(No Model.)

J. B. DEAN.

WRENCH.

No. 347,580. Patented Aug. 17, 1886.

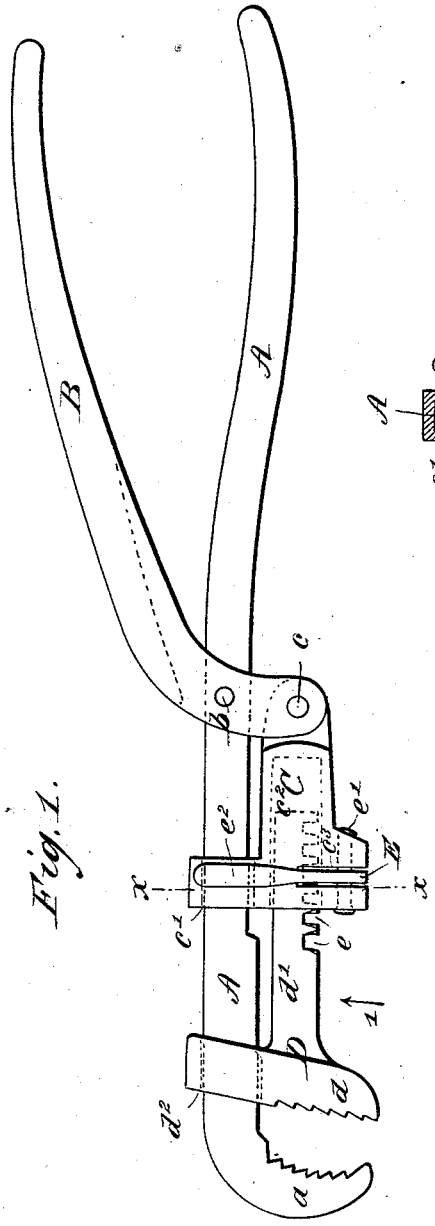

Fig. 1.

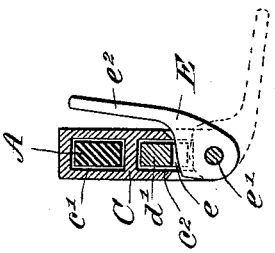

Fig. 3.

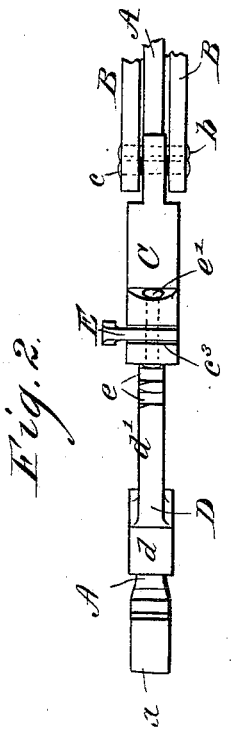

Fig. 2.

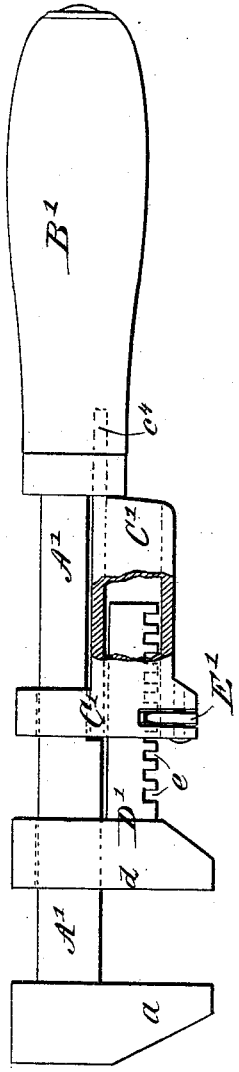

Fig. 4.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 347,580, dated August 17, 1886.

Application filed February 5, 1886. Serial No. 190,936. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. DEAN, of Stockton, in the county of Hunterdon and State of New Jersey, have invented certain new and useful Improvements in Wrenches, of which the following is a full, clear, and exact description.

My invention relates to wrenches, and has for its object to provide a simple, inexpensive, efficient, and easily-handled tool of this class, which may be used with economy of time and labor in doing a variety of work around pipes, and in other situations where a tool of this kind would be serviceable.

The invention consists in certain novel features of construction and combinations of parts of the wrench, all as hereinafter set forth.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a pipe-wrench made in accordance with my invention. Fig. 2 is an edge view of the front or head portion of the wrench, as viewed in direction of the arrow 1 in Fig. 1. Fig. 3 is a transverse sectional elevation taken on the line $x\ x$, Fig. 1; and Fig. 4 is a side elevation of a monkey-wrench embodying some features of the invention, and partly broken away and in section.

I will first refer to Figs. 1, 2, and 3 of the drawings, which illustrate the pipe-wrench. This tool is made with a long arm or bar, A, having its forward end turned over and serrated on the inner edge or face to form the fixed jaw *a* of the wrench. To the arm A is pivoted at *b* the lever B, the long arm of which, together with the back end of the main arm A, forms the handle of the tool. To the outer end of the short arm of the lever B is pivoted at *c* the back end of the metal box C, which has two parallel and longitudinally-ranging slots, one at *c'*, through which the main arm or bar A passes loosely, and the other at c^2, in which is fitted loosely the shank *d'* of the ⊢-bar D, which at its end or head portion is slotted at d^2 for the passage of the arm A, and at its part directly in front of the shank *d'* is serrated, opposite the serrations of the fixed jaw *a*, where it forms the movable jaw *d* of the wrench. The outer edge of the shank *d'* of the bar D is provided with a series of notches, *e*, any one of which, accordingly as the bar-shank is moved endwise in the box C, may be engaged by a pawl-lever, E, which is pivoted on a pin, *e'*, passed through lugs of the box C, and across a slot, c^3, of the box, in which the lever E is loosely fitted on its pivot.

In using the pipe-wrench the pawl-lever E will be swung outward on its pivot *e'*, as indicated in dotted lines in Fig. 3, by grasping the stem e^2 of the lever, which in this position will be free from the notches *e* of the jaw-bar D, which then may be slipped along by its stem *d'* in the box C, to separate the jaws *a d* for a distance a little greater than the diameter of the pipe or other article to be gripped, when the lever B stands away from the back end of the main arm or bar A, and the pawl-lever E then will be swung over to the position shown in full lines in Figs. 1, 2, and 3, to engage one of the shank-notches *e*, to lock the jaw-bar to the box C, and as the tool is grasped firmly in the hand and the lever B is swung toward the main arm A the box C and jaw-bar D will be caused by the lever B to move forward on bar A until the jaw *d* bites the pipe and clamps it firmly between the jaws *a d*, when the pipe or other article may be turned either way, as required.

It is evident that by fitting the parts as above described the movable jaw may be released from or caused to grip pipes with the greatest facility when the jaw-bar D once is set in the box C and locked by the lever E at the proper place, which also may be done quickly and easily; hence the tool is very easily adjusted, and is handy to operate in doing a variety of jobs around pipes or other work of various kinds, and the wrench may be made in different sizes to suit light or heavy work.

In the modification shown in Fig. 4 the main bar A' of the monkey-wrench carries the fixed jaw *a*, and the movable jaw *d* is part of the bar D', whose stem is fitted in the box C', having a pawl-lever, E', adapted to engage slots *e* of the stem of bar D', the bar and box being placed on the bar A' prior to the fitting on of the wrench-handle B', into which, next the bar A', a stem, c^4, of the box C' passes. In this instance the box C' is immovable endwise, but the bar D' may be set along the bar A' and in

the box C', and the lever E' may be entered into any one of the notches *e* of bar D', to lock the movable jaw *d* at any distance from the fixed jaw *a*, as the work to be gripped by the wrench shall require.

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

1. The combination, in a wrench, of an arm or bar, A, having the fixed jaw *a*, a lever, B, pivoted to bar A at *b*, a box, C, fitted to slide on bar A, and pivoted at *c* to lever B, a bar, D, carrying a jaw, *d*, and fitted to slide on bar A and in box C, and a locking device adapted to hold the bar D against endwise movement in the box C, substantially as herein set forth.

2. The combination, in a wrench, of an arm or bar, A, having the fixed jaw *a*, a lever, B, pivoted to bar A at *b*, a box, C, fitted to slide on bar A, and pivoted at *c* to lever B, a bar, D, carrying a jaw, *d*, and fitted to slide on bar A and in box C, and provided with slots *e*, and a pawl-lever, E, pivoted to box C and adapted to enter one of the slots *e* of bar D, to lock it to the box, substantially as herein set forth.

3. In a wrench, the combination, with the main bar provided with a fixed jaw, of a box held to the main bar, a bar carrying the movable jaw of the wrench and fitted on the main bar, and also in the box, and provided with slots, as at *e*, and a lever, as at E, pivoted to the box and adapted to enter the slots *e* of the movable-jaw bar, substantially as herein set forth.

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Witnesses:

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SAMUEL E. DIAMOND.