

No. 778,814.

PATENTED DEC. 27, 1904.

W. VAN HORN.  
WRENCH.

APPLICATION FILED OCT. 28, 1904.

Fig. 1.

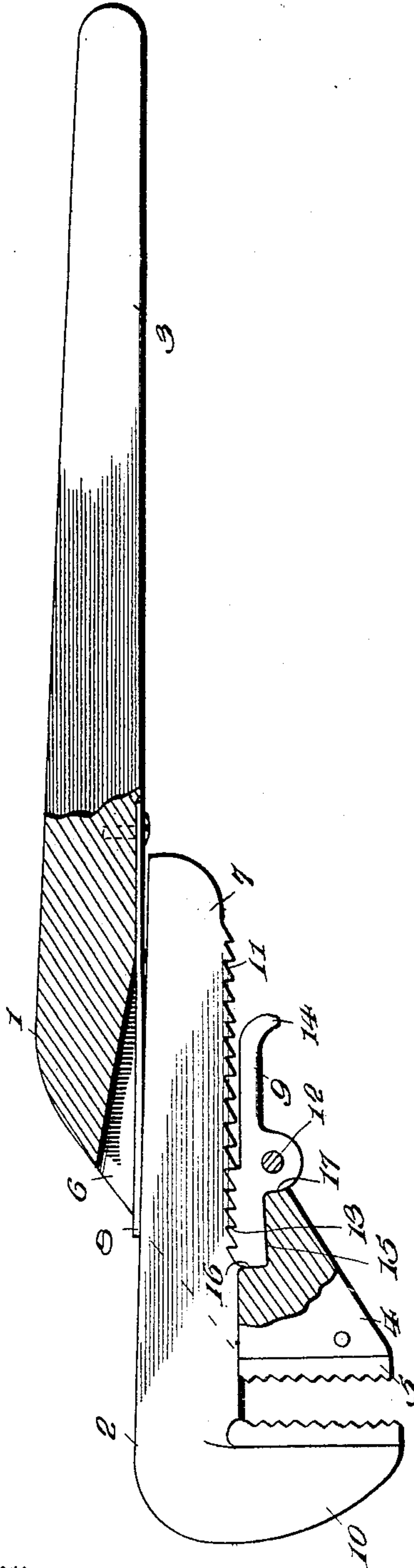
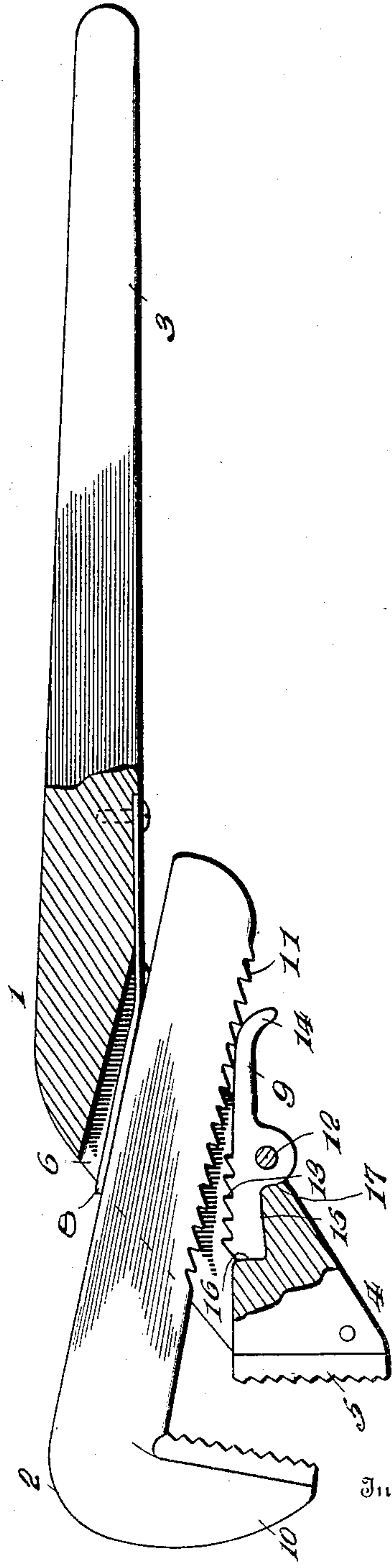


Fig. 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM VAN HORN, OF PIQUA, OHIO.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 778,814, dated December 27, 1904.

Application filed October 28, 1904. Serial No. 230,415.

*To all whom it may concern:*

Be it known that I, WILLIAM VAN HORN, a citizen of the United States, residing at Piqua, in the county of Miami and State of Ohio, have  
 5 invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention provides a wrench of unique appearance and structure of the ratchet type  
 10 which can be instantly adjusted to the work and which will be effective and durable and convenient of operation.

For a full description of the invention and the merits thereof and also to acquire a knowl-  
 15 edge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment thereof is shown in the accompanying drawings, in  
 25 which—

Figure 1 is a side view of a wrench embodying the invention, a portion of the head of the fixed member being broken away to show the relation of the dog and movable member  
 30 when interlocked and occupying an adjusted position. Fig. 2 is a view similar to Fig. 1, showing the relative arrangement of the movable member and dog when disengaged.

Corresponding and like parts are referred  
 35 to in the following description and indicated in both views of the drawings by the same reference characters.

The wrench comprises a fixed member 1 and a movable member 2. The fixed member  
 40 embodies a handle 3 and a head 4, the latter terminating in a jaw 5. The head 4 is inclined or obliquely disposed with reference to the handle 3 and constitutes in the preferable construction an integral part thereof. A  
 45 slot or opening 6 is formed in the head and is of a size to receive the shank 7 of the movable member 2. The slot or opening 6 is of a length to admit of the movable member 2 having an oscillatory movement essential to  
 50 admit of adjustment of the movable member

to different-sized objects and to provide for ratchet action when the wrench is in operation. A flat spring 8 is secured at one end to the inner side of the handle 3, and its opposite end portion passes through the slot or  
 55 opening 6 and is adapted to exert a pressure upon the movable member to normally hold it in engagement with the cooperating dog 9. The movable member is adjustable in the head 4 by a sliding movement and comprises  
 60 a shank 7 and jaw 10. The shank 7 is of a thickness corresponding to the width of the opening 6, so as to prevent any appreciable lateral play of the movable member. The edge of the shank 7, facing away from the handle  
 65 3, is toothed, as indicated at 11.

The dog 9 is pivotally connected to the head 4 at a point between its ends, as shown at 12, and its inner end is toothed along the edge facing the shank 7, as indicated at 13,  
 70 and its outer end is curved away from said shank, as indicated at 14. The head 4 and central portion of the dog 9 are provided with semicircular enlargements which are apertured to receive the pivot-fastening 12. The  
 75 outer wall of the slot or opening 6 is recessed to receive the inner end of the dog 9, as shown at 15, and shoulders 16 and 17 are formed at opposite ends of the recess 15 for  
 80 respectively the inner end and the semicircular enlargement of the dog 9 to abut against, so as to sustain the pulling strain upon the movable member when the wrench is in operation, thereby releasing the pivot-fastening  
 85 12 and materially increasing the life of the tool.

When the wrench is adjusted to fit a piece of work or the parts occupy a normal position, the movable member and cooperating parts appear as illustrated in Fig. 1. When  
 90 it is required to adjust the wrench, the movable member is relatively inclined, as shown in Fig. 2, and the rear end of the dog 9 is pressed upon to throw the teeth 13 out of engagement with the teeth 11, thereby admit-  
 95 ting of sliding the member 2 either inward or outward, according as the distance between the jaws is to be decreased or increased to conform to the size of the object to be gripped. Upon releasing the movable member the  
 100



spring 8 will carry it toward the outer end of the slot 6 and cause the teeth 11 to interlock with the teeth 13. The pivotal mounting of the dog 9 enables it to move with the member 5 2 in the ratchet action of the tool when in operation. The inner end of the dog 9, as well as the shoulder 16, is formed on the arc of a circle concentric with the pivot-fastening 12, and the shoulder 17 and abutting part are 10 similarly formed concentric with the pivot-fastening 12, whereby contact is preserved between the shoulders 16 and 17 and subjacent portions of the dog 9 at all times during the vibratory movement of the dog incident to 15 the ratchet action of the movable member 2.

Having thus described the invention, what is claimed as new is—

1. A wrench comprising a fixed member having at one end an obliquely-disposed head terminating in a jaw and provided with a slot, a 20 movable member comprising a shank and jaw, said shank being slidably mounted in the slot of said oblique head and having teeth along its outer edge, a spring exerting an outward 25 pressure upon said movable member, and a dog pivoted to the aforesaid head and ar-

ranged at the outer end of the slot thereof and adapted to interlock with the teeth of the movable member and hold it in an adjusted position, substantially as set forth. 30

2. A wrench comprising a fixed member consisting of a handle and an oblique head at one end thereof, said head being formed with a slot and a recess in the outer wall of said slot at the rear end thereof, a movable member 35 comprising a jaw and shank, the latter being slidably mounted in the slot of said oblique head and having its outer edge toothed, a spring secured to the fixed member and exerting an outward pressure upon the movable 40 member, and a dog pivoted to said oblique head and having its rear end curved and its inner end seated in the aforementioned recess and abutting against the ends thereof to relieve the pivot-fastening of strain when the 45 tool is in operation, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM VAN HORN. [L. s.]

Witnesses:

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