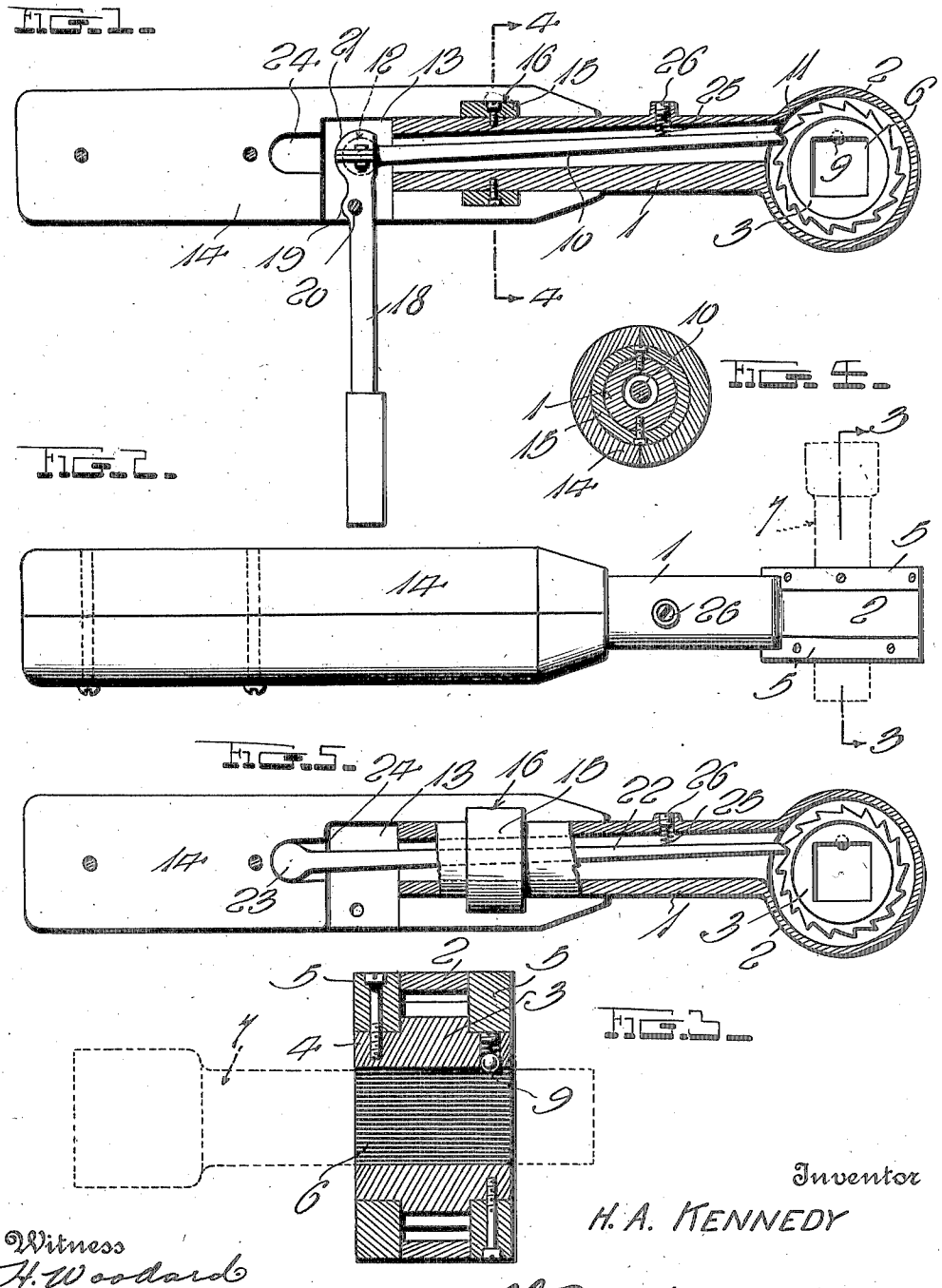
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H. A. KENNEDY

COMBINED RATCHET WRENCH AND TOOL HOLDER

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Witness
H. Woodard

Inventor
H. A. KENNEDY

By H. B. Williamson & Co.
Attorneys

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HOWARD A. KENNEDY, OF LATONIA, KENTUCKY.

COMBINED RATCHET WRENCH AND TOOL HOLDER.

Application filed May 11, 1922. Serial No. 560,128.

To all whom it may concern:

Be it known that I, HOWARD A. KENNEDY, a citizen of the United States, residing at Latonia, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in a Combined Ratchet Wrench and Tool Holder; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved tool or device which may be conveniently termed a combined ratchet wrench and tool holder, the same being preferably, but not necessarily, designed as a holder for socket wrenches, but being capable of holding other objects or directly acting on a nut.

The principal object of the invention is to provide a device of this class which is a decided improvement upon prior patented and marketed ones, the same being comparatively simple, easy to manipulate, convenient to handle, capable of many uses, and such in construction that it is comparatively inexpensive to both the manufacturer and the user.

A very important object of the invention is to devise a device of this class which includes a rotary ratchet member designed to be engaged with a tool, nut or the like, together with a pawl for acting on the ratchet, and novel hand-operated actuating means for the pawl, this means being capable of arrangement in various positions to dispose it at different angles with respect to the ratchet, whereby to permit very effective use of the device in places difficult of access with the ordinary types of wrenches.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a longitudinal section, with parts in elevation, of a device constructed in accordance with this invention.

Figure 2 is a side elevational view thereof.

Figure 3 is an enlarged detail section taken on the line 3—3 of Figure 2.

Figure 4 is cross-section taken on the line 4—4 of Figure 1.

Figure 5 is a top plan view, with parts broken away and shown in sections, of a slightly modified form of the invention.

Specifically described, the numeral 1 designates a tubular body having a ring-like head 2 at its outer end in which a ratchet wheel 3 is rotatably mounted. As seen in Figure 3, this ratchet member is provided with reduced portions 4 which are surrounded by rings 5 bolted or otherwise secured thereto to permit ready detachment. These rings 5 serve to rotatably connect the ratchet member with the aforesaid head 2. This ratchet member 3 is formed with a centrally disposed non-circular opening 6 for reception of the object to be rotated. In most instances, the object will be a socket-wrench 7, the shank of which will be extended into the opening. For the purpose of insuring against accidental displacement of the socket member 7 when it is in use, a small depression is formed in its shank and a spring pressed ball 9, which is carried by the ratchet member 3, is designed to be projected into this depression to hold the socket member against accidental slippage. For the purpose of imparting rotation to the ratchet member 3, a rod 10 is employed, this being longitudinally reciprocable in the body 1. One end of the rod 10 is bevelled as at 11 to insure effective engagement thereof with the teeth of the ratchet member. On its opposite end, this rod 10 is formed with a ball 12 which serves the purpose to be hereinafter described. It is to be noted that the last named end of the rod 10 extends beyond the adjacent end of the body 1. This end of the body is received in the socket 13 formed in a cylindrical two-part hand-grip 14 which is rotatable on the body. To permit this relative rotation and to connect the hand-grip with the body, the latter is provided with an annular shoulder or ring 15 which is received in the enlarged intermediate portion 16 of the aforesaid socket 13 thus permitting relative rotation of the hand-grip and body but preventing relative longitudinal sliding. It may be conveniently stated here that although I have shown means specifically described for the connecting the parts together in this manner, I wish it to be understood that the description is not controlling as slight variances in construction may be resorted to. As clearly shown in Figure 1, the inner end of the body 1 terminates short of the adjacent end of the socket 13 and it is

in this space that the extended part of the rod 10, which functions as the pawl, is accommodated. This space also serves to accommodate the inner end of an operating lever 18 which extends into it through a lateral opening 19 communicating with the socket. This lever 18 is pivoted in this opening 19 as shown at 20, and it is equipped on its inner end with a sectional hemi-sphere which co-acts with the aforesaid ball 12 to provide a ball and socket joint between the operating lever and pawl or rod 10.

So far as the description has gone, it has set forth a complete device which may be effectively used for socket wrenches for removing and applying nuts and the like. It is not always desirable to use the device in this exact manner, and in some instances the operative lever 18 may be dispensed with and the rod 10 removed and replaced by a like rod 22, (see Figure 5), which is sufficiently long to permit the ball 23 on its inner end to fulcrum in the counterbored socket 24. Hence, it is obvious that when the device is so arranged, it will function as an ordinary ratchet wrench. In both forms of the invention, small coiled springs 25 are employed to bear against the pawls to maintain them in engagement with the ratchet members, and set-screws 26 are provided for adjusting the tension of these springs.

The operation of the device disclosed in Figures 1 to 4 inclusive is as follows: The shank of the socket-wrench 7 is inserted into the central opening 6 in the ratchet member 3 in a manner so that the spring pressed ball 9 is permitted to seat in the depression formed in the shank of the socket-member. The socket member is now engaged with the nut or bolt to be moved in the usual way and the lever 18 is grasped in one hand and the hand-grip 14 is held in the other hand. Now, the lever 18 is moved back and forth on its pivot in a manner to impart longitudinal reciprocating movement to the rod 10. It is obvious that such movement serves to impart rotation to the ratchet member and in turn to the socket-member held thereby. If, when the lever is disposed substantially in the same plane with the ratchet member, it interfers with the effective operation of the device, the hand-grip 14 is simply rotated on the body 1 until the lever, which it carries, assumes a position which will permit it to be operated free of obstruction. The relative rotation of the body and hand-grip, and universal connection of the lever and operating pawl permits this.

As before indicated, if it is desirable to simply use the device in the manner of an ordinary ratchet wrench, the operating lever is removed and the short rod 10 is replaced with the long one 22 which has the ball on its inner end seated in the small socket or recess 24 in the hand-grip. The ratchet member is, when the device is used as a wrench, directly engaged with the nut or object being removed or replaced. It is of course obvious that when the device is thus used, the ratchet member must be removed and replaced from time to time to accommodate the different sizes and shapes of nuts.

By carefully considering the description in connection with the drawings, persons familiar with the devices of this class will doubtless be able to obtain a clear understanding of the invention. Therefore, a more lengthy and detailed description is deemed unnecessary.

Since probably the best results may be obtained with the construction and arrangement herein shown and described, this is taken as the preferred embodiment of the invention. However, I wish it to be understood that minor changes coming within the scope of the invention as claimed may be resorted to if desired.

I claim:

1. A device of the class described embodying a body provided with a rotary gripping device, a longitudinally reciprocable part cooperative with the device for rotating it, and an operating lever for said part, said lever being connected thereto through the medium of a universal joint, whereby to permit the lever to be disposed in a horizontal plane with the gripping device, or at various angles with respect thereto.

2. A tool of the class described comprising a tubular body having a ratchet at its outer end, a rod reciprocable in said body, said rod being engaged with the ratchet, a hand-grip rotatably connected with said body, and an operating lever pivotally mounted on the hand-grip and pivotally connected with said rod.

3. A device of the class described comprising a tubular body provided at its outer end with a ring-like head, a rotary ratchet-wheel ascociated with said head, a rod mounted for reciprocation in said body, being engageable at its outer end with the teeth of said wheel, the opposite end of the rod extending beyond the inner end of the body, a laterally disposed operating lever for reciprocating said rod, and ball and socket connection between the lever and rod.

4. A device of the class described comprising a handle having a socket in one end, a tubular body extending rotatably into said socket, a ratchet carried by said body and designed for engagement with an object to be rotated, a rod mounted for reciprocation in said body, said rod being cooperable with the teeth of said ratchet, and an operating lever pivotally mounted on the handle and having a ball and socket connection with said rod.

5. A device of the class described including a tubular body carrying a ratchet for

engaging the object to be rotated, a socket disposed at a point spaced from the inner end of the body, a rod mounted for movement in said body and engaging the ratchet teeth at its outer end, the opposite end of the rod extending beyond the adjacent end of the body and being equipped with a ball to extend into said socket.

6. The structure set forth in claim 5, wherein said socket is carried by a pivoted operating lever.

7. The structure set forth in claim 5, wherein the socket is formed in a part which is relatively movable with respect to said ball.

8. A device of the class described comprising a tubular body, ratchet means at the outer end of said body for engaging the object to be rotated, a rod mounted for reciprocation in said body and engaging the ratchet at its outer end, the opposite end of the rod extending beyond the adjacent end of said body and being provided with a ball, a hand-grip formed in one end with a socket into which the inner end of said body is extended, said body terminating short of the bottom of the socket to provide a space for accommodating the aforesaid ball, means connecting said body and hand-grip together to permit relative rotation but to prevent relative longitudinal movement, and a pivoted operating lever carried by said hand-grip and having its inner end extending into the aforesaid space and provided with a socket cooperating with said ball to provide a universal joint between said rod and lever.

In testimony whereof I have hereunto set my hand.

HOWARD A. KENNEDY.