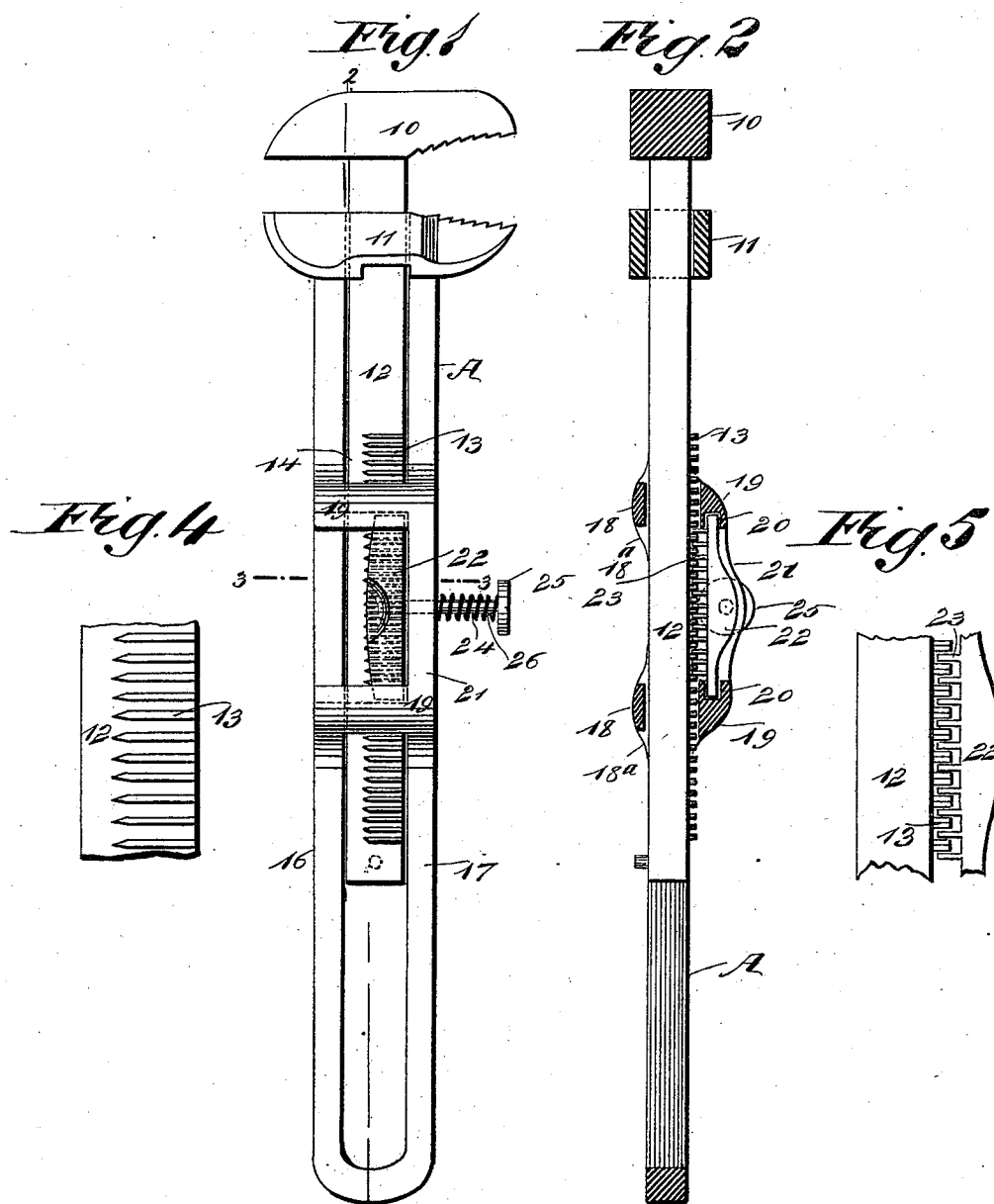


No Model.)

W. N. SMITH.
WRENCH.

No. 529,632.

Patented Nov. 20, 1894.



WITNESSES:
W. N. Smith
Frederick Ker.

Fig. 3.
12, 18, 20, 21, 22, 23, 24, 25, 26

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WILLIAM N. SMITH, OF SANTA CRUZ, CALIFORNIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 529,632, dated November 20, 1894.

Application filed June 29, 1894. Serial No. 516,137. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM N. SMITH, of Santa Cruz, in the county of Santa Cruz and State of California, have invented a new and Improved Wrench, of which the following is a full, clear, and exact description.

My invention relates to an improvement in wrenches, and it has for its object to provide a monkey or pipe wrench which will be exceedingly simple and durable in its construction, and one in which the lower or inner jaw may be expeditiously, conveniently and accurately adjusted to a pipe or nut, the adjustment being accomplished with one hand.

A further object of the invention is to provide a wrench of the character above described, which will be exceedingly simple, durable and economic, and one that will comprise but few parts, any portion being capable of ready replacement should it become damaged or otherwise unfit for use.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a side elevation of the improved wrench. Fig. 2 is a longitudinal section taken substantially on the line 2—2 of Fig. 1. Fig. 3 is a transverse section taken substantially on the line 3—3 of Fig. 1. Fig. 4 is a detail view of the rack face of the sliding bar of the wrench; and Fig. 5 is a detail view, illustrating the application of the locking block to the said rack surface.

In carrying out the invention the jaws 10 and 11 of the wrench are so shaped that they are capable of receiving a pipe at one end and at the other end a nut, or the equivalent thereof, but the jaws may be formed entirely to receive polygonal objects, or objects that are round, or substantially so, in cross section. The upper or outer jaw 10, is attached to or formed integral with a sliding bar 12, and the said bar upon one of its side faces is provided for a predetermined distance with a series of transversely located teeth 13, and

the said teeth are made to extend from one edge and terminate short of the opposite edge, leaving a plain surface 14 upon the sliding bar in front of the series of teeth. The bar 12, or shank for the outer jaw 10, is adapted to slide preferably in a skeleton shell A, which shell is preferably of such length as to form a handle for the wrench. The shell consists of two side pieces or bars 16 and 17, connected at their lower ends, and formed integral with or attached to the inner or lower jaw 11 at their upper ends, as in this form of wrench the upper or outer jaw is the movable one and the inner or lower jaw the stationary one.

The side bars 16 and 17 are connected at their back by cross bars 18, preferably two in number, which cross bars are held out of the plane of the edges of the side bars through the medium of ears 18^a formed upon the latter, as shown in Fig. 2; and two corresponding cross bars 19, are located at the opposite side of the frame, the latter side bars being of such thickness that longitudinal grooves 20, are produced in their inner or opposing faces, as shown in Fig. 2; and the cross bars 19 of the frame A are recessed upon their inner faces to admit of the passage of the teeth of the sliding bar 12.

The cross bars 19, or as they may be properly termed the front cross bars, are connected at that side of the frame at which the teeth 13 are located, by means of a longitudinal bar 21, which may be, and preferably is, formed integral with the side bar 17 of the frame. A locking block 22, is held to slide at its ends in the grooves 20 of the front cross bars 19 of the frame, and this locking block is provided with teeth 23 upon its inner face, as shown in Figs. 2 and 5, the teeth of the locking block being adapted to enter the spaces between the teeth of the sliding bar 12. The block 22 is manipulated transversely across the said sliding bar through the medium of a spindle 24, which is attached to the block and is free to slide in the connecting bar 21 at the front of the frame. The spindle is provided with a head 25 in order that it may be readily manipulated with one finger or with the thumb; and a spring 26, is coiled around the spindle, as shown in Fig. 3, enter-

ing a socket in the frame and having bearing against the spindle head.

In the operation of the wrench the spindle 24 is pressed inward until the locking block 5 is carried over the plain surface 14 of the sliding bar and over the side of the frame adjacent to said plain surface 14 of the sliding bar between the front cross bars 19, as shown in Fig. 3. The locking block will now be free 10 from engagement with the teeth of the sliding bar 12, and the latter may be adjusted inwardly or outwardly to receive any sized material to be operated upon between the opposing jaws 10 and 11, and the moment the adjustment is made the spindle is released and 15 the spring 26 will immediately return the locking block to an engagement with the teeth of the sliding bar, holding the jaws in their adjusted position.

20 In this form of wrench the jaws are capable of very fine adjustment, since the distance of adjustment from one tooth to another can range from about two thirty-seconds to one-eighth of an inch.

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

1. In a wrench, a framing having side bars and cross bars connecting the same, such 30 cross bars being provided with guides for the locking block, the bar or shank sliding within said frame between the side bars thereof and provided adjacent to the cross bars with a series of teeth and the locking block movable 35 in the guides of said cross bars and engaging

the teeth of the shank or bar, all substantially as and for the purposes set forth.

2. In a wrench, the combination, with a frame provided with transverse slide-ways, and a spring-controlled toothed block held to 40 travel in the said ways, the frame being provided with a jaw at one end, of a bar held to slide in the said frame, terminating at one end in a jaw and provided with a series of teeth formed upon one side, adapted for normal 45 engagement with the teeth of the said spring-controlled block, the block being capable of movement over the frame clear of the said teeth, as and for the purpose specified.

3. In a wrench, the combination, with a 50 frame, transverse slide-ways formed upon one side of the frame, a toothed block having movement in said slide-ways, and a jaw formed at one end of the frame, of a bar having sliding movement in the frame, terminating at 55 one end in a jaw and provided upon one of its faces with series of teeth adapted normally for engagement with the teeth of the said block, the teeth of the sliding bar being of less length than the width of the surface upon 60 which they are located, whereby a blank space is formed upon the sliding bar at one side of said series of teeth, over which surface the said block is carried when the sliding bar is to be adjusted, as and for the purpose specified. 65

WILLIAM N. SMITH.

Witnesses:

C. M. LEWIS,
GERALDINE MEYRICK.