No. 648,324. Patented Apr. 24, 1900.

# A. K. WOLFE.

## WRENCH.

(Application filed Aug. 11, 1899.)

(No Model.)

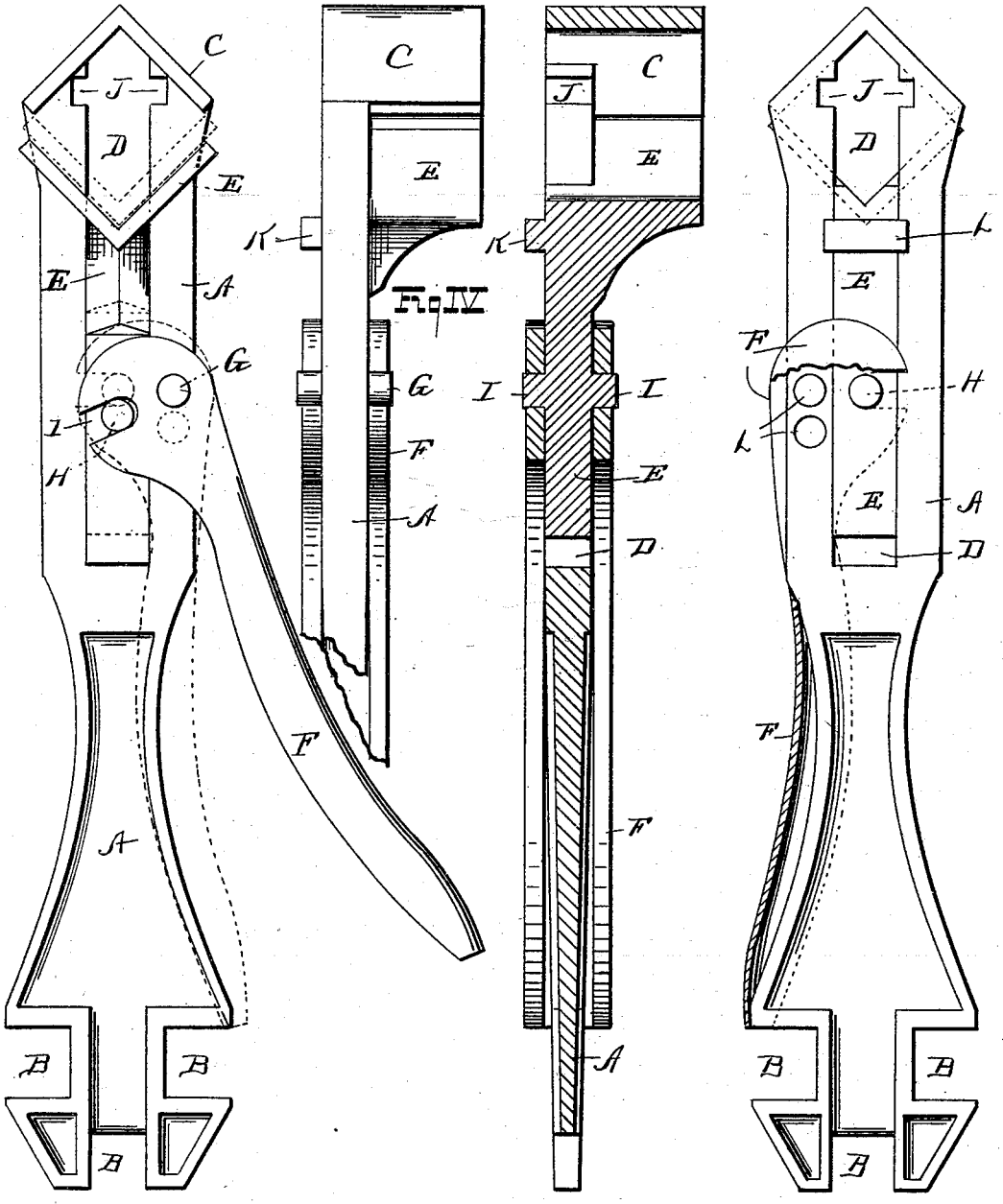


Fig I. Fig II. Fig III. Fig IV.

Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

ABNER K. WOLFE, OF KANSAS CITY, KANSAS.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 648,324, dated April 24, 1900.

Application filed August 11, 1899. Serial No. 726,916. (No model.)

*To all whom it may concern:*

Be it known that I, ABNER K. WOLFE, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented a new and useful Wrench, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in wrenches.

My invention is particularly adapted for use as a carriage or wagon wrench, but may be used for other purposes.

My invention provides a wrench having a fixed and a movable jaw combined with a cam-lever for operating the movable jaw, and each jaw being provided with a right-angled recess whereby the jaws may clamp all sides of a rectangular nut.

My invention provides, further, means by which the cam-lever may be adjusted so as to operate with nuts of various sizes.

My invention provides, further, a construction by means of which the parts may be quickly assembled.

My invention provides other peculiarities of construction hereinafter fully described and claimed.

In the accompanying drawings, Figure I represents a front view with the jaws represented in solid lines in the open position and in dotted lines in the closed position. Fig. II represents a central longitudinal sectional view, the jaws being shown in the closed position. Fig. III represents a rear view, the jaws being closed and the cam-lever having a portion broken away. Fig. IV represents a left side view, a portion of the shank and the cam-lever being broken away.

Similar letters of reference indicate similar parts.

A indicates the flat shank, provided, as is common with wrenches of this character, with the right-angled peripheral recesses B in the lower end thereof. From one side of the other end of the shank A projects at right angles therefrom the fixed jaw C, comprising two flanges disposed at right angles to each other. Longitudinally movable in a longitudinal slot D in the shank A is a sliding jaw E, the upper end of which is similar in form to and cooperates with the jaw C in grasping a nut. The shape of the two jaws C and E is such that all four sides of a rectangular nut are embraced by them. The sliding jaw E is reciprocated in the slot D by means of a cam-lever F, disposed by the side of the shank A, to which it is pivoted by means of a pivot-pin G, which extends through the shank A of the bifurcated upper end of the cam-lever. The two arms of the bifurcation are flat and parallel with each other and embrace the front and rear sides of the shank and the body of the sliding jaw E. Projecting from the front and rear of the sliding jaw E are the cylindrical pins or projections H, which are respectively engaged by lateral recesses I in the two arms of the cam-lever F. By moving the free or lower end of the cam-lever toward and from the shank A the sliding jaw E is reciprocated in the slot D toward and from the fixed jaw C. A lateral movement of the sliding jaw E toward the front or rear of the shank A is prevented by the right-angled portion of the jaw E, which overlaps the shank to the right and left of the slot D, and the transverse lug K, located upon the rear side of the jaw E and overlapping the shank to the right and left of the said slot. Oppositely disposed, one upon each side of the slot D in the shank A, near the upper end of the slot, are two recesses J, which are provided to permit the insertion and placing in position of the sliding jaw E in the slot D. By removing the pivot-pin G and then the cam-lever F the lower end of the sliding jaw E may be swung rearward to a position at right angles to the operative position. The jaw may then be moved toward the fixed jaw C until the lug K is opposite the recesses J, through which the lug may pass and the sliding jaw thus be removed from the shank. By reversing this operation the sliding jaw may be again secured in operative position. In the shank A, adjacent to and below the hole in which is located the pivot-pin G, is provided a similar hole adapted to receive the pivot-pin when it is desired to have the jaws open sufficiently wide to take in a nut larger than can be taken in when the cam-lever is secured in the position shown in the drawings. The two pivot-pin holes in the shank are indicated by L and both are shown in Fig. III, the pivot-pin being omitted in that view. In

operating my invention the cam-lever F is swung outwardly from the shank A, thus drawing the sliding jaw E away from the jaw C. The nut is then embraced by the jaws, pressure being applied to the cam-lever, forcing it toward the shank and the sliding jaw toward the fixed jaw. The nut will thus be tightly held on all four sides by the right-angled jaws.

My invention is subjective of many modifications without departing from its spirit.

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

1. In a wrench, the combination with the shank provided at one end with a fixed jaw and a longitudinal slot, of a sliding jaw movable lengthwise in the said slot and provided with projections on each side of the slot and on each side of the shank, recesses in the shank on each side of the slot through which the projections on one side of the sliding jaw are adapted to pass when the said jaw is in the proper position, a lever, and means by which the sliding jaw is moved lengthwise in the slot when the lever is operated, substantially as described.

2. In a wrench, the combination with the shank provided at one end with a longitudinal slot and a fixed jaw having a right-angled recess, of a sliding jaw having a similar recess coöperating therewith and having also an abutment, and a lever pivoted to the shank and engaging the abutment whereby the sliding jaw may be reciprocated in the said slot when the lever is operated, substantially as described.

3. In a wrench, the combination with the shank provided with a longitudinal slot having oppositely-disposed lateral recesses, the shank being provided with a fixed jaw, of a sliding jaw movable in the said slot and provided with a transverse lug projecting beyond the sides of the slot but adapted to pass through the recessed portions of the slot, and means for moving the sliding jaw lengthwise in the slot to and from the fixed jaw, substantially as described.

4. In a wrench, the combination with the shank provided with a fixed jaw, of a sliding jaw longitudinally movable on the shank, and a cam-lever provided with a bifurcated end embracing both sides of the shank and the sliding jaw and pivoted to the shank and engaging abutments on the sliding jaw so as to reciprocate the same upon the shank when the cam-lever is operated upon its pivotal connection, substantially as described.

5. In a wrench, the combination with the shank provided with a fixed jaw, of a sliding jaw longitudinally movable on the shank, and provided with lateral abutments, and a lever bifurcated at one end and having its bifurcated ends embrace the two sides of the shank and sliding jaw, the lever being provided with recesses engaging the said abutments, and a pivot-pin engaging the lever and the shank, substantially as described.

6. In a wrench, the combination with the shank provided with a fixed jaw and a longitudinal slot, of a sliding jaw movable lengthwise in the slot, the slot being provided with a widened portion and the sliding jaw provided with a lug extending laterally beyond the slot but adapted to pass through the widened portion of the slot, and a lever pivoted to the shank and engaging the sliding jaw so as to move the same lengthwise when the lever is operated, substantially as described.

7. In a wrench, the combination with the shank provided with a fixed jaw and a longitudinal slot having a widened portion, of a sliding jaw movable lengthwise in the slot and provided with transverse projections on each side of the shank and extending beyond the sides of the slot, the projections on one side of the sliding jaw being adapted to pass through the widened portion of the slot, a lever for operating the sliding jaw and means by which the lever may be provided with a plurality of points of pivotal connection with the shank, substantially as described.

8. In a wrench, the combination with the shank having a fixed jaw having a right-angled recess, the shank being provided also with a longitudinal slot, of a sliding member mounted in the slot and provided with a jaw similar in shape to the fixed jaw and coöperating therewith, and a lever pivoted to the shank and engaging the sliding member so as to move the same lengthwise when the lever is operated, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ABNER K. WOLFE.

Witnesses:
WARREN D. HOUSE,
DENTON DUNN.