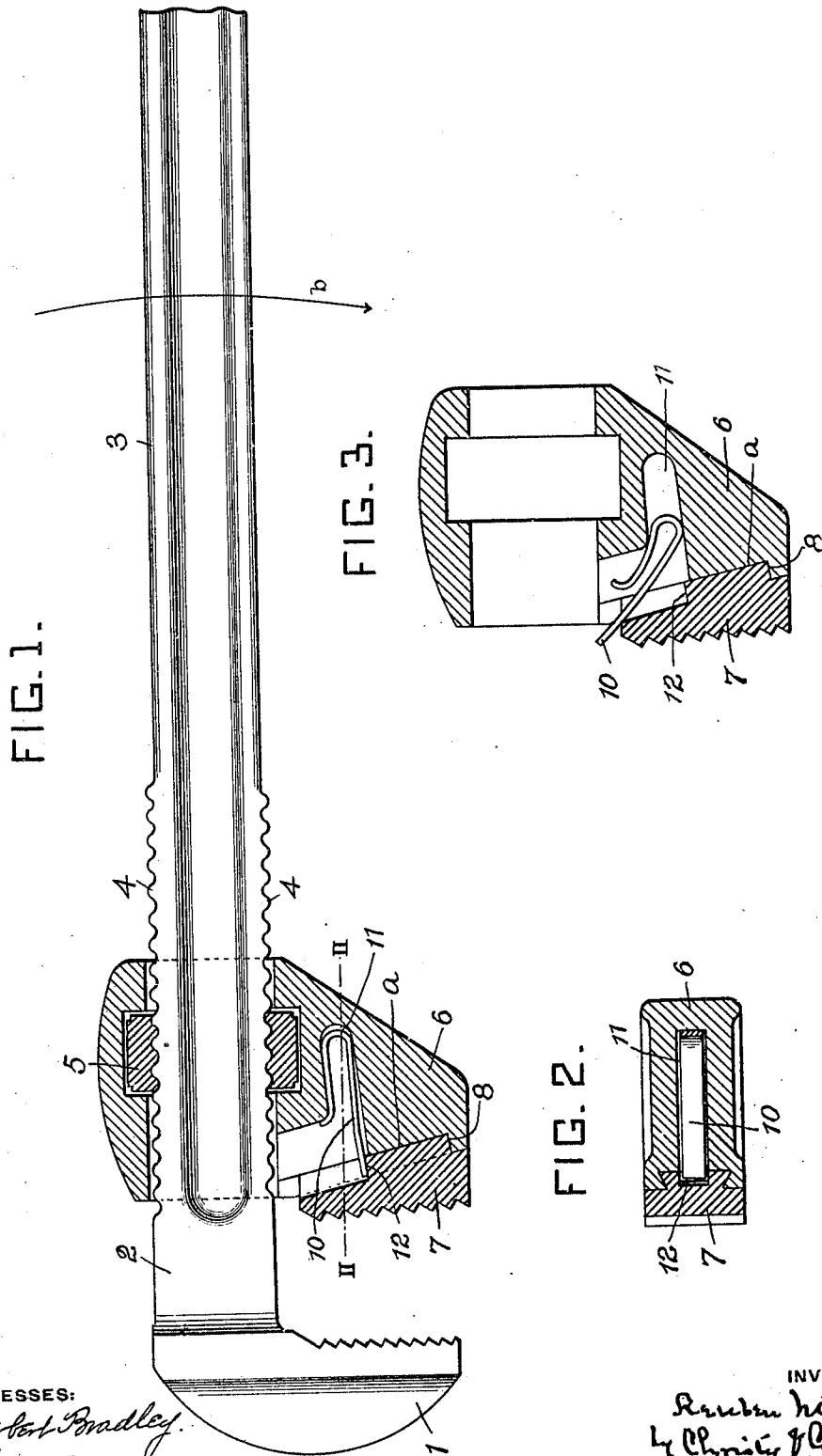


WRENCH.

Patented Apr. 26, 1910.

955,893.



WITNESSES:

WITNESSES:
J. Herbert Bradley.
Charles Barnard.

INVENTOR

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UNITED STATES PATENT OFFICE.

REUBEN MILLER, JR., OF PITTSBURG, PENNSYLVANIA.

WRENCH.

955,893.

Specification of Letters Patent.

Patented Apr. 26, 1910.

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To all whom it may concern:

Be it known that I, REUBEN MILLER, JR., residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered certain new and useful Improvements in Wrenches, of which improvements the following is a specification.

The invention described herein relates to certain improvements in wrenches and has for its object the provision of a movable biting or gripping member carried by the adjustable jaw and held in such position that when the wrench is applied the gripping member will be shifted and operate to wedge the pipe between the jaws.

It is also an object of the invention to form the gripping faces at such an angle to each other, that when applied to a pipe, a tooth next succeeding that actually biting the pipe will be so closely adjacent to it that in case of a slipping of the tooth in bite the next tooth will immediately catch.

It is a further object of the invention to so combine the gripping block, the jaw carrying the same and the spring that when the several parts are placed together they will mutually hold each other in position.

The invention is hereinafter more fully described and claimed.

In the accompanying drawing forming a part of this specification, Figure 1 shows the shank and fixed jaw in elevation and the adjustable jaw and nut in section, Fig. 2 is a sectional view on a plane indicated by the line II—II Fig. 1; Fig. 3 is a sectional view of the movable jaw and sliding block showing the manner of assembling the said parts.

In the practice of my invention the jaw 1 is formed integral with the shank 2 which is extended to form a handle 3. The shank is provided along its edges with teeth 4 of proper pitch for engagement with the nut 5. This nut is carried by the sliding jaw 6, which is slotted for the reception of the shank and is provided with an opening through its side walls and intersecting the slot, for the reception of the nut 5.

The inner face *a* of the sliding jaw is inclined, the inclined face terminating at the edge of the slot through which the shank is passed. A toothed block 7 is movably mounted on this inclined face being held in position by a dovetail connection. As will be readily understood the male portion of this

attachment may be on the block and the groove in the sliding jaw or vice versa. A stop 8 is provided in the present construction extending across the groove in the jaw, to prevent the block from sliding off the jaw. In order to apply the block to the jaw the latter is removed from the shank, the block placed in position and the shank inserted through the slot in the jaw.

In order to obtain the wedging action of the toothed block or wedge 7 the latter should be at the outer end of its range of movement when the wrench is applied, then when the wrench is turned in the direction of the arrow *b* the wedge will be forced inwardly and take a tighter grip on the article. The proper position of the wedge is insured by a spring 10 mounted as shown in a recess or pocket 11 in the movable jaw, and bearing against a shoulder 12 on block 7. It is preferred to employ a flat spring having its lower end bent to fit firmly in the recess or pocket 11 and its opposite end projecting into a groove in the underside of the block, the end of said groove forming the shoulder 12. In assembling these parts the block is slid into position shown and the spring then forced into position as indicated in Fig. 3, the U-shaped end of the spring fitting in the pocket or recess 11, the recess 11 being accessible from the interior of the jaw. When it is desired to remove the block for any reason the jaw is removed from the shank and the block slid along the jaw, the end of the spring being deflected into a lateral enlargement of the recess 11.

In order to insure the biting of one tooth in case the bite of the preceding tooth slips, the inclination of the toothed face of the wedge to the toothed face of the fixed jaw should be such for a given spacing of the teeth on the wedge that when one tooth is in bite on the pipe, the next succeeding tooth will be nearly in contact with it if not actually slightly biting the pipe. In practice this angle should be approximately three (3) to five (5) degrees. With such angularly disposed jaws, it is practically certain that when one tooth slips through the tearing away of the metal of the pipe, the next tooth will grip the travel of the wedge to insure such bite being very small.

I claim herein as my invention:

1. A wrench jaw provided with a slot for the reception of the shank of the wrench,

and having a pocket therein, in combination with a toothed block movably mounted on the face of the jaw and extending over the open end of the pocket, and a spring having a U-shaped end seated in the pocket in the jaw and adapted to engage with its opposite end the under side of the block, the legs of the U-shaped portion bearing against the walls of the pocket.

- 10 2. A wrench jaw provided with a slot for the reception of the shank of a wrench and having a recess or pocket therein inde-

pendent of the slot, in combination with a toothed block movably mounted on the face of the jaw and extending over the recess or pocket and a spring having one end loosely seated in the recess and its opposite end engaging the underside of the block. 15

In testimony whereof, I have hereunto set my hand.

REUBEN MILLER, Jr.

Witnesses:

CHARLES BARNETT,
FRANCIS J. TOMASSON.