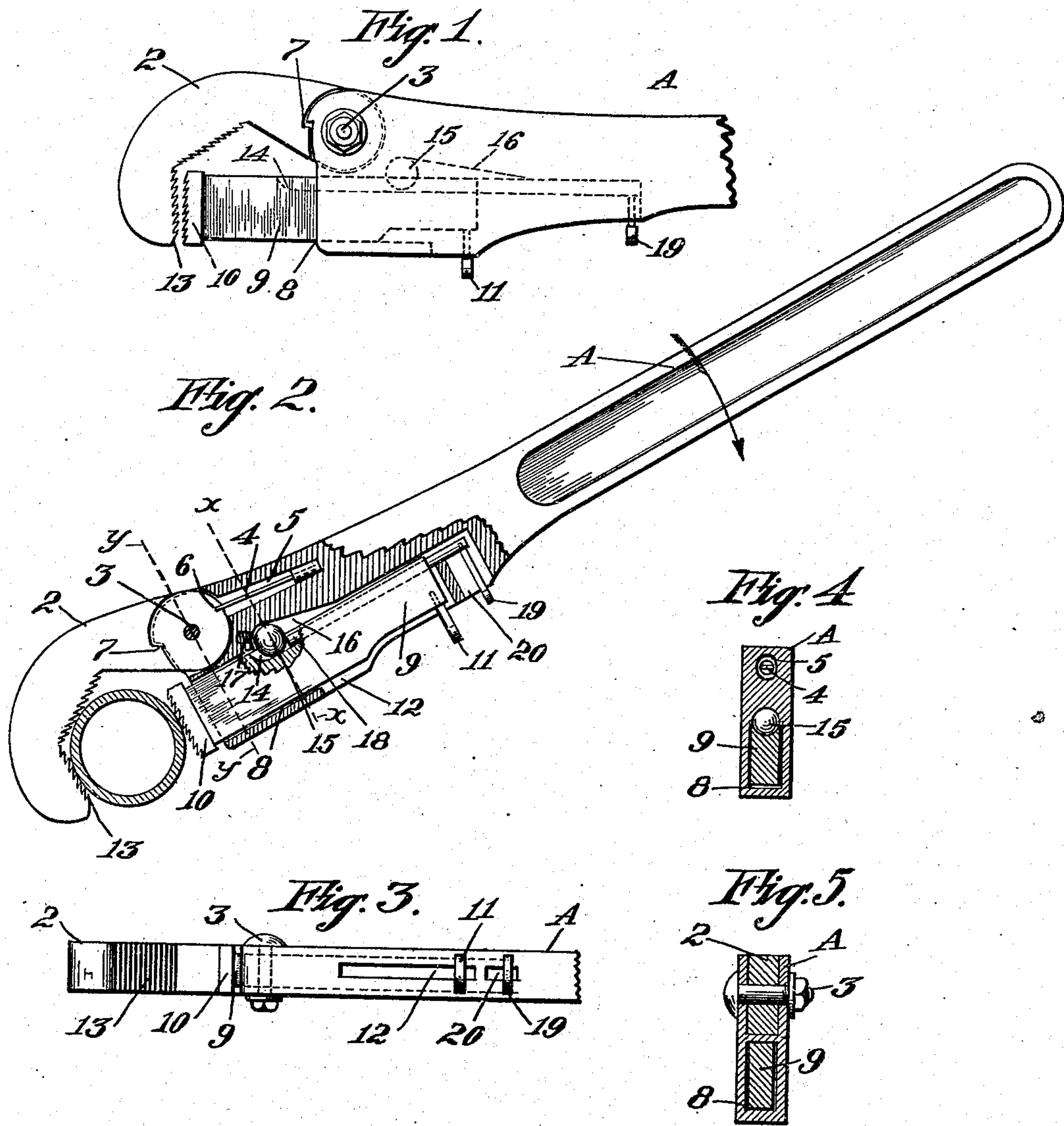


A. A. PATTON.
PIPE WRENCH.
APPLICATION FILED APR. 5, 1909.

936,804.

Patented Oct. 12, 1909.



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UNITED STATES PATENT OFFICE.

ALVA A. PATTON, OF SAN PABLO, CALIFORNIA.

PIPE-WRENCH.

936,804.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed April 5, 1909. Serial No. 487,877.

To all whom it may concern:

Be it known that I, ALVA A. PATTON, citizen of the United States, residing at San Pablo, in the county of Contra Costa and State of California, have invented new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

My invention relates to pipe and like wrenches.

It is the object of my invention to provide a pipe wrench that is simple in construction and easily and effectively operated, and in which the engaging jaws can be quickly adjusted.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a fragmentary side elevation. Fig. 2 is an elevational view, partly in section. Fig. 3 is an edge view. Fig. 4 is a cross-section on the line X—X, Fig. 2. Fig. 5 is a cross-section on the line Y—Y, Fig. 2.

In the drawings, A is the handle portion of a pipe wrench, to which is pivotally mounted the jaw 2 by means of a pin 3. A stiff spring 4, set into a recess 5 in the handle A, engages with a slot 6 in the jaw 2 for the purpose of retaining the jaw in a normally closed position. A shoulder 7 on the jaw 2, abutting against a corresponding shoulder on the handle A, limits the upward movement of the jaw 2.

A slideway 8 is formed in the under side of the handle A, in which the shank 9 of the toothed jaw 10 is slidably mounted. Attached to the shank 9 is a thumb-piece or trigger 11, the stem of which projects through and is slidable in a longitudinal slot 12 in the lower wall of the slideway 8. By means of the thumb-piece 11 the jaw 10 may be adjusted to any suitable relation to the toothed edge 13 of the jaw 2.

A longitudinal groove or channel 14 is formed in the shank 9, and is adapted in cross-section to correspond to the spherical surface of a ball 15 which is retained in a pocket 16 in the handle A. This pocket 16 is tapered, with its rear wall converging toward the groove 14 in the shank 9, and contacts with the bottom of the groove 14 to grip the ball; a coil spring 17 acting between the handle A and the ball 15, to retain the ball at a point where its surface will be in con-

stant contact with the wedge faces of the grooves 14 and 16, thus forming a wedge to prevent any backward movement of the jaw 10. Sufficient space is provided in the deepest portion of the channel 16 to permit of the ball 15 being forced out of the wedge channel when it is desired to slide the jaw 10 freely in either direction. To accomplish this action, a plunger-rod 18, slidable in the groove 14, is provided. This plunger is actuated by a thumb-piece 19, the stem of which is secured to the plunger and passes through a slot 20 in the handle A.

In practice, when it is desired to fit the toothed jaws 10 and 13 of the wrench to a pipe, the ball 15 is loosened in its pocket and kept out of wedged contact with the handle A and the shank 9, by moving the plunger 18 forward and retaining it in that position until the proper adjustment of the jaw 10 is secured. This adjustment of the jaw 10 is obtained by moving the shank forward or backward, as desired, by means of the trigger 11. Upon releasing the thumb-piece 19, the spring 17 forces the ball 15 backward against the inclined surface of the channel 16, thereby forming a wedge to prevent the jaw 10 from being moved backward.

The gripping teeth on the jaw 2 are inclined inward, while those on the jaw 10 are inclined in the opposite direction, thus insuring a positive bite when in contact with the surface of a pipe. The spring-actuated pivoted jaw 2 automatically adjusts itself, and the pipe or nut to be gripped is turned by appropriately turning or oscillating the handle in the usual manner of pipe and other wrenches.

The jaw space between the jaws 2 and 10 is formed in such shape that the wrench may be used upon hexagonal pipe fittings.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a wrench, the combination of a handle, a jaw member pivoted thereto, a coacting jaw slidably mounted in the handle, a spring for pressing the pivoted jaw toward the sliding jaw, and a wedge member to lock the sliding jaw against backward movement.

2. In a wrench, the combination of a handle, a jaw member pivoted thereto, a coacting jaw slidably mounted in the handle, a spring for pressing the pivoted jaw toward the slid-

ing jaw, a wedge member to lock the sliding jaw against backward movement, and a plunger for operating said wedge member.

3. In a wrench, the combination of a handle, a jaw member pivoted thereto, a coacting jaw slidably mounted in the handle, a spring for pressing the pivoted jaw toward the sliding jaw, and a wedge member to lock the sliding jaw against backward movement, said wedge member comprising a ball operating in a pocket formed between the adjacent walls of the sliding member and handle, said pocket being wedge-shape and the deepest portion thereof farthest from the sliding member.

4. In a wrench, the combination of a handle, a jaw member pivoted thereto, a coacting jaw slidably mounted in the handle, a spring for pressing the pivoted jaw toward the sliding jaw, a wedge member to lock the sliding jaw against backward movement, said wedge member comprising a ball operating in a pocket formed between the adjacent walls of the sliding member and handle, said pocket being wedge-shape and the deepest portion thereof farthest from the sliding member, and means operated from the outside of the wrench for pressing said ball into the deeper portion of said pocket to permit of a free sliding movement of the sliding jaw.

5. In a wrench, the combination of a handle, a jaw member pivoted thereto, a coacting jaw slidably mounted in the handle, a spring for pressing the pivoted jaw toward the sliding jaw, a wedge member to lock the sliding jaw against backward movement, said wedge member comprising a ball operating in a pocket formed between the adjacent walls of the sliding member and handle, said

pocket being wedge-shape and the deepest portion thereof farthest from the sliding member, means operated from the outside of the wrench for pressing said ball into the deeper portion of said pocket to permit of a free sliding movement of the sliding jaw, a spring acting on the pivoted jaw to maintain it normally closed, a spring acting on the ball to press it outward normally into the narrow portion of the pocket, and a trigger for operating the sliding jaw.

6. In a wrench, the combination of a handle, a jaw member pivoted thereto, a coacting jaw slidably mounted in the handle, a spring for pressing the pivoted jaw toward the sliding jaw, a wedge member to lock the sliding jaw against backward movement, said wedge member comprising a ball operating in a pocket formed between the adjacent walls of the sliding member and handle, said pocket being wedge-shape and the deepest portion thereof farthest from the sliding member, means operated from the outside of the wrench for pressing said ball into the deeper portion of said pocket to permit of a free sliding movement of the sliding jaw, a spring acting on the pivoted jaw to maintain it normally closed, a spring acting on the ball to press it outward normally into the narrow portion of the pocket, a trigger for operating the sliding jaw, and a plunger acting on the ball contrariwise to its spring.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALVA A. PATTON.

Witnesses:

WM. F. BELDING, Jr.,
ANTONE VALENCIA.