(No Model.)

P. W. LOWNES.

WRENCH.

No. 446,220. Patented Feb. 10, 1891.

FIG. 1.

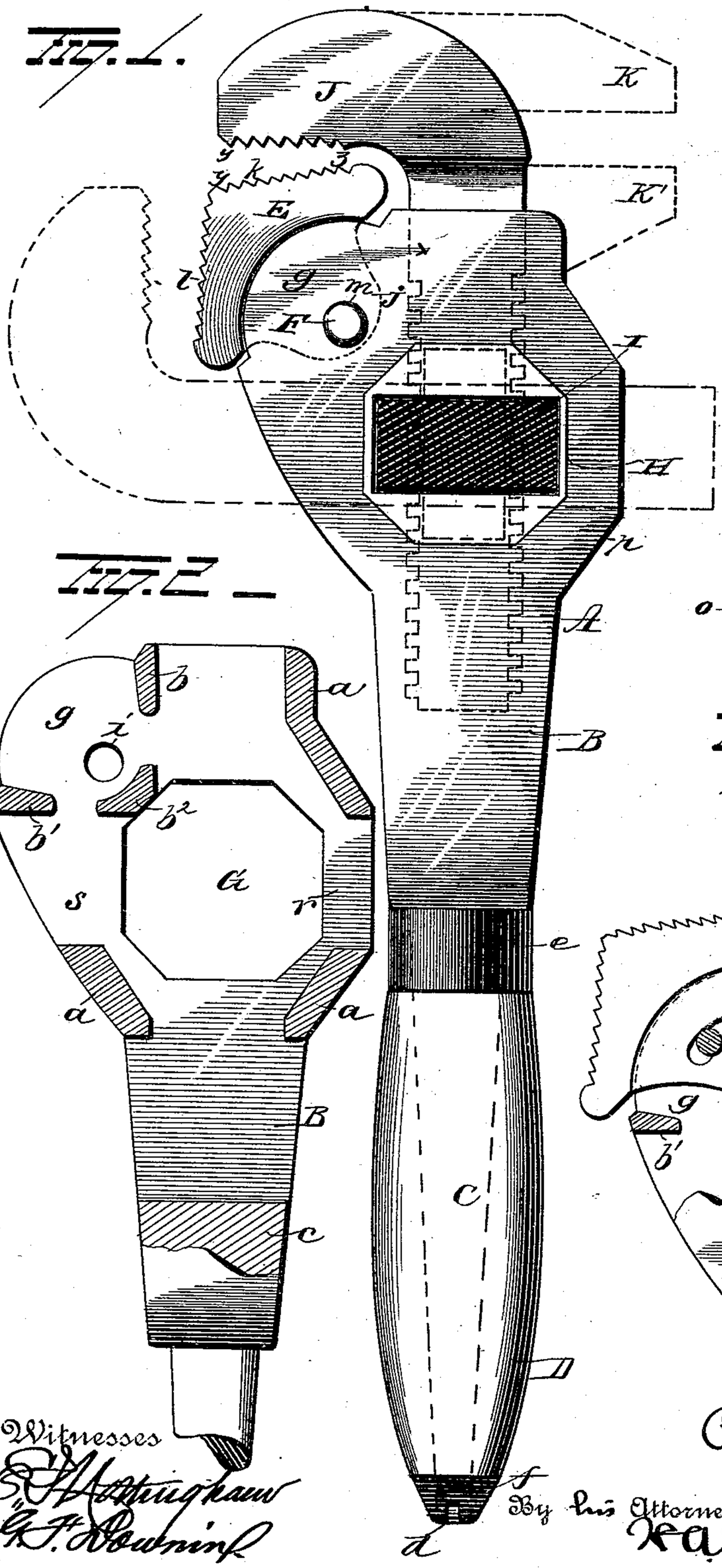


FIG. 2.

FIG. 3.

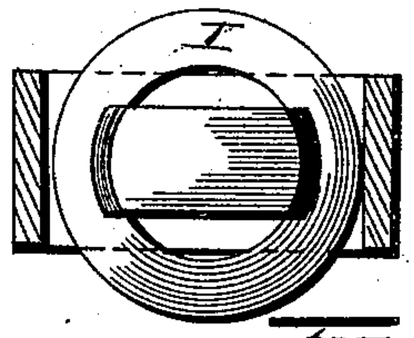


FIG. 4.

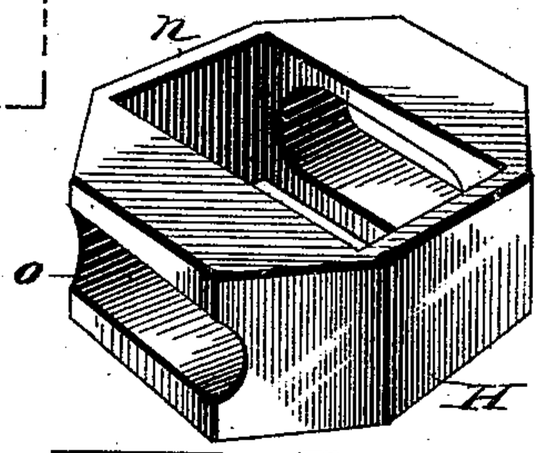
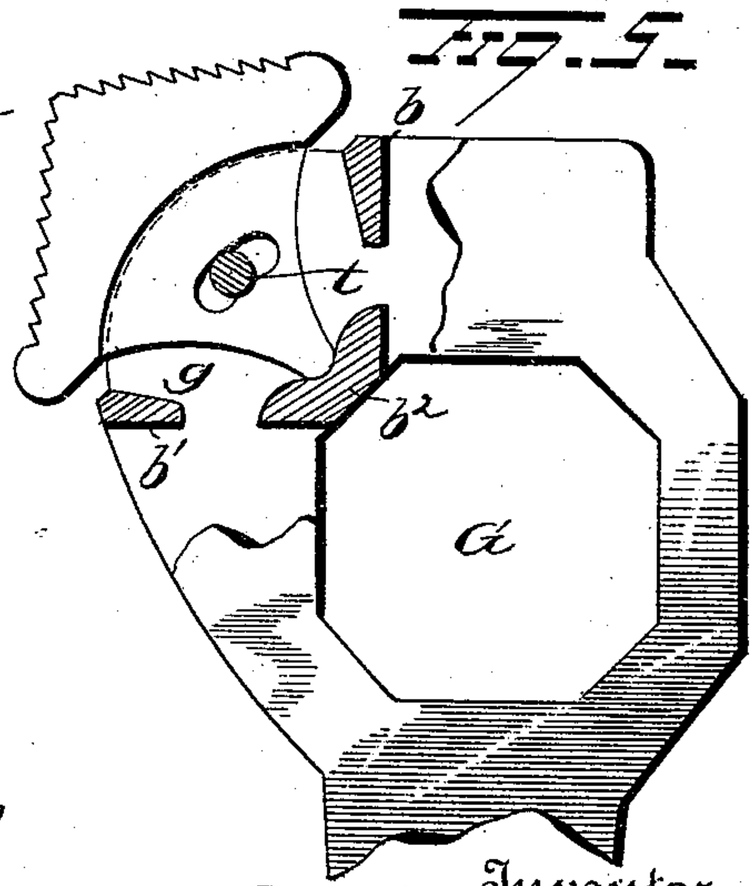


FIG. 5.



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WRENCH.

SPECIFICATION forming part of Letters Patent No. 446,220, dated February 10, 1891.

Application filed April 25, 1890. Renewed January 3, 1891. Serial No. 376,620. (No model.)

To all whom it may concern:

Be it known that I, PHINEAS WILLIAM LOWNES, a citizen of Orlando, in the county of Orange and State of Florida, have invented certain new and useful Improvements in Wrenches; 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.

My invention relates to an improvement in wrenches, and has for its object to produce a wrench which shall be of simple and durable construction, easy to operate, and effective in the performance of its function.

A further object is to produce a wrench having a double-faced jaw and a sliding jaw so arranged relatively to the double-faced jaw that it may be made to operate with either face of said double-faced jaw and at the same time be prevented from lateral movement in whichever position it may be operated.

A further object is to produce a wrench of simple construction having a double-faced pivoted jaw, and so attach a sliding jaw to the body of the wrench that it may be capable of operating with either face of the pivoted jaw.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation of my improved wrench. Fig. 2 is a view of the body of the wrench with the jaws and operating devices removed. Figs. 3 and 4 are views of certain details. Fig. 5 is a view of a modification.

A represents the body of the wrench, and is composed of two flat plates B, of metal sufficiently thick to insure strength, which are properly spaced apart by means of blocks a, a, a', b, b', and b^2, the blocks a' a a forming in part the edges of the body of the wrench. The spacing-blocks may be cast or forged solid with the sides, or, if desired, the ends of said blocks may be contracted and such contracted portions inserted in perforations in the plates B.

Secured to the plates B of the body A at the lower end thereof is a block c, from which a shank C projects, said shank preferably being made tapering and provided at its free end with screw-threads d. Surrounding the shank C is a handle D, of wood or other suitable material, a metallic collar e being fitted to the top of the handle D and adapted to abut against the lower end of the body of the wrench. The lower free screw-threaded end of the shank d projects beyond the end of the handle D, where it is provided with a nut f.

At one side of the body A, near the top thereof, the plates B project upwardly and outwardly to produce portions g, in rear of which the post b^2 is located between the plates. Between the post b^2 and the outer extremity of the curved portions g the plates B are provided with aligned perforations i. Located between the portions g of the plates is the preferably-curved shank j of a jaw E, having an upper face k and an outer face l. The shank j projects inwardly between the plates to a point in proximity to the post b^2, and is provided with a perforation m, adapted to align with the perforations i in the portions g of the plates, through which perforations a pivot-pin F is inserted, whereby the jaw E is pivotally connected to the body of the wrench.

Made in the opposing faces B of the body A are aligned openings G, preferably of octagonal shape, in which openings a similar-shaped box H is inserted, said box having openings n o made through it at right angles to each other, the opening n being adapted to receive an interiorly-threaded nut I, inserted loosely therein, and the opening o being adapted to permit the passage through the box of the screw-threaded shank p of a sliding jaw J.

With the parts constructed and arranged as shown in Fig. 1 the shank p of jaw J is inserted in the opening formed by the spacing-blocks a b, being guided by said blocks and made to pass through the opening o in the box H and through the nut I in said block, the free end of the shank p then passing between and guided by the spacing-blocks a a.

With the parts of the wrench thus assembled the sliding jaw is adapted to be operated by the nut I to engage a pipe inserted between it and the pivoted jaw E. When the device is thus operated, the pivoted jaw E will swing freely on its pivot F in such manner that when pressure is applied to the handle the jaw E swings in toward the sliding

jaw, gripping the pipe or bolt tighter and tighter as the distance between the jaws becomes less, acting after the manner of a toggle-joint. The pivoted jaw E falls back by its own weight when released, and is of such shape that when it hangs free and there is nothing between the jaws they are much wider open at the points *y y* than at *z*, thus giving a sure grip to the pipe. When the pivoted jaw has swung until it strikes the block *a*, it has not come quite parallel with the teeth of the jaw J, thus preventing the work from wedging, so that the wrench will not release, a trouble experienced with almost all wrenches of which I am aware.

By means of the spacing-blocks *a' b* and *a a*, and by making the box H with flat edges to fit into similarly-shaped openings in the plates of the body, the sliding jaw will be guided in its movements and lateral motion of said jaw prevented.

When it is desired to adapt the sliding jaw to operate in conjunction with the face of the pivoted jaw, the sliding jaw is withdrawn and the box H and nut I will be turned one-fourth around, so that the opening *o* in the box will align with the openings *r s*, formed by the spacing-blocks *a*, *a'*, and *b'*. The shank of the sliding jaw will then be passed through these openings and the openings in the box and nut, and thus the sliding jaw will be adapted to operate with the face *l* of the pivoted jaw.

If desired, the jaw E may be pivoted at the end of its shank and a slot made in the body of said shank for the reception of a set-screw *t*, by means of which to adjust it, as shown in Fig. 5.

In order to adapt my invention for use as a monkey-wrench, a jaw K may be made to project in the opposite direction from the jaw J and a jaw K' made to project from the body of the wrench at the opposite side thereof from the pivoted jaw E, as shown in dotted lines in Fig. 1.

By constructing a wrench as above described a device will be produced which will be very simple in construction and effective in operation.

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

1. In a wrench, the combination, with a body having an opening at its top, openings in its sides, a transverse opening, the sides or walls of the latter being angular, and a jaw attached to said body and having teeth on its upper and outer faces, of an adjustable carrier or box shaped to fit the transverse angular opening in the body of the wrench, a movable jaw, and a nut located in the carrier and engaging the movable jaw, substantially as set forth.

2. In a wrench, the combination, with a body having an opening in its top and openings in its sides, and a jaw attached to said body and having an upper and an outer face, of an adjustable carrier having an angular periphery and located in a correspondingly-shaped opening in the body of the wrench, an interiorly-threaded nut in said carrier, and a movable jaw detachably and adjustably located in the carrier, whereby provision is made for causing the movable jaw to work with either face of the pivoted jaw, substantially as set forth.

3. In a wrench, the combination, with a body having an opening in its top and openings in its sides, and a jaw pivoted to said body and having an upper and an outer face, of a detachable carrier inserted in the body of the wrench and having its periphery made up of a series of straight edges, a threaded nut in said carrier, and a sliding jaw having a stem adapted to pass through said carrier and nut, substantially as set forth.

4. In a wrench, the combination, with a body composed of two plates secured together by means of spacing-blocks, of a jaw having an upper and an outer face and a shank, said shank being adapted to enter between the plates composing the body, a pin for pivotally connecting said jaw with the body of the wrench, a box or carrier having straight edges inserted in correspondingly-shaped openings in the plates, a nut in said box, and a jaw having a shank adapted to pass through said box and nut and operate with either face of the pivoted jaw, substantially as set forth.

5. In a wrench, the combination, with a body having openings in its top and sides and an angular opening in its body, and a jaw attached to said body, having an outer and an upper face, of an angular detachable carrier adapted to enter the angular opening in the body of the wrench, a threaded nut in said carrier, and a sliding jaw having a stem adapted to pass through said carrier, substantially as set forth.

6. In a wrench, the combination, with a body having a longitudinal socket, stops or spacing-blocks on opposite sides of the outer end of said socket and forming the end walls thereof, a transverse socket, stops or spacing-blocks on opposite sides of the transverse socket and forming the end walls thereof, the said stops or spacing-blocks adapted to prevent lateral or swinging movement of the movable jaw, and a carrier seated in an opening or recess located at the juncture of the longitudinal and transverse sockets, of a movable jaw and a nut seated in a recess in the carrier and engaging the stem or shank of the movable jaw, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

PHINEAS WILLIAM LOWNES.

Witnesses:

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L. P. WESCOTT.