April 6, 1926. 1,579,818

H. C. KENNEDY

COMBINATION TOOL

Filed Sept. 19, 1924

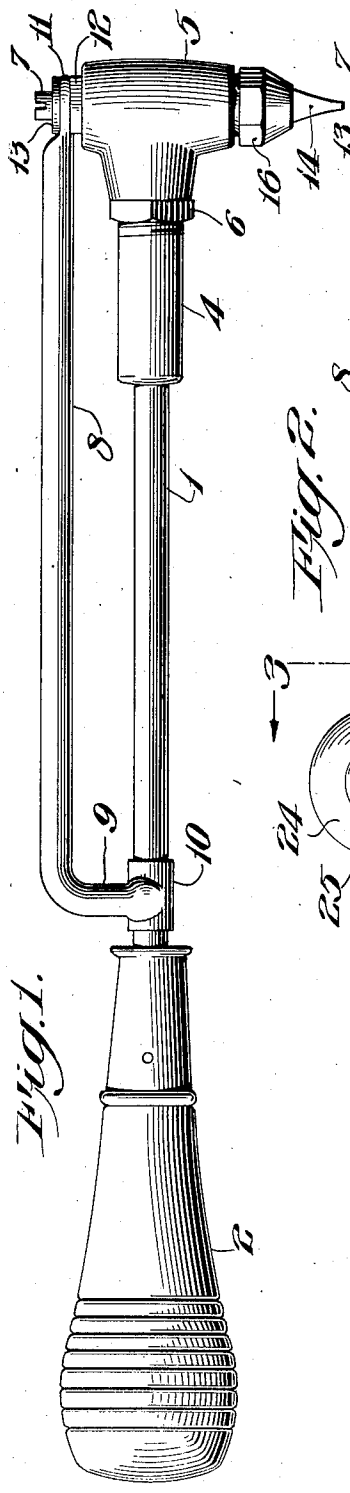

Fig. 1.

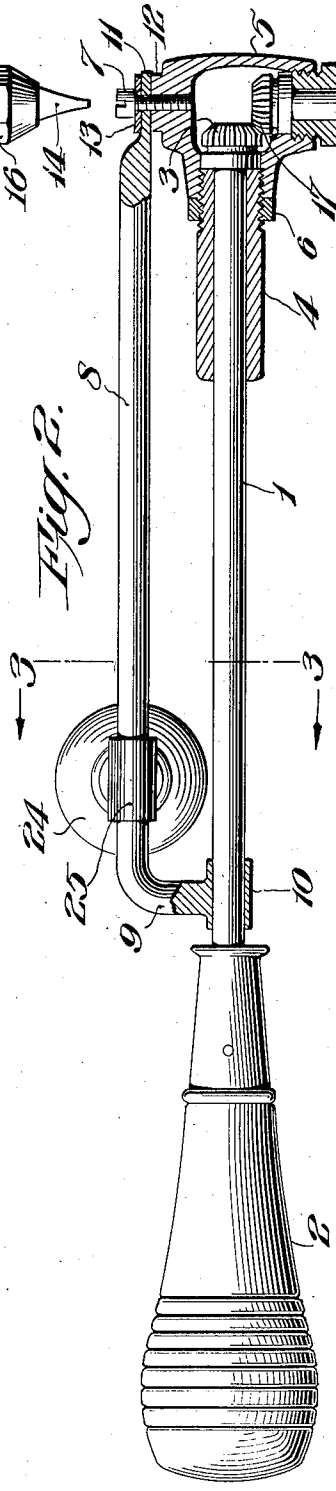

Fig. 2.

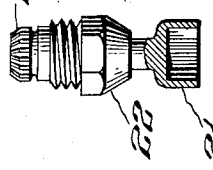

Fig. 5.

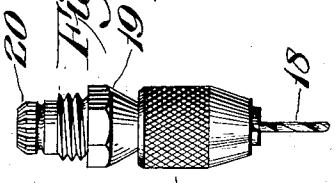

Fig. 4.

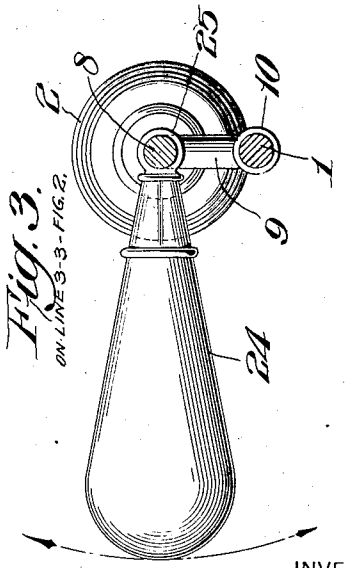

Fig. 3. ON LINE 3-3-FIG. 2.

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UNITED STATES PATENT OFFICE.

HENRIQUE C. KENNEDY, OF PHILADELPHIA, PENNSYLVANIA.

COMBINATION TOOL.

Application filed September 19, 1924. Serial No. 738,584.

To all whom it may concern:

Be it known that I, HENRIQUE C. KENNEDY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Combination Tool, of which the following is a specification.

This invention, generally stated, relates to a mechanic's implement or tool and has more especial relation to a tool which may be interchangeably used as a screw driver, wrench or drill.

The leading object of the present invention may be said to reside in a device of the character stated in which the driving element may be efficiently steadied or supported during operation by a simple and inexpensive construction of parts.

Other and further objects reside in the provision of general details of construction and arrangement and combination of parts for attaining the results sought by the leading object.

The invention consists of the novel construction hereinafter described and finally claimed.

The nature, characteristic features and scope of the invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, and in which:

Fig. 1, is a view in side elevation of a tool or implement embodying the invention.

Fig. 2, is a similar view partly in section illustrating a slightly modified form of the invention.

Fig. 3, is a view taken upon the line 3—3 of Fig. 2.

Fig. 4, is a view in detail of a drill adapted for interchangeable connection with the parts shown in Figs. 1 and 2.

Fig. 5, is a view in elevation, partly sectioned, of a socket wrench calculated for interchangeable connection with parts shown in Figs. 1 and 2.

For the purpose of illustrating my invention I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

Referring specifically to the drawings, the reference numeral 1 designates a horizontally arranged shaft provided at one end with an operating handle 2 and provided at its opposite ends with a bevelled gear wheel 3. That end of the shaft 1 which carries the bevelled gear wheel 3 is rotatably mounted in a bearing 4 screw threaded at its outer end to cooperatively receive a casing 5, a lock nut 6 being employed to maintain said parts in fixed relation. Secured to casing 5 as by a screw 7 and paralleling shaft 1 is a brace, preferably a cylindrical rod, 8, which rod 8 terminates in a vertically disposed arm 9, preferably having formed integral therewith a bearing 10 for supporting that end of shaft 1 which is provided with a handle 2. That end of brace 8 which is secured to the casing 5 is flattened as at 11 to seat upon the flattened part 12 of casing 5 and a washer 13 is interposed between the head of screw 7 and the flattened part 11 of brace 8. As shown in Figs. 1 and 2 a screw driver 14 is shown as having detachable connection with casing 5. The screw driver 14 is rotatably mounted in a nut 16 having screw threaded relation with the casing 5 and the screw driver element has a bearing in the nut 16 and is provided with a bevelled gear 17 which meshes with the bevelled gear 3 of the shaft 1. As clearly shown in Fig. 2 the axis of the screw driver 14 is at right angles to the axis of the shaft 1.

Instead of screw driver 14 a drill 18 may be substituted, see Fig. 4. The drill 18 is rotatably mounted in a nut 19 adapted for screw threaded relation with casing 5 and the shaft upon which the drill 18 is mounted is provided with a bevelled gear 20 for meshing with the bevelled gear 3 of shaft 1. As shown in Fig. 5 a wrench member 21 is disclosed rotatable in a nut 22 for screw threaded relation with casing 5 and the shaft upon which the wrench is mounted is provided with a bevelled gear 23 for meshing with the bevelled gear 3 of shaft 1. By this arrangement of parts the device is equally applicable as a screw driver, a drill, or a wrench.

In order to facilitate the easy and efficient operation of the above described parts an auxiliary handle 24 may be employed as clearly shown in Figs. 2 and 3. This aux-

iliary handle 24 is fixed to a sleeve 25, mounted upon brace 8, for free longitudinal movement along brace 8 or capable of being moved in an arc of a circle with respect to brace 8. By this arrangement and construction of parts the operator may hold in one hand the handle 24 to steady the tool as a whole and operate the shaft 1 by means of handle 2 with his other hand. The above described tool is very useful and efficient where it is desired to work in corners or other places not easy of access, and the brace 8 is particularly efficient for steadying the shaft 1 during operation.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A portable tool, driving means, comprising a front closed casing having two bearings therein at right angles to each other, a tool journalled in one of said bearings, a driving shaft journalled in the other bearing and geared to said tool, a one-piece brace rod having its front end attached directly to said casing opposite the inclosed end of the tool and in substantially axial vertical alignment with the latter and extending parallel and comparatively close to said shaft and having a bearing at its other end for said shaft, and a handle at the rear end of said shaft for rotating it and the tool, said brace being adapted to be grasped by the user and the pressure thereon being exerted upon the tool in axial vertical alignment therewith.

2. A portable tool driving means, comprising a closed casing providing two bearings at right angles to each other, a tool journalled in one of said bearings, a driving shaft journalled in the other bearing and geared to said tool, a one-piece brace rod having its front end reduced and attached directly to said casing opposite the inclosed end of the tool and extending parallel and comparatively close to the shaft and having a bearing at its other end for said shaft, a handle at the rear end of the shaft for rotating it, and a handle on said brace extending at an angle to said first mentioned handle so that the casing may be held from rotating while the shaft is rotated from one end of the device, leaving the casing substantially unobstructed for entrance into the inclosed spaces.

HENRIQUE C. KENNEDY.