

G. W. JESSUP, JR.

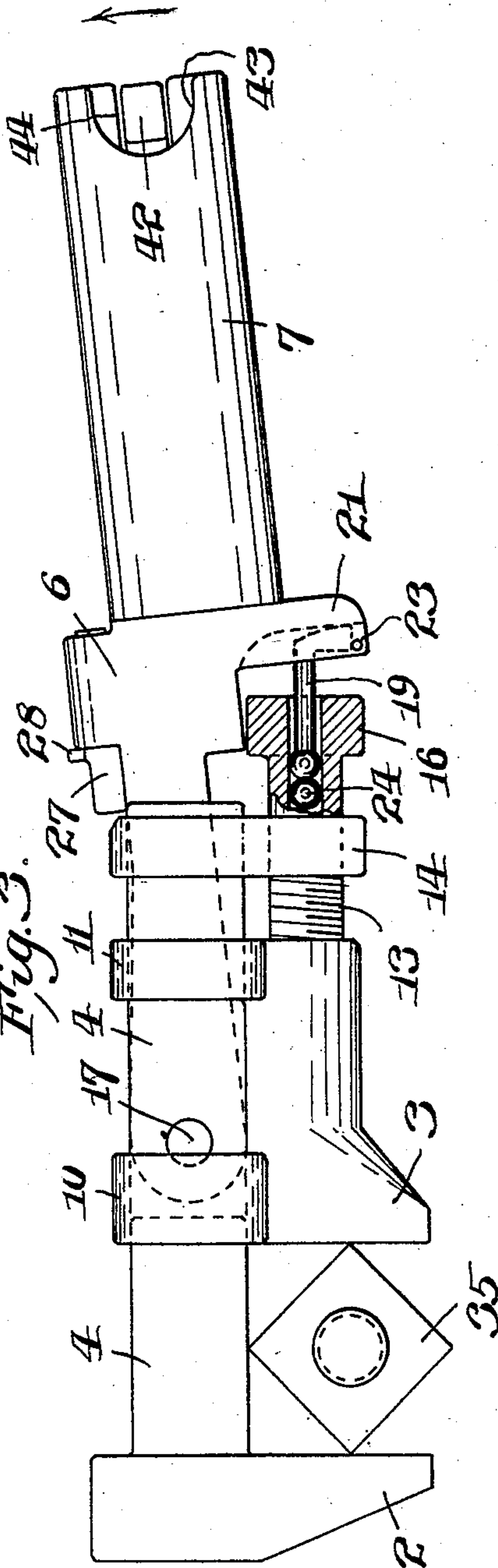
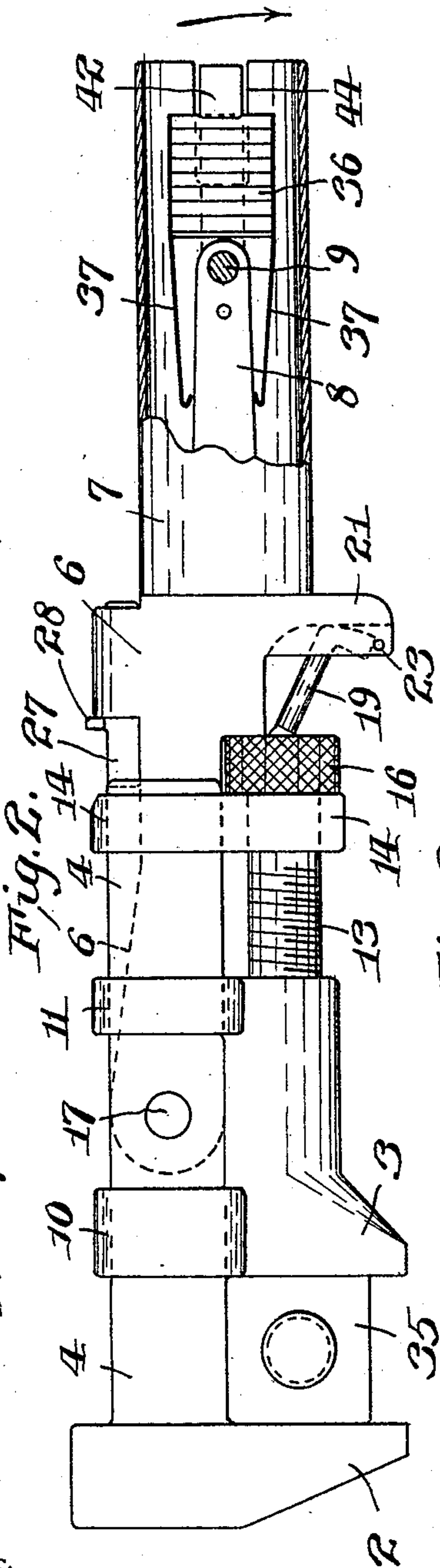
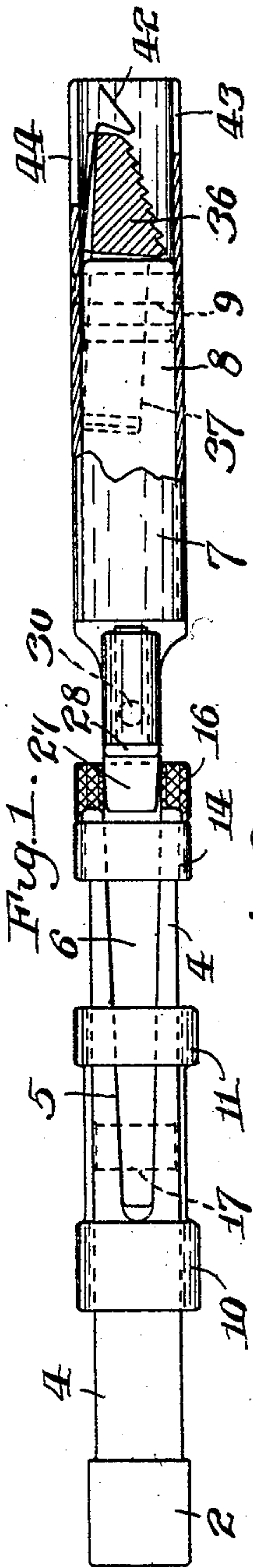
WRENCH.

APPLICATION FILED JULY 9, 1909.

969,538.

Patented Sept. 6, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

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WRENCH.

**969,538.**

2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

GEORGE W. JESSUP, JR., OF NEWTON, MASSACHUSETTS.

## WRENCH.

969,538.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed July 9, 1909. Serial No. 506,740.

*To all whom it may concern:*

Be it known that I, GEORGE W. JESSUP, JR., citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

The object of this invention is to provide a wrench of novel, simple and efficient construction, including two jaws and having provision whereby the jaws may be readily adjusted toward and from each other, and whereby, after the jaws have been engaged with two opposite sides of a nut and the wrench turned in one direction to turn the nut, the jaws may be moved apart and re-engaged with two opposite sides of the nut when the wrench is turned in a reverse direction, to provide a ratchet wrench; and whereby suitable parts of the wrench may be locked to prevent movement of the jaws away from each other when it is desired to use the wrench without the ratchet operation.

A further object of the invention is to provide a novel pipe attachment for the wrench which may be inserted between the jaws thereof for the purpose of turning pipes or round bodies and which may be confined within the handle of the wrench when not in use.

The invention consists in the novel construction and combinations of parts which will be hereinafter fully described and particularly claimed.

In the drawings:—Figure 1 is a plan view of my improved wrench, partly in section, and showing the pipe attachment confined within the handle. Fig. 2 is a side elevation of the wrench, partly in section, and showing the pipe attachment confined within the handle, and showing the two jaws of the wrench engaged with two opposite sides of a nut. Fig. 3 is a side elevation of the wrench, showing the two jaws thereof and the positions of other parts of the wrench when the two jaws are engaged with the corners of the nut in turning the wrench about the nut when the wrench is used as a ratchet wrench. Fig. 4 is a longitudinal section through the wrench, showing the two jaws engaged with two opposite faces of a nut, and showing the position of the parts when locked to prevent the two jaws from moving away from each other when it is desired to use the wrench without the ratchet operation.

Fig. 5 is a detail, showing one of the jaws of the wrench and its shank, and showing also the pipe attachment applied to said jaw and shank, the pipe attachment being shown in section. Fig. 6 is a view of the pipe attachment detached from the wrench.

2 and 3 designate the jaws of the wrench. Extending from the jaw 2 is a shank 4, the free end of which is bifurcated as at 5, as shown. Fitted within the bifurcation 5 of the shank 4 is one end of the stock 6, the other end of which is provided with a hollow handle 7, the stock being provided with a central part or extension 8 which extends into the hollow handle 7 in engagement with the side walls thereof and in spaced relation to the top and bottom walls thereof. The end of the extension 8 is secured to the handle 7 by a transverse rivet 9.

The jaw 3 is provided with two straps or collars 10 and 11 which surround the shank 4 and are slidably fitted thereto in a manner to permit the jaw 3 to be moved toward and from the jaw 2. The jaw 3 is also provided with a screw-threaded opening 12 therein which extends parallel to the shank 4, and screwed into the opening 12 is one end of a screw 13 the other end of which extends through an opening in an arm 14 projecting from the bifurcated end of the shank 4. The arm 14 is secured to the shank 4 and it surrounds the bifurcated end thereof and incloses the stock 6, as shown. The inner portion of the stock 6 is provided with a shoulder 15 arranged in spaced relation to the arm 14, and the end of the screw 13 extending through the arm 14 is provided with a head 16 which is adapted to occupy the space between the arm 14 and shoulder 15 and be moved from such space, as will be hereinafter explained. The stock 6 is pivoted to the shank 4 by a transverse pin or rivet 17, and the handle 7 and stock 6 are adapted to be moved on the pivot 17 to move the stock 6 toward and from the screw 13, the bottom of the arm 14 forming a stop to limit the movement of the stock 6 toward the screw 13, and the top of the arm 14 forming a stop to limit the movement of the stock 6 in a direction away from the screw 13, for a purpose hereinafter explained.

The screw 13 is provided with an axial opening 18 therein which extends from the head 16 of the screw part way through the body of the screw. Arranged within the outer end of the opening 18 is a ball or



head on one end of a rod 19 the other end of which is provided with a projection 20 which abuts against an arm 21 extending from the shank 6 and which is arranged within a slot 22 in the arm 21 to prevent lateral displacement of the projection 20 and rod 19. The bottom of the projection 20 rests upon a pin 23 extending through the slot 22 in the arm 21. When the parts occupy the position shown in Figs. 2 and 4, the rod 19 inclines downwardly from the opening 18 to the arm 21; and when the stock 6 is moved on its pivot 17 into engagement with the top of the arm 14, the lower end of the rod 19 is raised by the pin 23 into alinement with the opening 18, as shown in Fig. 3. Arranged within the opening 18 in the screw 13 and engaged with the ball or head on the rod 19, is a loose ball 24 which is pressed into engagement with the rod 19 by one end of a spring 25 arranged within the opening 18 and having its other end bearing against the inner end of the opening. Slidingly fitted to an opening 26 in the stock 6 is one end of a bolt 27, the other end of which is adapted to be projected into the space between the upper portion of the arm 14 and the top of the stock 6 when the stock 6 is in engagement with the bottom part of the arm 14, as shown in Fig. 4, and thus lock the stock 6 against movement with relation to the shank 4 on the pivot 17. The bolt 27 is provided with a projection 28 which may be engaged by hand in moving the bolt. This projection is located between the arm 14 and a projection of the stock 6, and the arm 28 is adapted to engage the arm 14 and limit the movement of the bolt 27 in one direction, and to engage the projection on the stock 6 and limit the movement of the bolt 27 in the reverse direction. Arranged within an opening 29 in the stock 6, directly beneath the bolt 27, is a ball 30 which is adapted to engage notches 31 and 32 in the bottom of the bolt. The ball 30 is pressed into engagement with the bolt 27 by a spring 33 within the opening 29 beneath the ball. When the bolt 27 is projected into the space between the stock 6 and arm 14, it is held in this position by the engagement of the ball 30 with the notch 31; and when the bolt 27 is withdrawn from the position between the stock 6 and arm 14, it is held in the withdrawn position by the engagement of the ball 30 with the notch 32.

When it is desired to use the wrench as a ratchet wrench, the bolt 27 is withdrawn from the position between the stock 6 and arm 14 and is held in the withdrawn position by the engagement of the ball 30 with the notch 32 as just described, after the head 16 of the screw 13 has been turned to adjust the two jaws 2 and 3 into engagement with two opposite sides of a nut, as shown in Fig. 2. In this position of the parts, the handle 7 is

moved in the direction indicated by the arrow in Fig. 2, thereby causing the shank 6 to abut against the bottom portion of the arm 14 and cause the jaws 2 and 3 to move as a unit to turn the nut 35 say to the position shown in Fig. 3, the head 16 of the screw 13 abutting against the shoulder 15 and forming a stop for the jaw 3. After the nut 35 has been turned as thus described, the movement of the handle 7 and therewith the stock 6 is reversed. This operation moves the shoulder 15 from its engagement with the head 16 of the screw 13 and brings the stock 6 into engagement with the upper portion of the arm 14. In this position of the parts the rod 19 is in alinement with the opening 18 and the screw 13 is free to move in a direction toward the arm 21 beneath the shoulder 15; and, as the movement of the wrench is continued in the direction indicated by the arrow in Fig. 3, to turn the jaws 2 and 3 around the corners of the nut 35, the jaw 3 is forced away from the jaw 2 against the action of the spring 25, as shown in Fig. 3, the rod 19 entering the opening 18. As the inner faces of the jaws 2 and 3 are brought parallel to two opposite sides of the nut 35, the spring 25 gradually returns the jaw 3 to its original position in which the head 16 rests against the arm 14. This being done, the direction of movement of the handle 7 is again reversed, or moved in the direction indicated by the arrow in Fig. 2, thus bringing the shoulder 15 back into engagement with the head 16 to prevent movement of the jaw 3 away from the jaw 2 and to cause the wrench to again turn the nut 35. Thus the handle 7 may be moved back and forth until the nut 35 has been given the desired number of turns.

When it is desired to use the wrench as an ordinary wrench, without the ratchet operation, the shank 6 is moved into engagement with the lower portion of the arm 14 and the bolt 27 is projected into the space between the shank 6 and the upper portion of the arm 14, thereby locking the shank 4 and stock 6 together as a unit, the ball 30 engaging the notch 31 and holding the bolt 27 in position. In this position of the parts, the head 16 of the screw 13 is confined between the arm 14 and shoulder 15, and it will therefore be seen that by turning the head 16 the jaw 3 may be adjusted upon the shank 4 to any desired position with relation to the jaw 2, and that when the jaw 3 has been thus adjusted the two jaws will be held rigidly with relation to each other, and the movement of the handle 7 in either direction will move the two jaws 2 and 3 as a unit in either direction.

When it is desired to turn a pipe or round body with the wrench, I employ a pipe attachment comprising a block 36, a pair of spring arms 37 and lateral projections 38.



One face 39 of the block 36 fits against and is adapted to slide upon the inner face of the jaw 2 of the wrench. The opposite face 40 of the block 36 is serrated as shown, and is arranged on an incline with respect to the face 39. The pipe attachment is held in position upon the wrench as shown in Fig. 5 by the spring arms 37 embracing and engaging the sides of the shank 4, the spring arms 37 being inclined toward each other and being provided on their upper ends with inturned hooks 41, as shown. The engagement of the spring arms 37 with the shank 4 is such as to permit the block 36 to be moved upon the jaw 2 toward and from the shank 4, and lateral displacement of the block 36 is prevented by the engagement of the projections 38 with the sides of the jaw 2.

If the pipe attachment be applied to the jaw 2 of the wrench, as shown in Fig. 5, and a pipe or round body be inserted between the inclined, serrated face 40 of the block 36 and the jaw 3, the turning of the wrench in the direction indicated by the arrow in Fig. 2 will cause the jaw 3 and block 36 to tightly grip the pipe or round body, the block 36 adjusting itself upon the inner face of the jaw 2 until the proper gripping action takes place. When the pipe attachment is not in use, it is confined within the hollow handle 7 as shown in Figs. 1 and 2. In this position of the pipe attachment, the spring arms 37 thereof embrace the projection 8 of the stock 6, and the outer end of the block 36 is engaged by the outer bent end of a spring latch arm 42 the inner end of which is secured between the projection 8 and the handle 7. By moving the outer free end of the latch arm 42 from engagement with the outer end of the block 36, the pipe attachment may be removed from the hollow handle and applied to the shank 4 as previously described.

One side wall of the hollow handle 7 is provided with an opening 43 therein for the reception of a finger or a thumb to engage the latch arm 42 and disengage it from the block 36, and the other side wall of the hollow handle 7 is provided with a suitable opening 44 therein to receive the outer end of the latch arm 42 when it is moved from engagement with the block 36.

I claim:—

1. In a wrench, the combination of a stock; a jaw provided with a shank pivoted to the stock and movable with relation thereto; a second jaw slidably fitted to said shank and being movable toward and from the first named jaw in one position of said stock and being prevented by said stock in another position thereof from being moved away from the first named jaw by pressure against said second jaw; and means when in one position permitting relative movement between the shank and the stock and when

in another position preventing relative movement between the shank and the stock.

2. In a wrench, the combination of a stock; a jaw provided with a shank pivoted to the stock and movable with relation thereto; a second jaw slidably fitted to said shank and being prevented by said stock in one position thereof from being moved away from the first named jaw by pressure against said second jaw; means when in one position permitting relative movement between the shank and the stock and when in another position preventing relative movement between the shank and the stock; and a spring pressing said second jaw toward the first named jaw.

3. In a wrench, the combination of a stock; a jaw provided with a shank pivoted to the stock and movable with relation thereto; a second jaw slidably fitted to said shank and being movable toward and from the first named jaw in one position of said stock and being prevented by said stock in another position thereof from being moved away from the first named jaw by pressure against said second jaw; and an adjustable bolt when in one position permitting relative movement between the shank and the stock and when in another position preventing relative movement between the shank and the stock.

4. In a wrench, the combination of a stock; a jaw provided with a shank pivoted to the stock and movable with relation thereto; a second jaw slidably fitted to said shank and being prevented by said stock in one position thereof from being moved away from the first named jaw by pressure against said second jaw; an adjustable bolt when in one position permitting relative movement between the shank and the stock and when in another position preventing relative movement between the shank and the stock; and means for holding said bolt in positions of adjustment.

5. In a wrench, the combination of a stock; a jaw provided with a shank pivoted to the stock and movable with relation thereto; a second jaw slidably fitted to said shank and being prevented by said stock in one position thereof from being moved away from the first named jaw by pressure against said second jaw; an adjustable bolt having a notch therein and adapted when in one position to permit relative movement between the shank and the stock and when in another position to prevent relative movement between the shank and the stock; and spring-pressed means carried by the stock and adapted to engage said notch and hold said bolt in a position of adjustment.

6. In a wrench, the combination of a stock; a jaw provided with a shank pivoted to the stock and movable with relation thereto; a second jaw slidably fitted to said



shank and being prevented by said stock in one position thereof from being moved away from the first named jaw by pressure against said second jaw; said second jaw being provided with a part having an opening therein; a member engaged with the stock and extending into and movable within said opening; and a spring exerting pressure against said member in one direction and exerting pressure in another direction against said second jaw and forcing it toward the first named jaw.

7. In a wrench, the combination of a stock; a jaw provided with a shank pivoted to the stock and movable with relation thereto; a second jaw slidably fitted to said shank and being prevented by said stock in one position thereof from being moved away from the first named jaw by pressure against said second jaw, said second jaw being provided with a part having an opening therein; a rod having one end engaged with said stock and the other end extended into said opening, said rod being movable with said stock to bring the axis of said rod substantially into and out of alignment with the axis of said opening; and a spring against the action of which said second jaw may be moved from the first named jaw when the axis of said rod is substantially in alignment with the axis of said opening.

8. In a wrench, the combination of a stock; a jaw provided with a shank pivoted to the stock and movable with relation thereto; a second jaw slidably fitted to said shank and being prevented by said stock in one position thereof from being moved away from the first named jaw by pressure against said second jaw, said second jaw being provided with a part having an opening therein; a rod having one end engaged with said stock and the other end extended into said opening, said rod being movable with said stock to bring the axis of said rod substantially into and out of alignment with the axis of said opening; and a spring within said opening and exerting pressure against said rod in one direction and exerting pressure in another direction against said second jaw and forcing it toward the first named jaw.

9. In a wrench, the combination of a stock provided with a shoulder; a jaw provided with a shank pivoted to the stock and movable with relation thereto; a second jaw slidably fitted to said shank and having a screw-threaded opening therein; and a screw

having threads engaged with the threads of said opening and positioned to engage said shoulder in one position of the stock and to be disengaged from said shoulder in another position of the stock.

10. In a wrench, the combination of a stock provided with a shoulder; a jaw provided with a shank pivoted to the stock and movable with relation thereto; an arm projecting from said shank in spaced relation to said shoulder; a second jaw slidably fitted to said shank between the first named jaw and said arm; and a screw engaged with said second jaw and extending through said arm and provided with a head engaging the face of said arm toward said shoulder and positioned to be engaged by said shoulder in one position of the stock.

11. In a wrench, the combination of a stock provided with a shoulder; a jaw provided with a shank pivoted to the stock and movable with relation thereto; an arm projecting from said shank in spaced relation to said shoulder; a second jaw slidably fitted to said shank between the first named jaw and said arm; a screw engaged with said second jaw and extending through said arm and provided with a head engaging the face of said arm toward said shoulder and positioned to be engaged by said shoulder in one position of the stock; and a spring pressing said second jaw toward the first named jaw.

12. In a wrench, the combination of a stock provided with a shoulder; a jaw provided with a bifurcated shank into which the stock extends, the stock being pivoted to the shank and movable with relation thereto; an arm projecting from the shank in spaced relation to said shoulder and having a part surrounding the bifurcated portion of the shank and the stock therein; a second jaw slidably fitted to said shank between the first named jaw and said arm; and a screw engaged with said second jaw and extending through said arm and provided with a head engaging the face of said arm toward said shoulder and positioned to be engaged by said shoulder in one position of the stock.

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

GEORGE W. JESSUP, JR.

Witnesses:

GEORGE F. TOBEY,  
HOWARD MOORE.