

No. 828,440.

J. F. SULLIVAN.
WRENCH.

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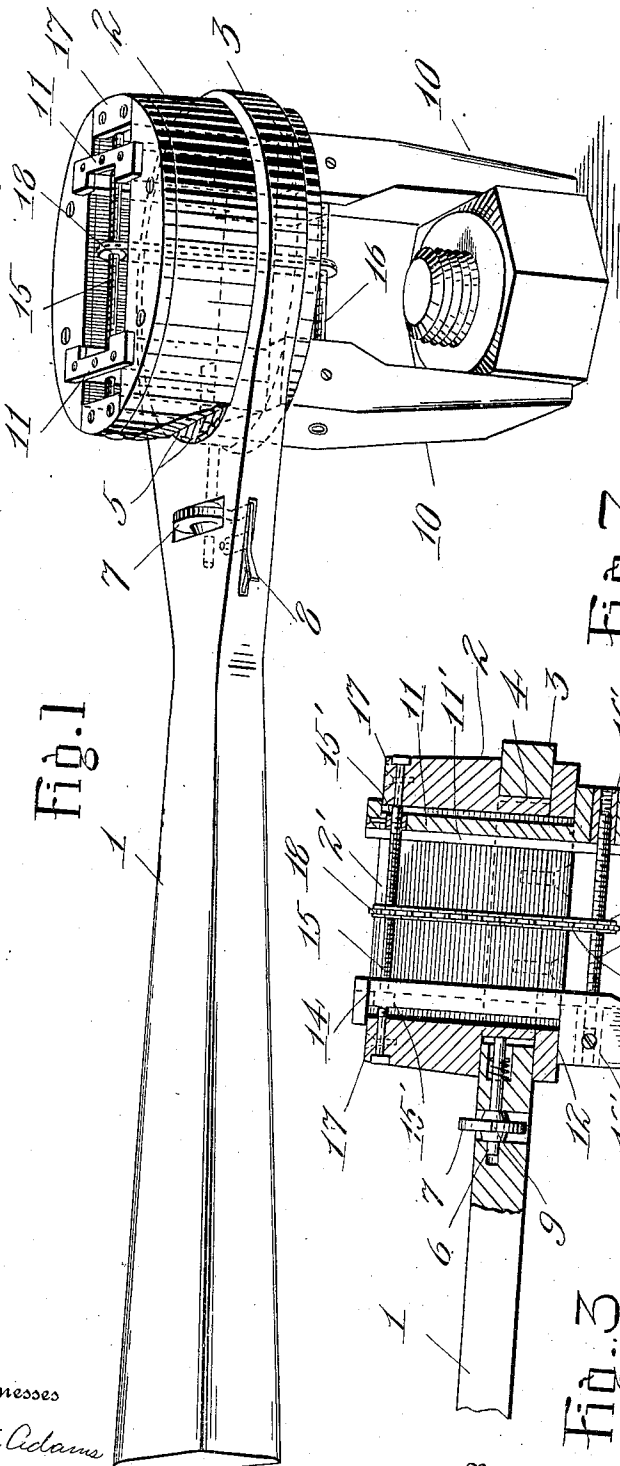


Fig. 1

Fig. 2

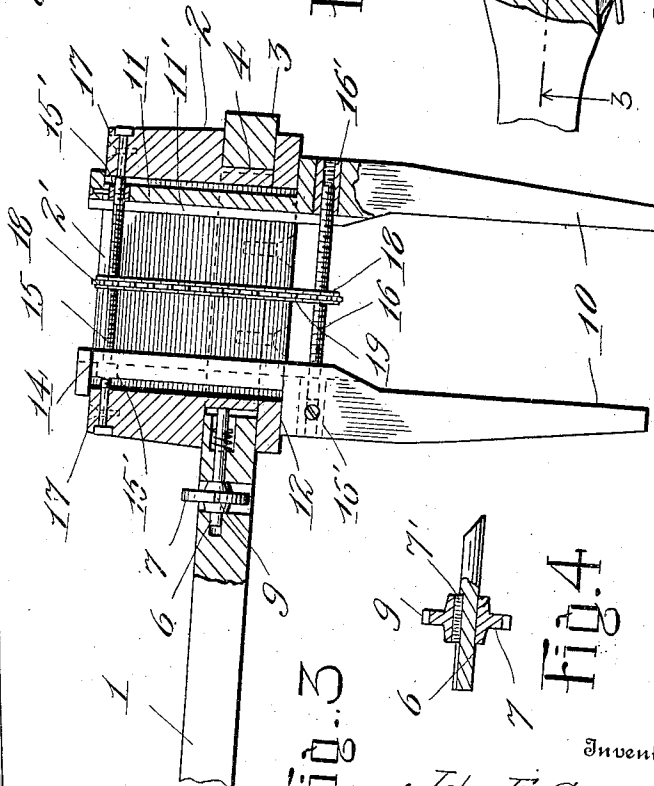
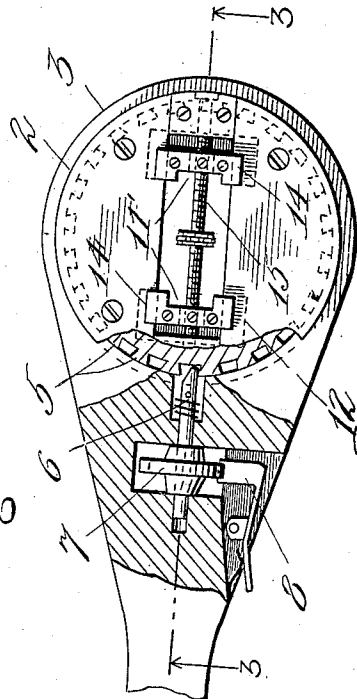


Fig. 3

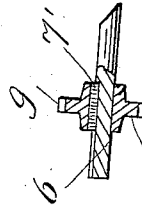


Fig. 4

Witnesses
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UNITED STATES PATENT OFFICE.

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WRENCH.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN F. SULLIVAN, a citizen of the United States of America, and a resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful improvements in Wrenches, of which the following is a specification.

The primary object of my invention is the provision of a simple and efficient wrench especially adapted for turning nuts or the like which are located in recesses or corners.

With the above and other objects to be referred to in the following description in view my invention resides in the construction, combination, and arrangement of parts, as set forth in this specification and defined in the appended claim.

With reference to the drawings filed herewith and in which like reference-numerals designate corresponding parts throughout, Figure 1 is a view in perspective, showing my improved wrench in partial broken section and applied to a nut. Fig. 2 is a plan view of the wrench in partial section and shown with a portion of the lever broken away. Fig. 3 is a vertical section taken on line 3 3 of Fig. 2, and Fig. 4 is a detail.

In carrying out my invention I provide a suitable lever 1 and a head, as 2, the former having an annular-like portion 3, which embraces said head, being fitted snugly but rotatably in a groove 4, conveniently formed in the periphery thereof.

Between the lever and head is a releasable driving connection conveniently consisting of suitable ratchet-teeth 5, formed in the bottom wall of groove 4, and a coacting pawl, as 6, mounted on said lever and consisting of a bar beveled on one side at one extremity.

The pawl 6 is slidably and rotatably mounted in a suitable recess provided in lever 1 and is yieldingly held to engage with the teeth 5 on head 2 by a suitable spring.

Related to pawl 6 is a reversing member, as 7, by means of which the pawl may be rotatably adjusted to reverse the direction that head 2 will be rotated when lever 1 is reciprocated. This member is formed with an aperture which slidably receives the stem portion of the pawl and carries a feather 7', (see Fig. 4,) which engages in a feather-way formed in said stem.

Reference-numeral 8 indicates a spring-pressed catch mounted on lever 1 at one side of member 7 and adapted to engage in one or

the other of the notches 9, formed in said member at diametrically opposite points, and thereby secure pawl 6 in either of its adjusted positions.

Mounted on the head 2 are jaws, as 10 10, which are disposed at opposite sides of the axis of and project from one side of the head. These jaws are each provided with a stem 11, which fits snugly but slidably between the side walls of an elongated aperture 2', formed in said head, and suitable shoulders 12 and 14 are provided on the stem, at each side edge thereof, which slidably embrace the head.

To adjust the jaws 10 and secure them in adjusted positions, I provide screws 15 and 16, which are each formed with right-hand screw-threads on one end portion and left-hand screw-threads on the other end portion.

The screw 15 is preferably disposed adjacent the upper side face of head 2, with its screw-threaded portions engaging respective screw-threaded bushings 15', secured in opposite apertures formed in the stems 11. This screw has its extremities reduced in diameter and rotatably engaged in respective journals 17, provided on said head, while suitable collars are secured to said extremities to prevent longitudinal movement of the screw.

The screw 16 is disposed adjacent the lower side surface of head 2, with its screw-threaded portions engaging respective screw-threaded bushings 16', secured in opposite apertures formed in the base end portions of jaws 10.

The screws 15 and 16 are preferably connected for simultaneous operation, and for this purpose I provide sprocket-wheels 18 18, which are secured each to its respective screw substantially midway the lengths thereof, and a link belt 19, which passes about said wheels, so as to connect the same for simultaneous operation.

Extending along the opposing faces of the stems 11 are recesses 11', which are of suitable width to receive freely the sprocket-wheels 18, thereby permitting jaws 10 to be brought into close proximity to each other to engage nuts of small diameter.

When desired to employ the wrench for turning a nut, the operator applies one of his thumbs to the ends of the teeth of the upper sprocket 18 to rotate the screws 15 and 16 in the proper direction to adjust the jaws 10. He then adjusts pawl 6 for proper engagement with the ratchet-teeth 5 to cause head 2

to move with lever 1 when it is moved in the proper direction to turn the nut as desired.

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

5 In a wrench, a head having an elongated aperture, a pair of jaws projecting from one side of said head, stems fixed to said jaws and
10 projecting into said aperture of the head, screws spaced apart and each provided on its opposite end portions with screw-threads of opposite hands engaged with corresponding

screw-threads provided on the respective stems, sprocket-wheels secured to said screws between said stems, and a chain passing over said sprocket-wheels, the opposing faces of said stems being recessed to receive said sprocket-wheels and chain, as specified.

Signed at Seattle, Washington, this 22d day of January, 1906.

JOHN F. SULLIVAN.

Witnesses:

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