

(No Model.)

A. E. JENKS.
WRENCH.

No. 585,443.

Patented June 29, 1897.

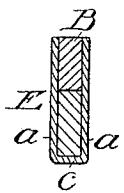


Fig. 3.

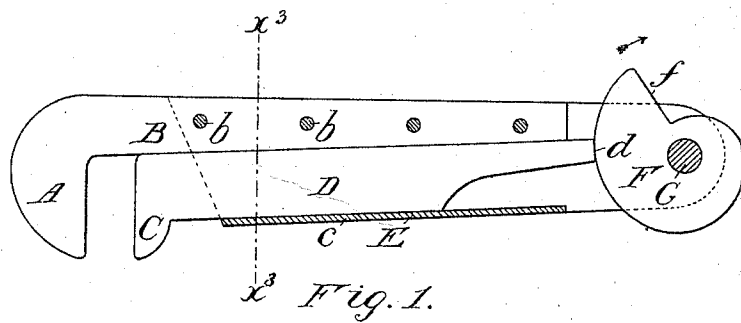


Fig. 1.

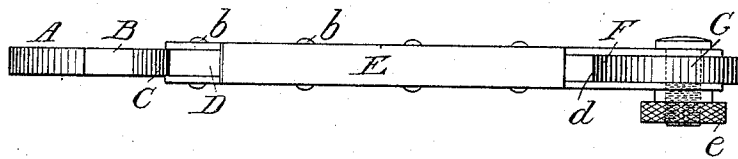


Fig. 2.

Witnesses:

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UNITED STATES PATENT OFFICE.

ALBERT ERNEST JENKS, OF HEATH TOWN, ENGLAND.

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SPECIFICATION forming part of Letters Patent No. 585,443, dated June 29, 1897.

Application filed March 30, 1897. Serial No. 629,908. (No model.)

To all whom it may concern:

Be it known that I, ALBERT ERNEST JENKS, a subject of the Queen of Great Britain, residing at Heath Town, near Wolverhampton, in the county of Stafford, England, have invented certain new and useful Improvements in Movable or Adjustable Spanners or Wrenches, of which the following is a specification.

An adjustable wrench as usually constructed with a screw-and-nut arrangement or other screw contrivance for operating the moving jaw is subject to the inconvenience that the setting of the moving jaw is a somewhat tedious operation and that the wrench cannot be made so thin or flat from side to side as is desirable for a portable wrench such as is used by cyclists; and the object of this invention is to provide a wrench which shall be of a simple and cheap construction and free from the inconvenience experienced in using such wrenches of the ordinary type.

A wrench constructed according to this invention is illustrated by the drawings herewith.

Figure 1 is a side elevation of the wrench with one side of the sheath in which the shank of the moving jaw is guided cut away and with the pivot-pin in section. Fig. 2 is an inner or under edge view of the wrench. Fig. 3 is a transverse section through the wrench, taken on line x^3 , showing only the parts which appear in the plane of the section.

A is the fixed jaw of the wrench. It has a shank B, which forms a portion of the wrench-handle.

C is the moving jaw. It has a shank D, which is adapted to slide endwise within a sheath E. The sheath constitutes the remaining portion of the wrench-handle and is formed conveniently of sheet metal of the trough shape shown by Fig. 3, having two sides a , which are riveted by means of rivets b to opposite faces of the shank B, and a part c , which ties together the sides a and keeps the sliding shank D in place between the sides.

F is a cam rotatively mounted upon a fixed pin G between extensions of the sides a of the sheath. The pin G is mounted in the said extensions. The rear end d of the shank D bears on the periphery of the cam F, which has such a form—preferably volute, as

shown—that when the cam is turned in one direction, while the end d of the shank D is in contact with it, it will press the moving jaw C up toward the fixed jaw, and when turned in the opposite direction will move out of contact with such shank and allow the moving jaw to be opened.

When the wrench is being used to turn a nut or other screwed part, the pressure against the moving jaw C causes the rear end d of the shank D to press against the periphery of the cam, and the friction thereby occasioned will usually prevent the cam from turning and consequently prevent the moving jaw from yielding; but to insure that the cam shall be securely held under all circumstances in any position into which it may have been moved the pin G may be screw-threaded and be provided with a nut e , having a milled edge or otherwise adapted for convenient manipulation, as clearly shown in Fig. 2. When the cam has been turned into any required position, it may be securely fixed therein by clamping the backwardly-extended ends of the sides a of the sheath against its opposite faces by means of the nut e .

When the periphery of the cam has a volute shape, a shoulder f is formed between the portions of greatest and least projection, as shown, and the wrench may be readily set for use with the largest size of nut or bolt-head for which it is adapted by pressing the moving jaw backward with one hand to keep the end of the shank D constantly against the periphery of the cam and turning the cam in the direction of the arrow with the other hand until the shoulder f comes against the inside or underside of the end d of the shank.

The main advantage, however, in using a cam of volute shape arises from the fact that an entire revolution, or nearly so, of the cam is necessary to cause the full traverse of the moving jaw inward, and thus the curve of the periphery of the cam is such as to approximate more nearly to the curve of a circle struck from the center on which the cam turns than is the case with cams of other shape and offers more direct resistance to the backward pressure of the moving-jaw shank, with the result that the cam is less liable to turn under such pressure than in the case of cams of other shape.

Having thus described my invention, I claim—

1. An adjustable wrench or spanner, comprising as its essentials a fixed jaw, a movable jaw having a shank, a guide for the said shank, and a cam rotatively mounted at the rear end of the handle of the wrench in the plane of the shank of the moving jaw and adapted to operate the jaw for closing the jaws, substantially as set forth.
2. An adjustable wrench or spanner, comprising as its essentials a fixed jaw, a movable jaw having a shank, a guide for the said shank, and a volute cam rotatively mounted and adapted to operate the said moving jaw to close the jaws, substantially as set forth.
3. An adjustable wrench or spanner, comprising as its essentials a fixed jaw, a movable jaw having a shank, a guide for the said shank, a cam rotatively mounted at the rear end of the handle of the wrench in the plane of the shank of the moving jaw and adapted to operate said jaw for closing the jaws, and means substantially as described for securing the cam against rotation when set, substantially as set forth.
4. An adjustable wrench or spanner comprising a fixed jaw A, a movable jaw C, hav-

ing a shank D, a sheath E, embracing the shank D and forming a keeper and guide therefor, and a cam F, rotatively mounted between rear extensions of the sides of the sheath E, said cam being adapted to impinge upon the shank of the movable jaw and operate said jaw by its rotation, substantially as set forth.

5. An adjustable wrench or spanner comprising a fixed jaw A, having a shank B, a movable jaw C, having a shank D, a sheet-metal sheath E, embracing the shank of the moving jaw and secured rigidly to the shank of the fixed jaw, said sheath having rear extensions of its sides *a*, a cam F, rotatively mounted between said extensions and adapted to impinge upon the shank of the moving jaw to operate the latter, and means substantially as described for clamping fast said cam when it has been set, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ALBERT ERNEST JENKS.

Witnesses:

STEPHEN WATKINS,
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