E. DIETRICH.

SOCKET WRENCH.

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1,398,180.

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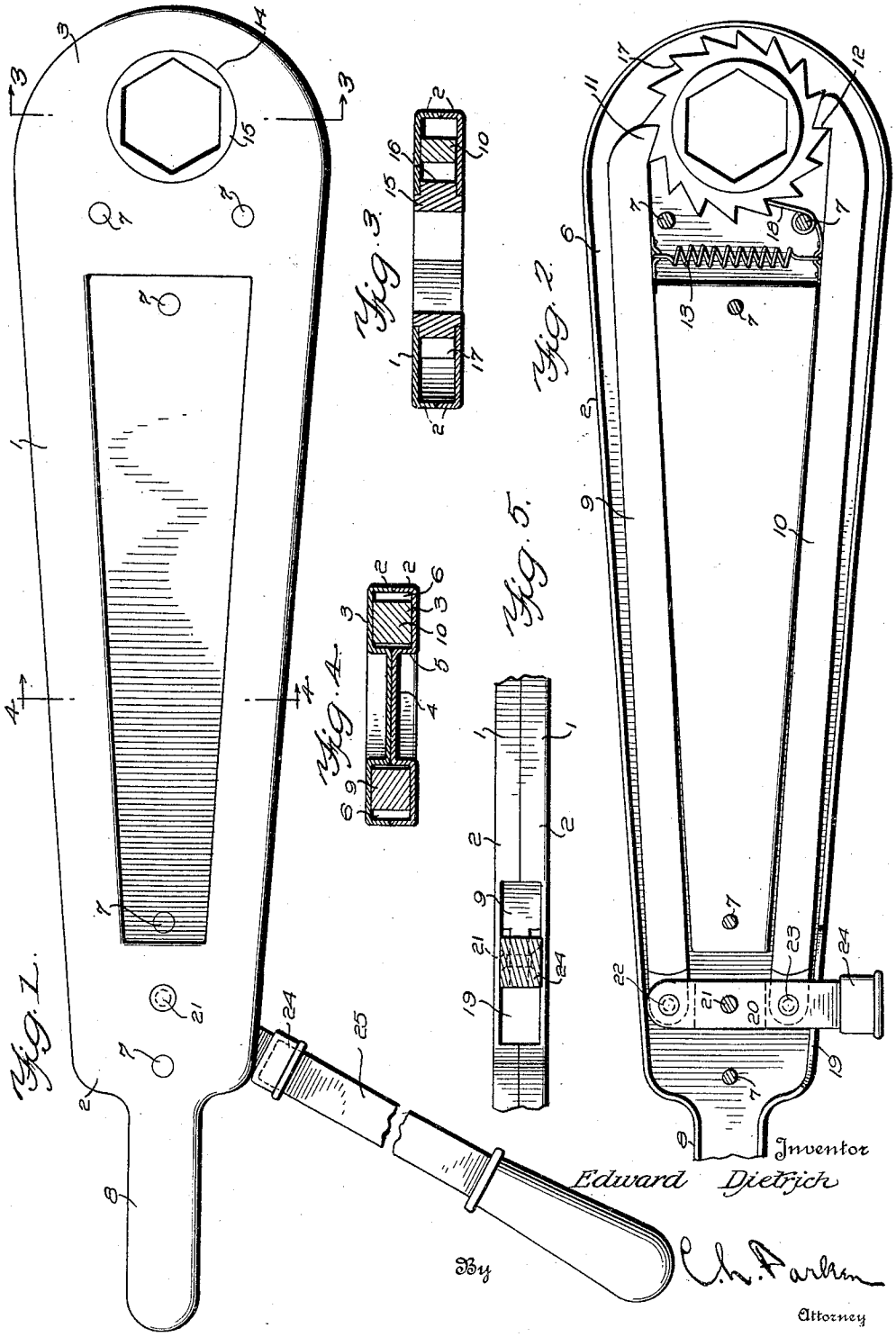


Fig. 1.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 2.

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SOCKET-WRENCH.

1,398,180. Specification of Letters Patent. Patented Nov. 22, 1921.

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To all whom it may concern:

Be it known that I, EDWARD DIETRICH, a citizen of the United States, residing at Henryville, in the county of Clark and State of Indiana, have invented certain new and useful Improvements in Socket-Wrenches, of which the following is a specification.

This invention relates to socket wrenches, and it comprises a casing, a pair of pawls mounted therein, a socket mounted to revolve in said casing, said socket being provided with ratchet teeth, adapted to be engaged by said pawls, an operating handle pivotally mounted in the casing and projecting therefrom.

In the present invention, I have provided a wrench particularly adapted for use on motor vehicles and in other work where the clearance space is restricted and the user of the wrench is likely to become injured when employing an ordinary wrench if the wrench slips.

In the present construction, a socket member is provided which is adapted to receive the nut or the head of the bolt, and this member is revolved through the medium of a pair of pawls or dogs engaging ratchet teeth formed on the periphery of the socket member. One of the dogs is arranged to pull on the ratchet teeth and the other to push, the dogs being operated by a pivoted operating handle or lever which extends outwardly from the casing and may be operated at considerable distance away where sufficient clearance can be obtained.

The casing comprises a pair of sections adapted to be secured to each other, having peripheral flanges engaging each other. A portion of the face of each section of the casing is depressed, forming guides between the depressed portion and the outer flange for the reception of the dogs.

In the accompanying drawings, I have shown one embodiment of the invention. In this showing:

Figure 1 is a plan view of the wrench assembled,

Fig. 2 is a similar view showing one section of the casing removed,

Fig. 3 is a transverse vertical sectional view on line 3—3 of Fig. 1,

Fig. 4 is a similar view on line 4—4 of Fig. 1, and,

Fig. 5 is a side elevation of a portion of the casing showing the position of the operating member.

Referring to the drawings, the reference numeral 1 designates the casing as a whole. As shown, it is formed of two similar sections, being split longitudinally of the wrench. Each of the sections is provided with a peripheral flange 2, whereby the faces 3 are slightly spaced from each other. The center portion of each section of the casing is depressed, as at 4, in a plane substantially parallel with the outer edges of the peripheral flanges. The side walls 5 of the depression coact with the flanges 2 to form guideways 6. The sections of the casing may be secured to each other by any suitable fastening means as by bolts or rivets 7. One end of the casing is reduced, as at 8, to form a handle or grip.

A pair of dogs 9 and 10 are arranged in the guideways 6, one of the dogs being provided with a tooth 11 adapted to exert a pressure when the dog is moved toward the head of the wrench, and the other dog is provided with a tooth 12 adapted to exert a pressure when the dog is moved in the opposite direction. The dogs are connected by a coil spring 13, normally tending to draw them toward each other.

The head of the wrench is provided with a pair of openings 14, arranged in the faces 3 of the casing and in alinement with each other. A socket member 15 is adapted to be arranged in this opening, the socket member being provided with a hub 16, adapted to be received between the faces of the casing to retain it in position to form a bearing therefor. As shown, this head is provided with ratchet teeth 17, adapted to be engaged by the teeth 11 and 12 of the pawls. A spring catch 18 is mounted on one of the bolts or rivets 7 and is adapted to engage one of the ratchet teeth to prevent the socket from turning in a reverse direction. Adjacent the opposite end of the casing, the

flanges 2 are provided with alined openings forming a slot 19. An operating lever 20 extends through this opening and is mounted on a pivot pin 21, extending through the walls of the casing. The dogs 9 and 10 are secured to the operating lever by suitable means, as at 22 and 23. The outer end of the operating lever is provided with a socket 24 for the reception of a handle 25 which may be made of any suitable length.

In operation, the operating lever 24 is oscillated by the handle, to reciprocate the dogs 9 and 10 in the guideways 6. The dog 9, when moving forwardly, engages the ratchet 17 to turn the socket 15, and the dog 10, when moving in the opposite direction, causes the socket to revolve. The spring 13 maintains the dogs in engagement with the socket at all times, and the socket is prevented from revolving in a reverse direction by means of the spring catch 18. The length of the slot 19 is best made sufficient to cause the dog to revolve the socket a distance equal to one of the ratchet teeth upon each oscillation of the lever 24. It will be apparent that the operating handle 25 may be made any suitable length and the operator may use the wrench in places where very little clearance is afforded, as when working on motor vehicles and operate the wrench from a place where sufficient clearance is provided, by means of the handle 25. By providing the socket 24 in the end of the operating lever, the handle 25 may be removed when the wrench is not in use to facilitate transportation.

It is to be understood that the form of the invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A socket wrench comprising an outer casing, said casing being formed of two sections provided with peripheral flanges engaging each other to space the sides of the casing from each other, said casing being provided with a centrally depressed portion forming a pair of guideways, a dog arranged in each of said guideways, a socket mounted to revolve in the casing, said socket being provided with ratchet teeth adapted to be engaged by said dogs, and an operating lever pivotally mounted in said casing and connected to said dogs.

2. A socket wrench comprising an outer casing, said outer casing comprising a pair of plates having peripheral flanges forming the sides of the casing and maintaining the faces spaced from each other, the faces of the casing being provided with centrally disposed depressed portions forming a guideway at each side of the casing, a dog mounted to reciprocate in each of said guideways, a socket mounted to revolve in said casing, said socket being provided with ratchet teeth adapted to be engaged by said dogs, an operating handle pivotally mounted in said casing adjacent the opposite ends of said dogs, and means for connecting said dogs to said handle, said casing being provided with a slot in one side through which the operating handle projects.

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

EDWARD DIETRICH.

Witnesses:

JAMES CAMPBELL,

HARRY HARSNORD.