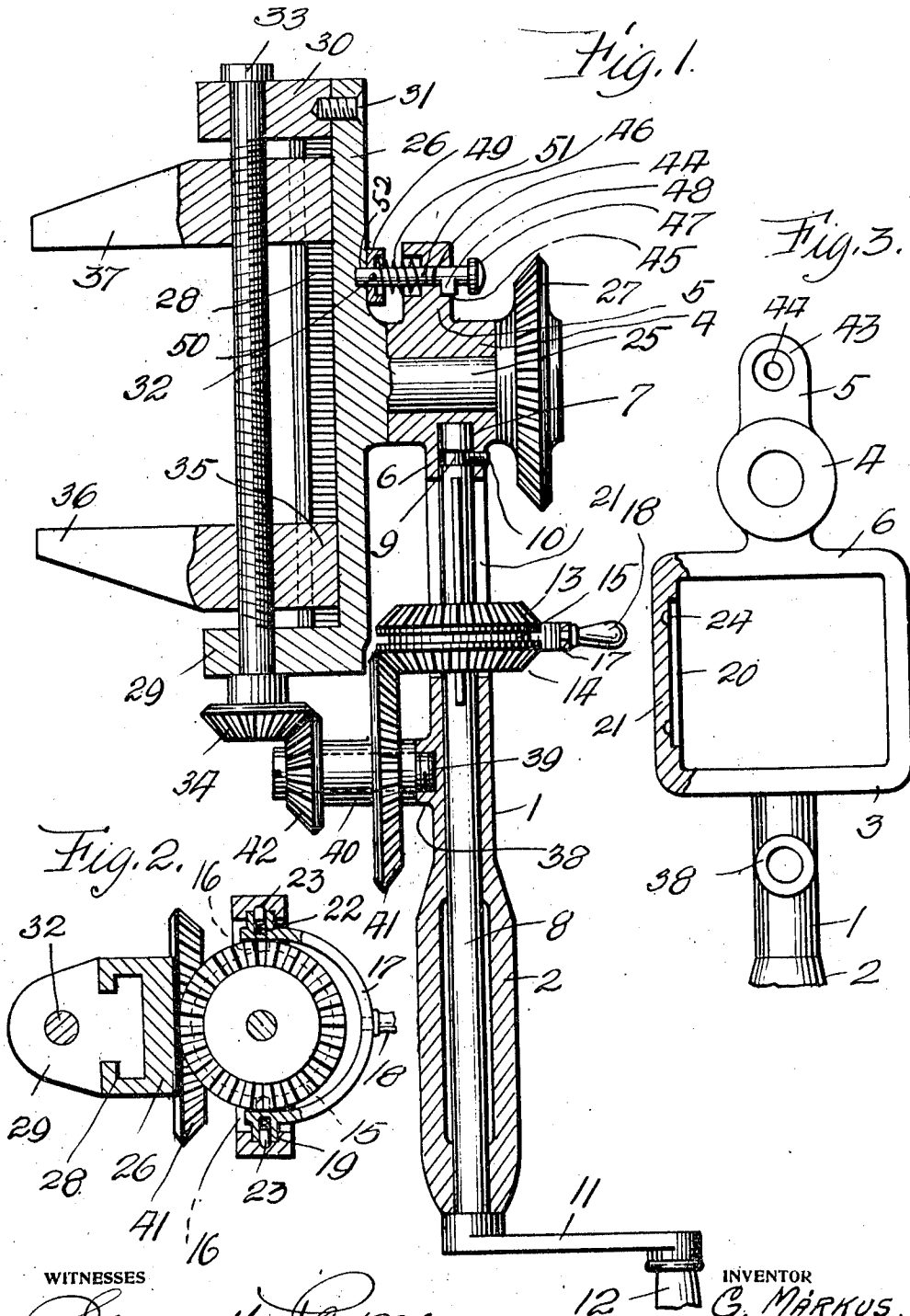


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1,035,886.

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WITNESSES

WITNESSES
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UNITED STATES PATENT OFFICE.

GERGELY MÁRKUS, OF ELLWOOD CITY, PENNSYLVANIA.

WRENCH.

1,035,886.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GERGELY MÁRKUS, a subject of the King of Hungary, residing at Ellwood City, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to wrenches, and my invention aims to provide a wrench with a revoluble head supporting adjustable jaws that can be easily and quickly placed in engagement with the facets of a nut and then the head of the wrench revolved to turn a nut upon a bolt.

The invention further aims to provide a wrench the jaws of which can be inserted in an opening or socket containing a nut for rotating the nut, the wrench being used in places inaccessible to an ordinary wrench.

The invention still further aims to accomplish the above results by a combination of mechanical elements that will be hereinafter specifically described and then claimed.

Reference will now be had to the drawing wherein:—Figure 1 is a vertical sectional view of the wrench, Fig. 2 is a horizontal sectional view of the same, and Fig. 3 is a front elevation of a portion of the handle of the wrench.

A wrench in accordance with this invention comprises a tubular handle 1 having the inner end thereof enlarged, as at 2 to provide a hand grip. The outer end of the handle 1 is provided with a rectangular frame 3 and a bearing 4, said bearing having an extension 5. The wall 6 of the frame 3 has a socket 7 and extending into said socket is the outer end of a rotatable shaft 8 which is loosely mounted in the tubular handle 1. The outer end of the shaft 8 has an annular groove 9 into which extends a screw 10, carried by the frame 3 to prevent the shaft 8 from becoming accidentally displaced. The inner end of the shaft 8 has a crank 11 provided with a handle 12, whereby said shaft can be rotated within the tubular handle.

Slidably mounted upon the shaft 8 and rotated thereby is a double beveled gear comprising beveled gear wheels 13 and 14 which are arranged in spaced relation with respect to each other so as to provide therebetween an annular groove 15. Extending

into the groove 15 are inwardly projecting and oppositely disposed pins 16 carried by a yoke 17. The yoke 17 is provided with a handle 18 and with outwardly projecting guide members 19 that are slidably mounted in grooves 20 provided therefor in the vertical walls 21 of the frame 3. The guide members 19 are provided with sockets 22 and located within said sockets are spring pressed pins 23. These pins are adapted to engage in notches 24 provided therefor in the walls of the groove 20, adjacent to the ends thereof. The pins 23 are adapted to lock the double beveled gear wheel either at the inner of the frame 3 or at the outer thereof, said beveled gear wheel being shifted through the medium of the yoke 17.

Journalled in the bearing 4 is the stub shaft 25 of a rotatable head 26. The stub shaft 25 is provided with a beveled gear wheel 27 and this beveled gear wheel is adapted to mesh with the beveled gear 13, when the latter is at the outer position within the frame 3. The head 26 has a longitudinal groove 28 T-shaped in cross section, and at one end of said head there is a fixed arm 29 and at the opposite end a detachable arm 30, said detachable arm being held in engagement with the head by a screw 31 or other fastening means. Rotatably mounted in the arms 29 and 30 is a right and left hand screw threaded rod or screw 32, the outer end of said screw having a head 33 engaging the detachable arm 30 the inner end of said screw having a small beveled gear wheel 34. Slidably mounted in the groove 28 of the head 26 are the tongues 35 of adjustable jaws 36 and 37, said jaws being moved to and from one another by rotating the screw 32. The front side of the handle 1 is provided with a boss 38 and mounted in said boss is a pin 39. Rotatably mounted upon the pin 39 is the hub 40 of beveled gear wheels 41 and 42, the latter meshing with the beveled gear wheel 34. The beveled gear wheel 41 is adapted to mesh with the beveled gear wheel 14, when the latter is at the inner end of the frame 3.

The front side of the extension 5 is provided with a socket 43, said extension having an opening 44 in communication with said socket, and the rear side of said extension has a notch 45 adjacent to the opening 44. Arranged within the opening 44 is a locking pin 46, said pin having the end

thereof provided with a head or knob 47, whereby said pin can be shifted within the extension 5. The end of the pin has a lug 48 adapted to engage in the notch 45. Adjacent to the opposite end of the locking pin 46 is a socket member 49 that is retained upon the pin 46 by a transverse pin 50. Encircling the pin 46, between the socket member 49 and the extension 5, is a coiled spring 51. The end of the pin 46 is adapted to engage in a recess 52 provided therefor in the rear side of the head 26, said pin locking the head 26 whereby it cannot revolve. To release the head 26, it is only necessary to pull outward upon the pin 46 and slightly rotate the same, whereby the lug 45 will engage the rear side of the extension 5 and hold the pin 46 in its adjusted position.

20 With the wrench in the position shown in Fig. 1 of the drawing, the handle 12 can be rotated to impart a rotary movement to the shaft 8, the double beveled gear, the gear wheels 41 and 42, the gear wheels 34 and 25 the screw 32 to adjust the jaws 36 and 37. After the jaws have been moved into engagement with the facets of a nut, the locking pin 46 is withdrawn from the recess 52 and then the double beveled gear is shifted to the outer end of the frame 3, whereby the beveled gear wheel 13 will mesh with the beveled gear wheel 27, the beveled gear wheel 13 being retained in the outer end of the frame 3 by the spring pressed pins 23 engaging in the outer notches 24. When the handle 12 is rotated and a rotary movement imparted to the shaft 8, the shaft 25 is rotated thereby rotating the head 26. As the jaws 36 and 37 are carried by the head, the nut will be screwed or unscrewed upon the bolt. In order that the jaws 36 and 37 can be adjusted, it is necessary that the locking pin 46 holds the head 26 and that the beveled gear wheel 44 be in engagement or mesh with the beveled gear wheel 41.

It is thought that the operation and utility of the wrench will be apparent without further description, and while in the drawing there is illustrated a preferred embodiment of the invention, it is to be understood that the structural elements thereof are susceptible to such changes as fall within the scope of the appended claims.

What I claim is:—

1. A wrench embodying a handle, a head, and jaws, said handle having provision for simultaneously adjusting said jaws, and means for rotating said head.

2. A wrench embodying a handle, a rotatable head carried thereby, jaws adjustably mounted in said head and adapted to rotate therewith, means supported by said head for moving said jaws to and from one another, means carried by said handle for operating the last mentioned means, and

means carried by said handle for rotating said head.

3. A wrench comprising a tubular handle, a head rotatably supported by said handle, adjustable jaws arranged in said head, and means operable within said handle for adjusting said jaws and rotating said head.

4. A wrench comprising a tubular handle, a head rotatably supported by said handle, adjustable jaws arranged in said head, means operable within said handle for adjusting said jaws and rotating said head, and means carried by said handle for locking said head during an adjustment of said jaws.

5. A wrench of the type described embodying a handle, a frame carried by the outer end thereof, a head rotatably supported by the outer end of said handle, adjustable jaws arranged in said head, means supported by said head for adjusting said jaws, means operable in said frame for actuating the last mentioned means, and means in connection with said head whereby a rotary movement can be imparted thereto by the means located within said frame.

6. A wrench of the type described embodying a handle, a frame carried by the outer end thereof, a head rotatably supported by the outer end of said handle, adjustable jaws arranged in said head, means supported by said head for adjusting said jaws, means operable in said frame for actuating the last mentioned means, means in connection with said head whereby a rotary movement will be imparted thereto by the means located within said frame, and means carried by the outer end of said handle for locking said head during an adjustment of said jaws.

7. A wrench of the type described comprising a handle, a rotatable shaft carried thereby, a rotatable head supported by the outer end of said handle and operated through the medium of said shaft, adjustable jaws arranged in said head and adapted to be adjusted through the medium of said shaft, and means carried by the outer end of said handle for locking said head during an adjustment of said jaws.

8. A wrench of the type described comprising a tubular handle, a rotatable shaft journaled in said handle, a rotatable head supported by the outer end of said handle, jaws adjustably mounted in said head, a double beveled gear slidably mounted upon said shaft and adapted to rotate therewith, gear wheels actuated by said double beveled gear for adjusting said jaws, and means actuated by said double beveled gear for rotating said head.

9. A wrench of the type described comprising a tubular handle, a rotatable shaft journaled in said handle, a rotatable head

supported by the outer end of said handle, jaws adjustably mounted in said head, a double beveled gear slidably mounted upon said shaft and adapted to rotate therewith, 5 gear wheels actuated by said double beveled gear for adjusting said jaws, means actuated by said double beveled gear for rotating said head, and a locking pin carried by the outer end of said handle for locking 10 said head during an adjustment of said jaws.

10. A wrench of the type described comprising a tubular handle, a rotatable shaft journaled in said handle, a rotatable head 15 supported by the outer end of said handle, jaws adjustably mounted in said head, a double beveled gear slidably mounted upon

said shaft and adapted to rotate therewith, gear wheels actuated by said double beveled gear for adjusting said jaws, means actuated by said double beveled gear for rotating 20 said head, a locking pin carried by the outer end of said handle for locking said head during an adjustment of said jaws, and means in connection with said handle 25 whereby said double beveled gear can be shifted and locked in a shifted position.

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

GERGELY MÁRKUS.

Witnesses:

ROY HAZEN,
MÁRKUS ILLSI.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."