

(No Model.)

W. E. BROOKE
WRENCH.

No. 486,758.

Patented Nov. 22, 1892.

FIG. 1.

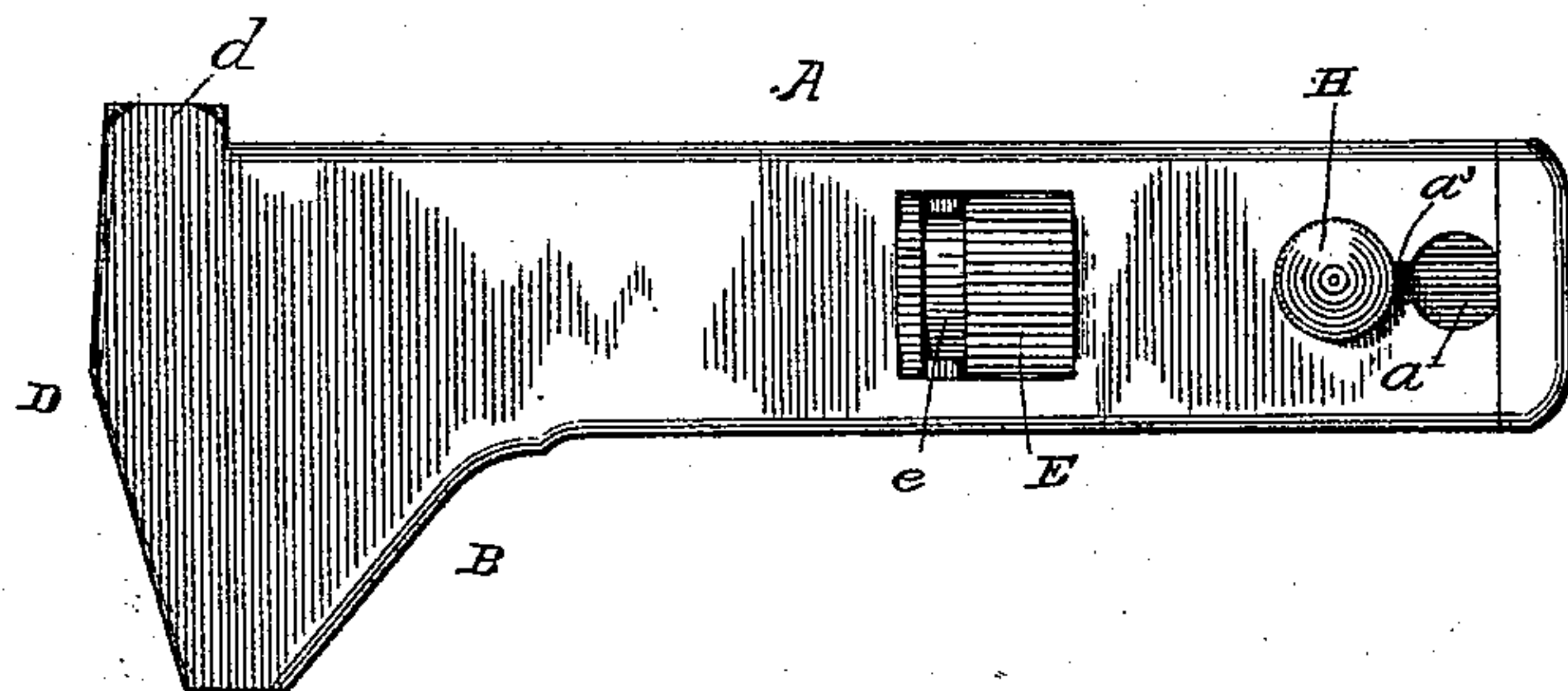


FIG. 2.

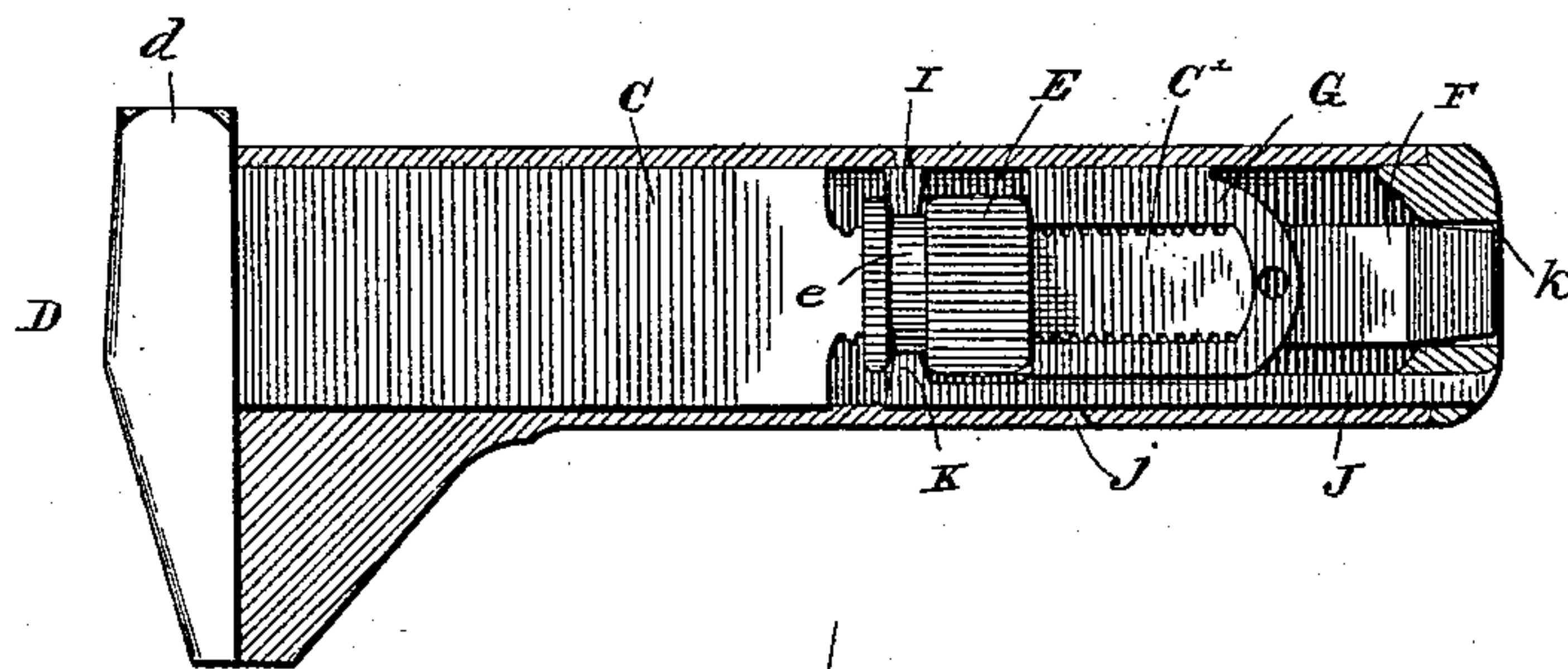


FIG. 3.

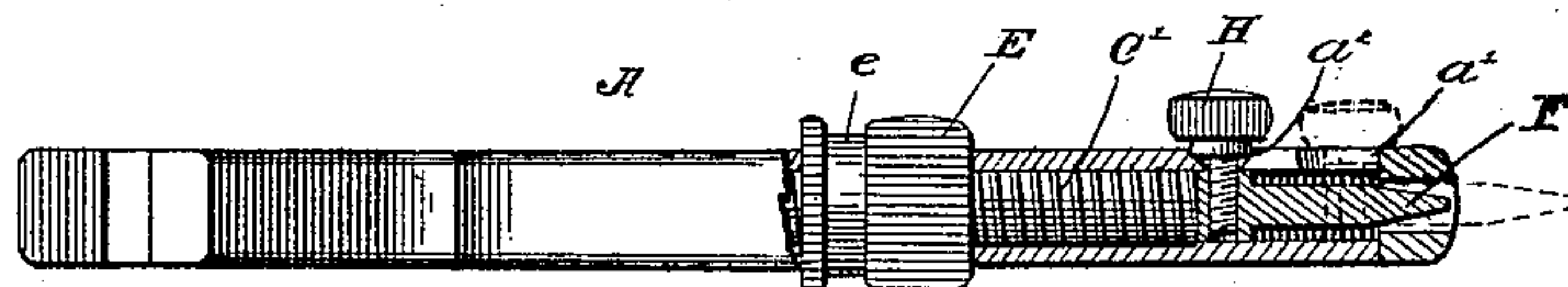
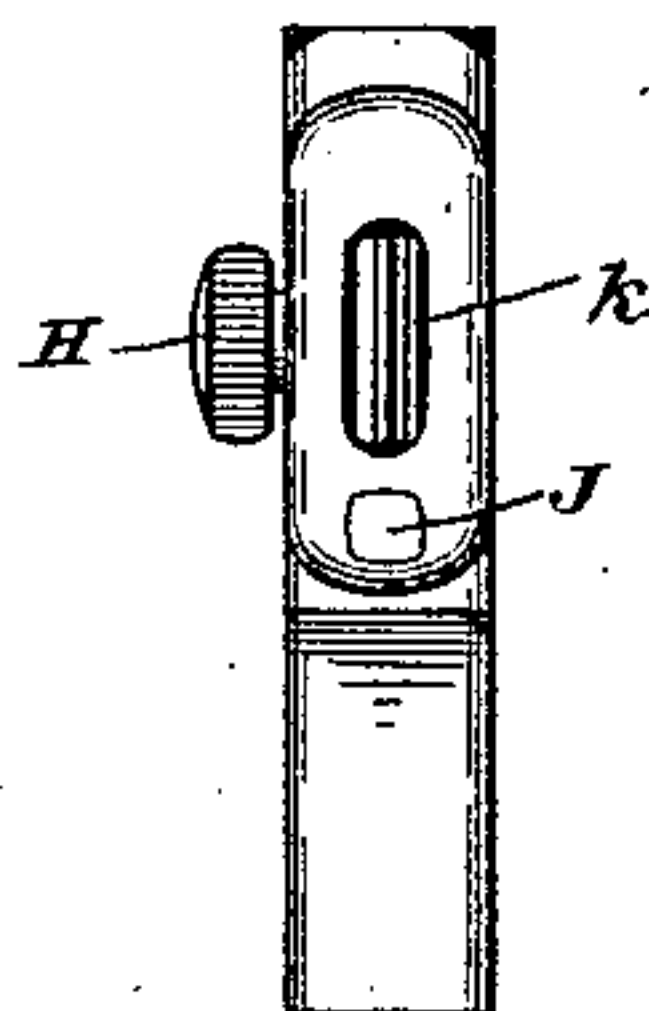


FIG. 4.



Witnesses

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 486,758, dated November 22, 1892.

Application filed February 6, 1892. Serial No. 420,527. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. BROOKE, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in a Combined Monkey-Wrench and Screw-Driver; and I do hereby 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 improvement in a combined monkey-wrench and screw-driver, its object being to provide a neat, simple, and efficient combination-tool for use more particularly with bicycles; and the invention consists, essentially, in the construction, arrangement, and combination of parts, substantially as will be hereinafter described and claimed.

In the annexed drawings, illustrating my invention, Figure 1 is a plan view of my improved combination wrench and screw-driver, the jaws being closed. Fig. 2 is a longitudinal section of the same. Fig. 3 is an edge view in partial section. Fig. 4 is an end view of the device, the screw-driver end being the one shown.

Similar letters of reference designate corresponding parts throughout all the different figures of the drawings.

A represents the hollow wrench-stock or handle-piece and rigid jaw combined. It is of a flattened elongated form. It may be made in any preferable and desirable manner, being either cast or made of hard sheet metal. Its form and size may vary within considerable limits.

B designates the rigid jaw proper, which is formed as a part of the handle-piece. The movable jaw D, which is parallel to the rigid jaw B and is adjustable away from or toward the latter to permit the use of the device, with nuts of varying sizes, is preferably formed on one end with a hammer end *d*, and this jaw D is made integral with its sliding shank C, which lies within the handle-piece A and conforms to the internal dimensions thereof, being designed to reciprocate back and forth therein in order to accomplish the adjustment of the movable jaw relatively to the position of the

rigid jaw. The sliding shank C is provided at its inner end with a screw-threaded shank C', whereon is a knurled or milled adjusting-nut E, provided with an encircling groove *e*, which nut is located in a transverse opening in the handle-piece A at a point about midway the length thereof. It will be evident that by rotating the adjusting-nut E within its recess the screw which is in engagement therewith will be fed forward and the movable jaw consequently adjusted in one direction or the other, as may be desired.

By referring to Fig. 2 it will be seen that while the jaw-shank C is located within the casing provided therefor by the handle-piece A it will be held firmly between the opposite sides of said casing, and when the movable jaw is adjusted farther and farther away from the fixed jaw the shank C will have less and less bearing against the inside of the casing, so that although when the two jaws are but a short distance apart the movable jaw will be held in its position very fixedly, yet when the movable jaw has been adjusted to a considerable distance from the fixed jaw, and the shank C has been in consequence withdrawn nearly its entire length from the casing, the latter will have only a small bearing against the sides of the casing, and in order that the movable jaw may be held as fixedly as is necessary in order to cause the jaws to tightly grip an object between them considerable strain will be thrown upon the inner end of the screw C', which passes through the adjusting-nut E, and consequently strain will be thrown upon said nut, and it therefore becomes necessary that said nut should be held firmly in position and yet at the same time shall not be held in such a manner as to interfere with its use and free movement during its operation of adjusting. To guard against this difficulty, I therefore provide a fixed pin or projection I, secured within the casing to one side thereof by means of a rivet or other suitable device, which pin is clearly shown in Fig. 2, and which enters the circular groove *e* in the nut E; also, I fix at a point within the casing A corresponding to the position of the pin I another similar pin or projection K, which likewise enters the recess *e*. The pin K is preferably carried by

a bar J, which is held within the handle-piece by means of a rivet *j*, passing through the side of the latter. Thus it will be seen that the projections I and K afford supports for the nut E, and when strain is thrown upon the adjusting-screw the nut is held firmly, and thereby the jaws are not deflected from parallelism sufficiently to destroy the effect of their grip upon the object between them. This is found to be a valuable and important feature in the actual use of my improved wrench.

The end of the handle-piece A opposite to that which carries the fixed jaw B is provided with a slot *k* of suitable size to permit the projection therethrough of a screw-driver bit, which is adapted to be located inside of the casing A when it is not needed for use.

F denotes the screw-driver. It is formed with a yoke-piece G, which is of proper dimensions to enable it to be located within and to smoothly slide inside of the handle-piece, and is so made in order to economize space by permitting the end of the adjusting-screw C' to lie between its parts, all as clearly shown in Fig. 2. The handle-piece A is provided in its side wall, near the screw-driver slot *k*, with the lateral circular openings *a'* and *a''*, which are connected by the short slot *a'''*. (See Figs. 1 and 3.)

H denotes a clamping-screw having a milled head, which can be conveniently grasped and turned and having thereon a shoulder which is of proper size to drop into the opening *a'* or the opening *a''*, as the case may be, the screw proper being of proper size to permit it to pass through the connecting-slot *a'''*. This screw engages the screw-driver F by entering a screw-threaded perforation therein. (See Fig. 3.) It will be evident that by manipulating the screw the screw-driver can be thrust in or out and tightly clamped in either position. In Fig. 1 the screw is shown clamped in the slot *a''*, as it is likewise shown in Fig. 3. By loosening the screw sufficiently to remove the shoulder thereon from the opening *a''* and then thrusting the screw-driver out into the position shown in dotted lines in Fig. 3 by causing the clamping-screw to pass through the slot *a'''* the screw-driver can be transferred from its inoperative to its operative position, after which the screw can be clamped, thereby tightly and firmly holding the screw-driver in its projected position, where it can be readily employed for use.

Numerous details in the construction of the various parts may be modified, varied, and changed without departing from this invention, and I reserve the liberty of making such immaterial and useful changes as experience may direct.

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

1. The combination of a hollow handle-piece which carries the fixed jaw, a movable jaw provided with a shank having a screw-threaded extension, an adjusting-nut upon the latter provided with an encircling groove, the internal projections on the wall of the handle-piece which enter the said groove in the adjusting-nut and operate as a support to keep the nut in its position and sustain the jaws in a state of parallelism when widely separated, and a sliding screw-driver having a yoke part which incloses a portion of the screw-threaded shank.

2. The combination of a hollow handle-piece, the movable jaw provided with a shank having a screw-threaded extension which carries the adjusting-nut and a sliding screw-driver having a yoke part which incloses a portion of the screw-threaded shank, substantially as described.

3. In a combined wrench and screw-driver, the combination, with the hollow handle-piece having one end slotted at *k* and provided with the lateral openings *a'* and *a''*, connected by the slot *a'''*, of the movable jaw provided with a shank having a screw-threaded extension which carries the adjusting-nut, a sliding screw-driver having a yoke part which incloses a portion of the screw-threaded shank, and a clamping-screw H, engaging the screw-driver and located within the openings *a'* and *a''*, substantially as described.

4. The combination of the movable jaw-shank C; having a screw-threaded extension C', the adjusting-nut E thereon, the inclosing hollow handle-piece, and the sliding screw-driver F, having a yoked part G, which surrounds the screw-threaded shank C', substantially as described.

5. The combination of the hollow handle-piece carrying fixed jaw, a movable jaw whose shank slides within the handle-piece and is provided with the screw-threaded part C', an adjusting-nut E on said screw-threaded part, supporting projections for the adjusting-nut, the screw-driver F, having yoke G, which partly surrounds the screw-threaded shank C', and the clamping-screw H, operating within the lateral openings *a'* and *a''* in the hollow handle-piece, substantially as described.

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

WILLIAM E. BROOKE.

Witnesses:

EDWIN ROBT. WALKER,
GOUVERNEUR V. PACKER.