

P. L. KIMBALL.

WRENCH.

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898,657.

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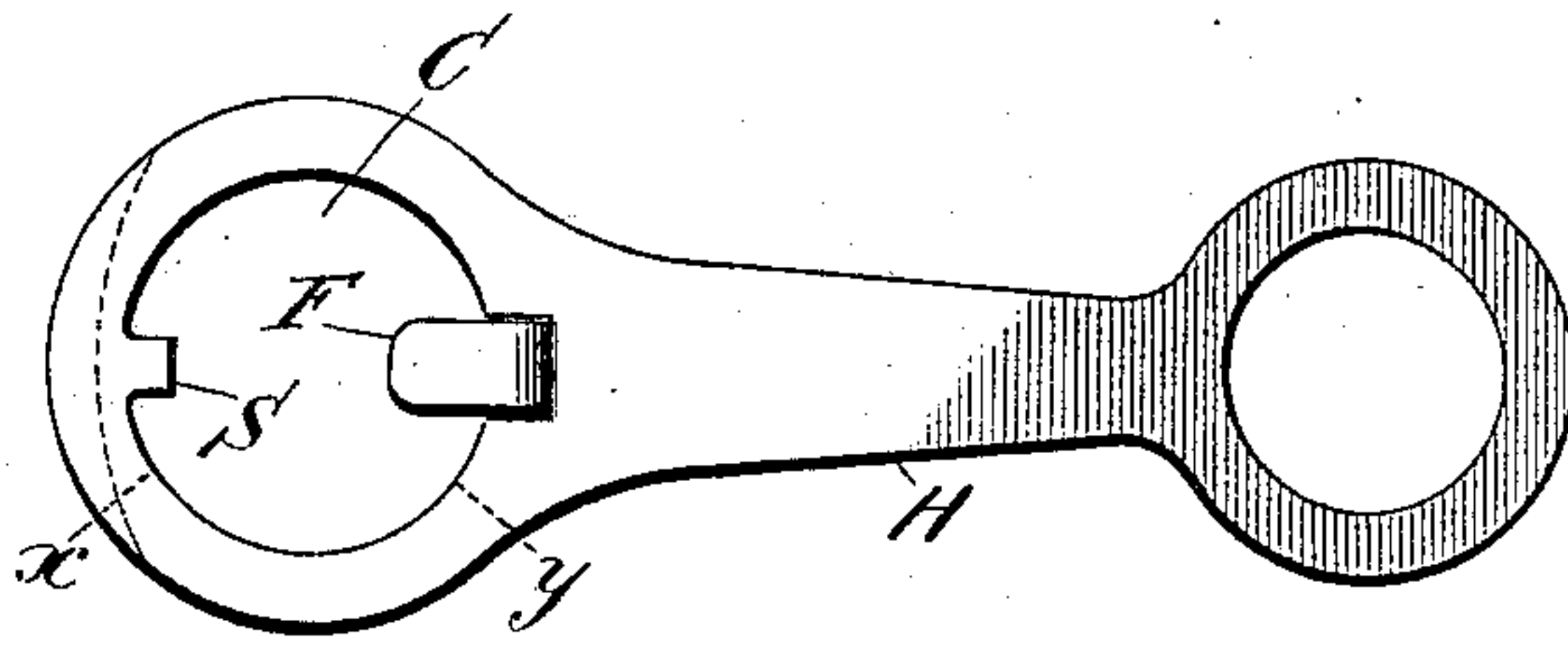


Fig. 1.

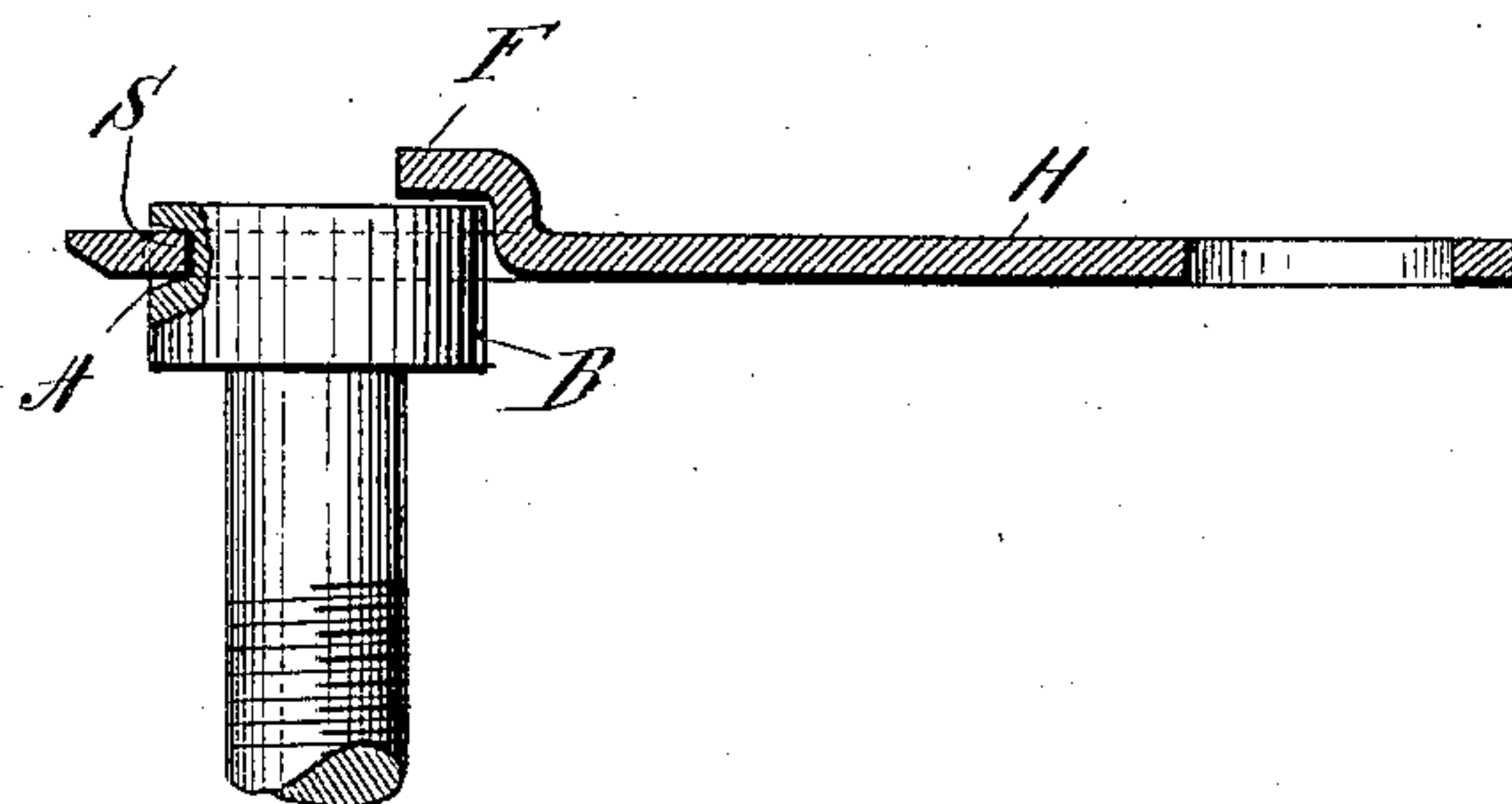


Fig. 2.

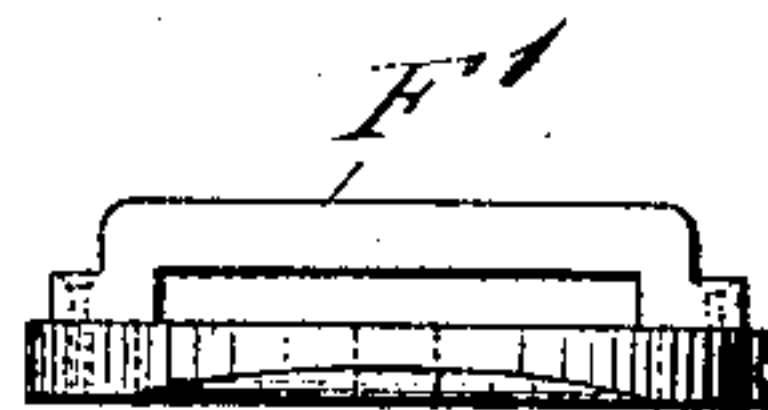


Fig. 3.

WITNESSES=

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UNITED STATES PATENT OFFICE.

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WRENCH.

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To all whom it may concern:

Be it known that I, PERLEY L. KIMBALL, a citizen of the United States of America, residing at Bellows Falls, in the county of Windham and State of Vermont, have invented certain Improvements in Wrenches, of which the following is a specification.

This invention relates to improvements in wrenches particularly of the kind known as spanner wrenches. Heretofore wrenches of this character have been made with a square or other polygonal hole in the head of the wrench to fit, more or less accurately, a nut or bolt-head of similar shape in cross section, or have been made in the shape of a curved hook having a spur projecting inward from the outer end of the hook, and intended to engage a hole formed in the periphery of the nut or bolt-head. In any of these prior forms of spanner wrenches, it is necessary for the user to continually keep the hand upon the wrench in order to hold it in operative position, particularly when applied to the nut or head of a bolt in a vertical position, otherwise the handle of the wrench would drop downward and tilt the socket or spanner end out of operative position, and in case of the hooked form it would drop off from the head. These have been undesirable, inconvenient and annoying forms of construction.

My invention consists of a wrench in which the spanner portion will encompass the nut or head of the bolt more than 180° , that is, so that the wrench cannot be removed laterally from the nut; preferably however, I make the head of the wrench a complete circle with a spur projecting inward from this ring at the side opposite to the handle of the wrench, which spur is intended to engage a hole formed in the periphery of the nut or bolt-head; and I provide one or more fingers or rests which project inward or over the circular opening of the wrench in a plane parallel with and above the surface of the ring, so that when the spur of the wrench is inserted in the hole in the head of the bolt, the bearing finger or fingers projecting over the socket opening will rest upon the top of the bolt-head and hold the wrench in proper operative position without the aid of the hand, and especially when the bolt is in a vertical position it, with the wrench, can be rapidly turned in either direction without liability of falling from the bolt or becoming displaced,

and the handle of the wrench need be firmly grasped by the hand only to finally set up the nut or bolt screw, or to start it from its seat when unscrewing.

In the drawings forming a part of this specification, Figure 1 is a plan view of the simplest form of wrench having a cylindrical hole for the socket and a single bearing finger projecting over it; Fig. 2 is a sectional side elevation of the wrench showing it applied to a bolt-head in operative position, the bolt-head being broken away at the hole with which a spur on the wrench engages; Fig. 3 is an elevation, viewed from the left of Fig. 1, showing the bearing piece in the form of a cross-bar or bridge over the socket opening.

Designating the parts of the wrench by reference letters; C is the circular socket of substantially the size of the nut or head of the bolt; S, the spur projecting into the circular opening and intended to engage a hole A in the periphery of the nut or bolt-head B. From the socket ring a finger F projects over the opening and is arranged in a plane parallel with that of the body of the wrench, but above it, so that when the spur is in engagement with the hole in the bolt the finger F will rest upon the top of the bolt-head, as illustrated in Fig. 2, and remains there in operative position without the aid of the hand of the user; and when the bolt is in a vertical position by placing a finger of the hand against the handle H the wrench with the bolt may be rapidly turned in either direction without liability of the wrench being displaced. For ease of operation the circular opening C in the wrench should be made large enough to be easily applied to and removed from the nut or bolt-head without binding upon the edges thereof.

If desired, more than one projecting finger or bearing piece may be employed, at different circumferential positions on the socket ring which encompasses the circular opening C, or in place of fingers, a continuous strip F' in the nature of a bridge may extend across the socket opening, and have its ends fastened to the encompassing ring, as in Fig. 3, so that it will serve as a bearing piece and rest upon and across the nut or bolt-head when the wrench is applied thereto; but these equivalents will, in most instances, be found unnecessary, and for simplicity and economy of manufacture the construction

illustrated will be found satisfactory. Obviously, also, a portion of the metal surrounding the socket of the wrench might be omitted; for instance, the portion between dotted lines 5 $x-y$, Fig. 1, but at least something over 180° of the encompassing ring should remain so that the wrench cannot be removed laterally from the nut or bolt-head.

I claim:-

10 1. In a spanner wrench, a socket for a nut or bolt-head, which will encompass more than 180° of the periphery of the head, an inwardly projecting spur to engage a hole in the periphery of the head and one or more 15 bearing pieces which project over the socket

opening and rest upon the top of the nut or bolt-head when in operative position thereon.

2. In a spanner wrench, a circular opening to fit over the nut or bolt-head, a spur projecting radially into such opening to engage a 20 hole in the periphery of the bolt-head and a finger which projects over the circular opening upon the side substantially opposite to said spur, and which rests upon the top of the bolt-head when the wrench is in operative 25 position thereon.

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Witnesses:

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