or comprises two oppositely-disposed plates 7, which are also adapted to partially embrace the shank 1, as shown. The side plates 7 are each provided with a longitudinally-extending dovetail rib 8, which engages and slides longitudinally within one of the corresponding grooves 4 in said shank, thus holding the sliding jaw securely in place and preventing its escape, while at the same time adapting said jaw to be moved or adjusted freely lengthwise of said shank. The sliding jaw 5 is further provided with suitable partitions 9, forming two compartments in which are located sliding pawls or dogs 10 provided at their inner ends with one or more teeth corresponding to and adapted to engage with the teeth on the front edge of the shank 1. Two of said sliding pawls 10 are shown, each one of which is provided with an opening for receiving a transverse pin or bolt 11, the ends of which pass through elongated slots 12 in the downwardly-extending side plates 7 of the sliding jaw and receive nuts. It will thus be seen that the dogs or pawls 10 have a sliding relation to the movable jaw 5. These pawls or dogs are so disposed that while one of them is fairly in engagement with the teeth of the shank the operative faces of the teeth of the other pawl will occupy a position intermediate the operative faces of the teeth of the shank. By this means it is only necessary to adjust the sliding jaw a distance equal to one-half the distance between the points of the teeth on the shank, thus greatly increasing the utility and practical value of the wrench.

The pawls or dogs 10 are adjusted into and out of engagement with the toothed shank 1 by means of a U-shaped plate or yoke 13, which strides the shank 1 and the greater portion of the sliding jaw, and is provided at or

near its outer or advance edges with suitable perforations 14 adapted to receive the ends of the transverse pins 11 of the sliding pawls or dogs 10. The U-shaped plate or yoke 13 passes around the rear edge of the shank 1, and has riveted or otherwise secured to it a curved flat spring 15, which bears at its ends against the rear edge of said shank. By the construction described the sliding pawls or dogs 10 will normally be held by means of the tension of the spring 15 in engagement with the toothed shank 1. When it is desired to throw said pawls out of engagement, the yoke 13 is pressed inward until the tension of the spring 15 is overcome, thereby moving said pawl away from the toothed shank and out of engagement therewith, thus adapting the sliding jaw to be moved longitudinally of said shank in either direction.

By the construction above described a simple and efficient wrench is provided, and it will be apparent that the same may be instantly adjusted to a nut of any size by forcing the sliding jaw toward said nut, in which operation, by reason of the inclined faces of the teeth on the shank 1 and the sliding jaws or pawls, the latter will be automatically withdrawn from engagement until said sliding jaw strikes against the nut, when the parts will be held firmly in such position until released by manipulating the yoke 13, as above described. The device described may be adapted for use as a pipe-wrench by applying a pair of detachable serrated jaws 16 to the inner adjacent faces of the fixed and movable jaws. The pipe-jaws have downwardly-extending flanges 17, and said flanges, as well as the fixed and sliding jaws, are provided with horizontally-aligned perforations for the reception of a connecting-pin 18, by means of which the serrated pipe-jaws are held securely in place and accidental displacement thereof prevented.

It will be apparent that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In a wrench, a toothed shank, and a fixed jaw thereon, in combination with a sliding jaw, two independent sliding pawls or dogs mounted in said sliding jaw one in advance of and in longitudinal alignment with the other and adapted to alternately engage the toothed shank, said pawls being so disposed that only one of them will engage the teeth of the shank at a time while the operative edges of the teeth of the other pawl occupy a position intermediate the operative edges of the teeth of the shank, and a U-shaped yoke embracing the sliding jaw and engaging said pawls or dogs for throwing the latter into and out of engagement with the toothed shank, substantially as specified.

2. In a wrench, a toothed shank, and a fixed jaw, in combination with a sliding jaw, one or more sliding pawls or dogs mounted therein and adjustable toward and away from the toothed shank, the transverse pins projecting laterally beyond the side faces of said sliding pawls or dogs, and a U-shaped plate or yoke for operating said pawls or dogs, substantially as described.

3. In a wrench, a toothed shank, and a fixed jaw, in combination with a sliding jaw, longitudinally extending dove-tail ribs thereon for engaging corresponding grooves in said shank, one or more sliding pawls or dogs carried by said sliding jaw, and a U-shaped plate or yoke striding said shank and sliding jaw and engaging said sliding dogs or pawls for moving them into and out of engagement with said toothed shank, substantially as described.

4. In a wrench, a toothed shank, longitudinally extending dove-tail grooves on either side thereof, and a fixed jaw carried by said shank, in combination with a sliding jaw, the hollow downward extension of said jaw, the dove-tail ribs carried by said sliding jaw and sliding in said grooves, one or more sliding pawls movable relatively to said sliding jaw, transverse pins projecting laterally beyond the side faces of said pawls, the slots in said hollow extension of the sliding jaw in which said transverse pins work, a U-shaped plate or yoke striding the shank and sliding jaw, and a flat spring carried by said yoke and bearing against the rear edge of said toothed shank, all arranged substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JACOB DINKELACKER, JR.

Witnesses:

EDWIN MINICK,

FREDERICK S. SMITH.