

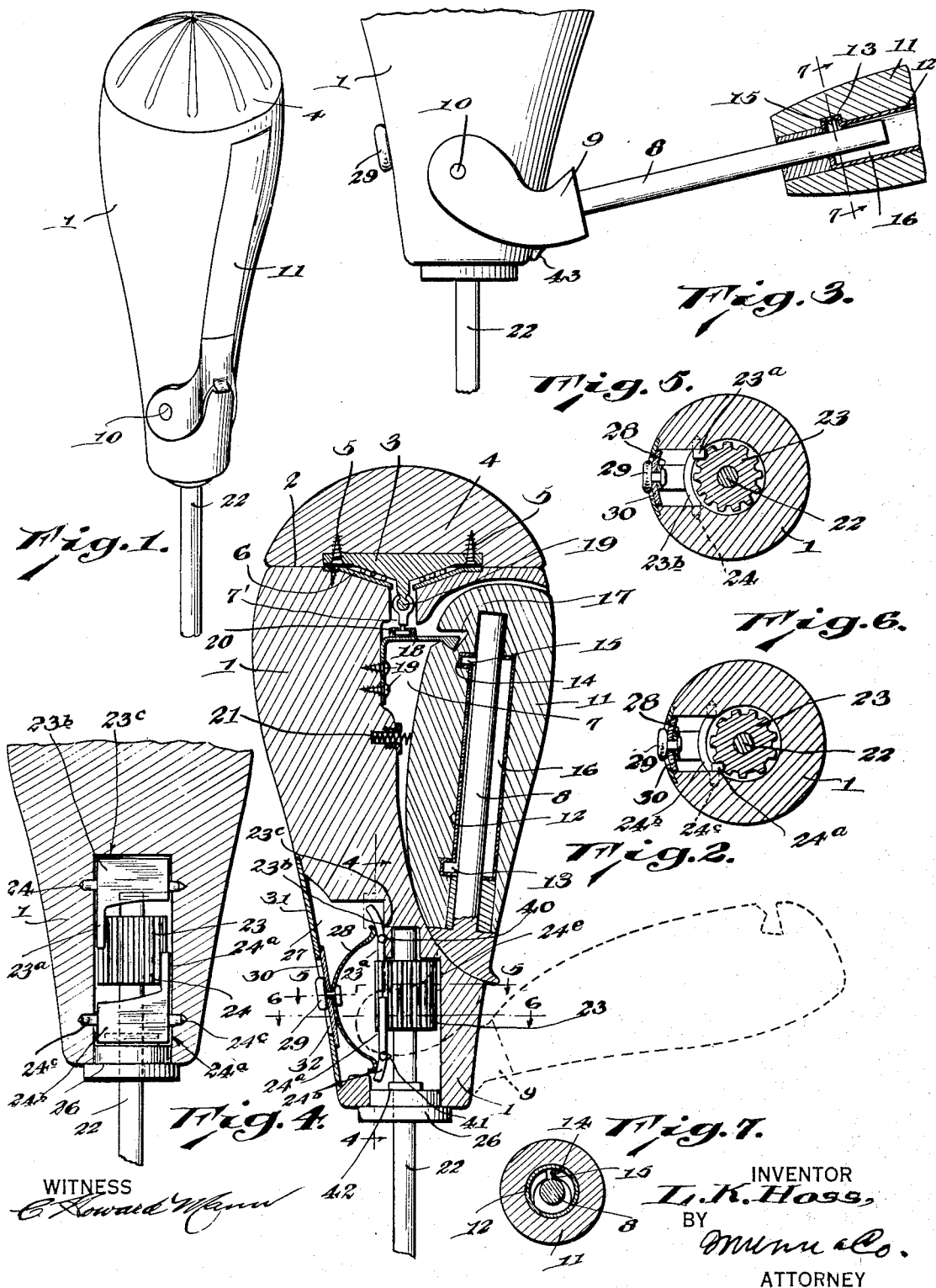
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TOOL HANDLE

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TOOL HANDLE

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My invention relates to improvements in handles for tools, more particularly screw driver handles and the like, and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of my invention is to provide a handle by means of which greater pressure and leverage may be obtained than with the ordinary handle.

A further object is to provide a handle of the type in which a lever arm is provided which may be swung into a position substantially at right angles to the longitudinal axis of the tool, and which may be used by one hand to turn the device while pressure is exerted by the other hand.

A further object of the invention is to provide a device of the type described in which the lever member of the handle may be housed in the body portion of the handle when not in use and may be instantly brought into operative position.

A further object of the invention is to provide a lever arm for a tool of the type described which may be extended to increase the leverage or may be retracted to permit the swinging of the lever arm into its housing.

A further object of the invention is to provide a novel form of ratchet movement for the tool.

Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings forming part of this application, in which:

Figure 1 is a perspective view of the handle.

Figure 2 is an enlarged longitudinal sectional view through the handle.

Figure 3 is a view of a portion of the device showing the lever arm in section.

Figure 4 is a sectional view along the line 4—4 of Figure 2.

Figure 5 is a sectional view on the line 5—5 of Figure 2.

Figure 6 is a sectional view on the line 6—6 of Figure 2, and,

Figure 7 is a section on the line 7—7 of Fig. 3.

In carrying out my invention I provide a body portion 1 which may be of wood or any other suitable material. This body portion has a substantially flat top surface 2, which is recessed to receive a bearing such as that shown in Figure 2. This bearing consists of a member 3 which is counter-sunk in a cap 4, and which is secured to it by screws 5. A companion member which may be a conical shaped metal plate 6 is provided and is secured to the body portion and between these members are anti-friction balls. The plate 6 is provided with a central opening.

The body portion 1 is provided with a recess 7 to receive a lever arm hereinafter described. The recess 7 has an extension 7' for a purpose explained hereafter. The lever arm consists of a shank 8 which is secured to a fork 9, the arms of the fork straddling the lower part of the body portion 1, and being pivotally secured thereto at 10. Slidably disposed on the shank 8 is a gripping portion 11. This gripping portion has a central longitudinal bore arranged to receive a cylindrical sleeve 12 of metal or other suitable material, and this sleeve is provided with portions arranged to form grooves 13 and 14 extending at right angles to the longitudinal axis of the sleeve. These grooves are arranged to receive a pin 15 on the shank 8 and a connecting groove 16 extending between the grooves 13 and 14 is also provided.

The gripping portion 11 is provided with a recess 17 adapted to receive the end of a spring latch member 18. The latter is secured at 19 to the wall of the recess 7. The bearing member 3 has an extension to a universal joint 19, which is disposed in the bore 7' and which is provided with a headed pin arranged to slip between the opposed arms of lugs 20 carried by the spring latch member 18.

The gripping member 11 is shaped to conform to the inner walls of the recess 7 and the outer contour of the body portion 1, so that when the lever arm is in its closed position, as shown in Fig. 2, the handle will present the appearance shown in Fig. 1. A

spring 21 bears against the inner portion of the gripping member 11 when it is in the housing.

A ratchet mechanism is provided for aiding in operating the device. Secured to the shank 22 of the tool which may be a screw driver, a bit, a twist drill, or any other similar device, is a ratchet wheel unit consisting of a wheel 23. This wheel and the shank are located in a recess 24, a bushing 26 being provided at the end of the body portion 1. In this instance the ratchet wheel unit forms an integral enlargement of the upper end of the shank 22.

Disposed in a recess 27 is a dog 23a provided for the wheel 23 and having a portion 23b arranged to pivot at 24 in a recess 23c in the body. A similar dog 24a is provided also for the wheel 23, and it has a body portion 24b which is pivoted at 24c. An arc-shaped spring 28 is held by a button 29 on a slidable plate 30, which is in slidable contact with a plate 31 forming a closure for the recess 27. A slot 32 is provided so that the button may be shifted to shift the bowed spring 28. Said spring retains the plate 30 in engagement with the plate 31. The dog 23a has a fulcrum 40 in line with the pivots 24 and adjacent the curved body portion 23b. The dog 24a also has a similar fulcrum 41 which is adjacent the curved body portion 24b. The bushing 26 has a collar adapted to be engaged by the outer end of the dog 24a for limiting the inner movement of the dog.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. The cap 4 is held in position on the end of the handle by the attachment of the universal joint 19 with the latch 18. In order to release the lever arm, the cap is grasped with the fingers and pulled so as to raise the spring latch 18 whereupon the spring 21 throws the arm outwardly. The gripping portion 11 is rotated on the shank 8 until the pin 15 registers with the groove 16 when the gripping portion may be moved outwardly of the shank into the position shown in Fig. 3.

The ratchet mechanism is in the neutral position shown in Fig. 2. If the button 29 is moved upwardly in this figure one end of the bowed spring 28 will move past the pivotal portion into engagement with the outwardly curved body portion 23b thus rocking the dog and forcing the dog 23a out of engagement with the wheel 23, while the opposite end of the bowed spring will tend to force the dog 24a into engagement with said wheel. The turning of the handle will then operate the tool through the medium of the wheel 23. The reverse movement of the button will throw out the ratchet or dog 24a and throw in the ratchet or dog 23a. Pressure may be exerted on the cap 4 which will turn in the palm of the hand due to the provision of the

ball bearing arrangement and the universal joint. The gripping member 11 may be brought into position for folding into the housing by turning it to bring the pin in registration with the groove 16, and then moving the gripping member until the pin is in registration with the groove 14 when it can be turned to lock the gripping member in this position. When the gripping member is swung on its pivot it will be held by the spring latch 18.

I claim:

1. A tool handle comprising a body portion having a recess and a lever arm pivoted to said body portion and arranged to enter said recess, a latch for holding the arm in the recess, and a cap movable with respect to the body portion for releasing the latch and permitting the arm to swing on its pivots.

2. A tool handle comprising a body portion having a substantially flat end and being provided with a recess, a lever arm pivoted on said body portion and movable into and out of said recess, a latch disposed within the recess for holding said lever arm therein, a cap rotatably disposed on the flattened surface of the body portion, and means carried by the cap and being connected with the latch for releasing the latter.

3. A tool handle comprising a body portion having a flat end, a cap having a flat surface abutting the flat surface of the body portion, said body portion having a recess, a lever arm pivotally mounted on said body portion and movable into and out of said recess, a spring actuated latch disposed within the recess, anti-friction means disposed between the cap and body portion for permitting the cap to rotate on the body portion, and connections between the cap and the latch for actuating the latch to release the latter, said connection including a swivel joint whereby the cap may rotate with respect to the body portion.

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