No. 775,783. PATENTED NOV. 22, 1904.

L. W. SIPLE.

WRENCH.

APPLICATION FILED APR. 13, 1904.

NO MODEL.

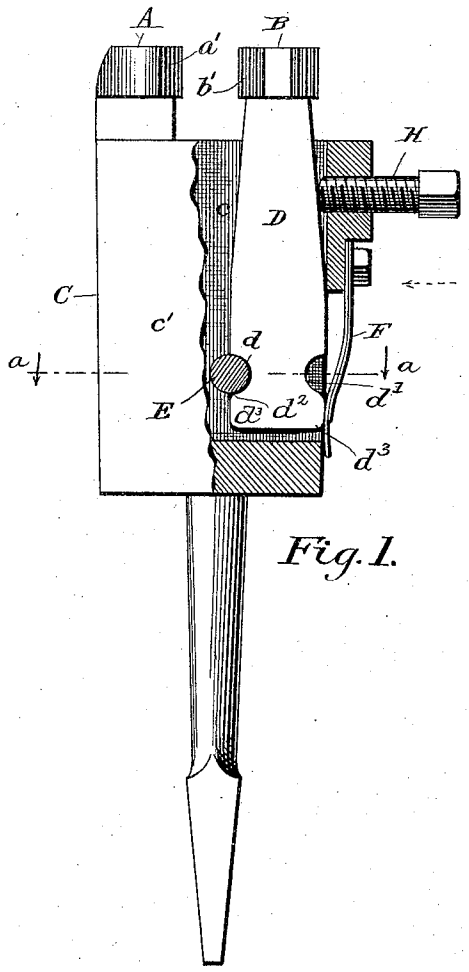


Fig. 1.

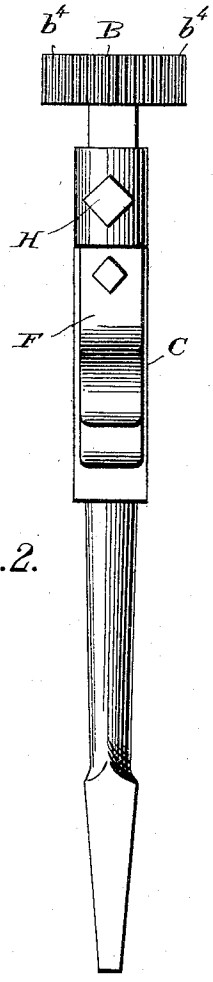


Fig. 2.

Fig. 3.

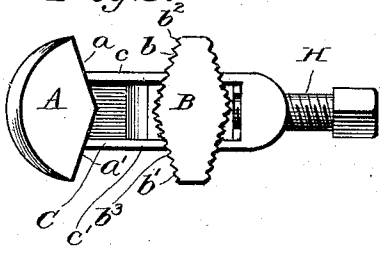
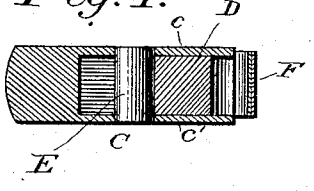


Fig. 4.



Witnesses.

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No. 775,783. Patented November 22, 1904.

UNITED STATES PATENT OFFICE.

LYNN W. SIPLE, OF CHEROKEE, IOWA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 775,783, dated November 22, 1904.

Application filed April 13, 1904. Serial No. 202,963. (No model.)

To all whom it may concern:

Be it known that I, LYNN W. SIPLE, of Cherokee, county of Cherokee, and State of Iowa, have invented a new and useful Improvement in Wrenches, of which the following is a specification.

This invention relates to wrenches for use more particularly in removing and inserting horseshoe-calks, although it is adapted also for other uses for which wrenches are commonly employed.

It is now a common practice to provide horseshoes with removable calks having a threaded shank adapted to screw into the shoe and formed with an exteriorly-smooth "point" which projects beyond the face of the shoe, and owing to the rough and severe usage to which the shoe is subjected it frequently becomes very difficult to remove the worn calk for its replacement by a new one. My improved wrench is designed with special reference to meet these requirements; and the invention consists, mainly, in providing the wrench with two coöperating jaws presenting two opposing grasping-surfaces tapered or beveled in opposite directions, so that they may be used to turn the calk either to the right or left, as in screwing it in place or unscrewing it to remove it.

The invention consists also in securing one of the jaws in place by a spring-actuated locking device to the end that it may be readily removed for repairs, such as sharpening its gripping-teeth, or reversed in position to bring a fresh gripping-surface in active relation to the opposite jaw.

The invention also consists in an improved means for adjusting the distance between the jaws to adapt the tool for use on calks of different sizes.

The invention consists also in the details of construction and combination of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of my improved wrench, partly in section and with portions broken away to expose other parts to view. Fig. 2 is an edge view of the same looking in the direction of the dotted arrow of Fig. 1. Fig. 3 is an end view of the wrench, showing the form and relation of the jaws. Fig. 4 is a sectional plan view on the line *a a* of Fig. 1 viewed in the direction of the arrow in full lines in said figure.

Referring to the drawings, referring more particularly to Fig. 3, my improved wrench is provided with two jaws A B, each of which is formed with two grasping-surfaces *a a'* on the jaw A and *b b'* on the jaw B, arranged, respectively, on opposite sides of the centers of the jaws and beveled or inclined in opposite directions, the opposing coacting surfaces *a b* being inclined in opposite directions with reference to each other and with reference to the coacting surfaces *a'* and *b'*. The surfaces of one of the jaws—in the present instance jaw B—are formed with gripping-teeth b^2 b^3, which teeth point, respectively, in opposite directions on the respective surfaces, with both sets of teeth pointing inward toward each other, the result being that when the opposing surfaces *a b* are engaged with a calk or other body and the tool given a twist or turn to the left the teeth b^2 will grip the calk, and when the surfaces *a' b'* are engaged with a calk and the tool turned to the right the teeth b^3 will grip the calk, so that by engaging one or the other of the two sets of opposing jaws with the calk the latter may be unscrewed to remove it from the shoe or screwed in to insert it in the shoe. The two jaws A B are sustained by a casing or body C, the jaw A being fixed to said casing at one edge and the jaw B being provided with a shank D, extending into the casing, so as to fit snugly but movably between its side walls *c c'*, the inner end of the shank being confined therein in such manner that its outer end, carrying the gripping-surfaces, may be adjusted to and from the fixed jaw or entirely removed from the casing for the purpose presently to be described. The manner of thus confining the jaw B in place is represented at Fig. 1, where it will be seen that near its inner end the shank D is formed with a socket *d*, which receives a fixed transverse pin E, extending between the walls of the casing, and which is held yieldingly in engagement with the pin by means of a flat leaf-spring F, fixed at one end near the outer end of the casing, so that its free end will bear against the edge of the

shank on the side opposite where it is engaged with the pin, the casing being opened at its edge to expose the end of the shank to the pressure of the spring. As a result of this arrangement and construction the jaw B will have a limited pivotal motion on the pin E as an axis, so that its outer end may be moved to and from the opposite jaw in order to vary the distance between the jaws, which motion is controlled by an adjusting-screw H, extending laterally through the casing near its outer end and having its inner end adapted to bear against and afford a stop for the shank of the jaw B.

The jaw B, by reason of the manner in which it is confined in the casing, as described, may be removed bodily by forcibly pulling it endwise outward, which action will cause the spring F to yield and allow the disengagement of the socket from the pin, which disengagement may be facilitated by rounding the wall of the socket at its outer side, as at d^2. The jaw may be again inserted in place by forcibly pushing the end of its shank, which is rounded, as at d^3, between the fixed pin and the spring, which action will cause the latter to yield and allow the end of the shank to pass and permit the engagement of its socket with the pin. The socket, pin, and spring thus constitute, in effect, a spring-actuated locking device by means of which the jaw is held frictionally in place, so that its removal may be effected by merely overcoming the pressure of the spring in the manner described. The main purpose of the bodily removal of the jaw is to admit of its gripping-teeth being sharpened when by continued use they become dull. I propose, however, to provide for the reversal of the jaw in order to bring into active relation to the fixed jaw a fresh set of gripping-teeth b^4 on the opposite side of jaw B, and in order to provide for the locking of the jaw in its reversed position in the casing a second socket d' is formed near the end of the shank and opposite the socket d. By this means when one set of teeth becomes worn or unfit for use a fresh set may be immediately and quickly brought into action by disengaging socket d from the pin, removing the jaw, reversing it side for side, and engaging socket d' with the pin to secure the jaw in its reversed position.

The wrench may be turned in operating it in any suitable manner; but I prefer to provide the inner end of the casing with a longitudinally-extending operating-shank adapted to be fitted to a brace or bit-stock.

Having thus described my invention, what I claim is—

1. In a wrench, the combination of opposing coöperating jaws, each formed with two gripping-surfaces arranged respectively on opposite sides of a line connecting the jaws, said gripping-surfaces being formed and disposed relatively to present two open outwardly-diverging spaces respectively on opposite sides of said line, for the reception of the object to be acted on.

2. In a wrench, the combination of coöperating jaws each formed with two active surfaces inclined in opposite directions to each other, with the surfaces of one jaw inclined each in a direction opposite the coacting surface of the opposite jaw, and said surfaces conjointly presenting two open outwardly-diverging spaces respectively on opposite sides of a line connecting said jaws.

3. In a wrench, the combination of opposing jaws having their adjacent active faces sloping outward in opposite directions both from a central line connecting the jaws and a line extending between the jaws.

4. In a wrench, the combination of opposing jaws, each provided with two active surfaces arranged on opposite sides of the center of the jaw, the said surfaces of each jaw sloping backward and outward in opposite directions and from the opposite jaw.

5. In a wrench, the combination of opposing jaws each provided with two active surfaces arranged on opposite sides of the center of the jaw, the said surfaces on each jaw sloping backward and outward in opposite directions and from the opposite jaw, and gripping-teeth on the surfaces of one of said jaws pointing inward toward the center of the jaw.

6. In a wrench, the combination of a fixed jaw, a detachable jaw, and a spring-actuated locking device for holding the detachable jaw in operative relation to the fixed jaw.

7. In a wrench the combination with a casing, of a jaw carried thereby, an opposing jaw provided on its outer end with a gripping-surface, and having a shank extending into the casing, an open socket in one edge of the shank near its inner end, a fixed fulcrum-surface in the casing entering the socket, and a spring fixed to the casing and having its free end bearing frictionally on the edge of the shank opposite the socket and adjacent to said socket, thereby holding the shank with the socket in pivotal and detachable engagement with the fulcrum-surface.

8. In a wrench the combination with a casing provided with a fixed jaw having two active surfaces, of a coacting jaw provided with two sets of interchangeable gripping-surfaces, and having a shank extending into the casing, said shank being formed in opposite edges near its inner end with open sockets, a fulcrum-surface in the casing adapted to enter either of said sockets, and a spring sustained by the casing and acting on the shank and serving to hold the parts yieldingly interlocked.

9. In a wrench, the combination with the fixed jaw having two active surfaces inclined outward in opposite directions, of a coacting jaw having two sets of interchangeable surfaces formed with gripping-teeth, said coacting jaw being reversible side for side with reference to the fixed jaw, whereby either of

the two sets of active surfaces of the reversible jaw may be brought into active relation to the opposing jaw.

10. In a wrench the combination with a casing having side walls, of a jaw fixed to said casing, an opposing jaw having a shank fitting movably between said side walls and movable to and from the fixed jaw, means for controlling said movement, a pin extending between the walls of the casing, a socket in the shank embracing the pin, and a spring fixed to the casing and having its free end bearing on the shank and tending to hold the parts yieldingly engaged.

In testimony whereof I hereunto set my hand, this 1st day of April, 1904, in the presence of two attesting witnesses.

LYNN W. SIPLE.

Witnesses:
HENRY PECK,
G. W. DEWITT.