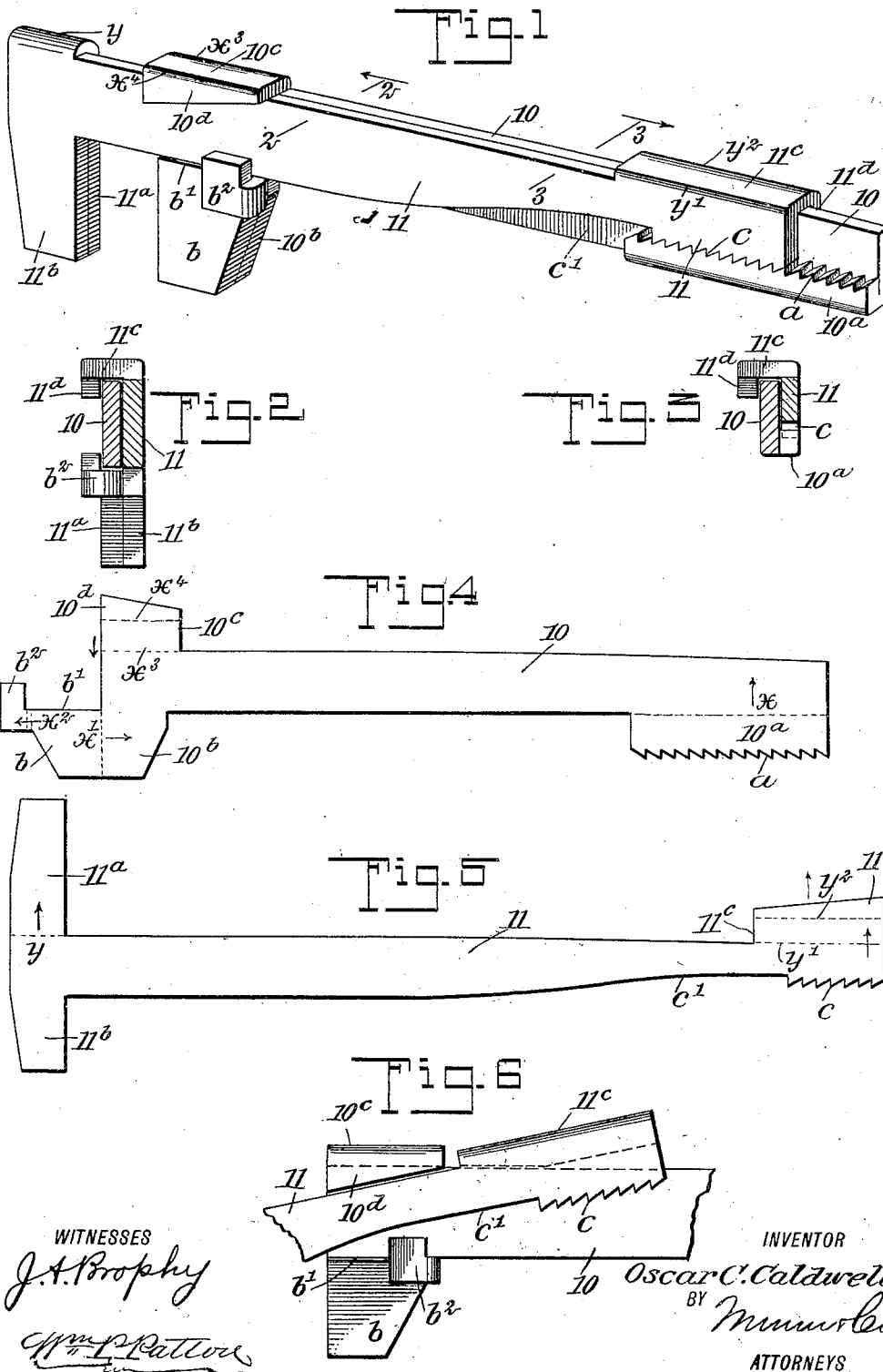


O. C. CALDWELL.
ADJUSTABLE WRENCH.
APPLICATION FILED NOV. 13, 1908.

920,536.

Patented May 4, 1909.



WITNESSES
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OSCAR C. CALDWELL, OF KLAMATH FALLS, OREGON, ASSIGNOR OF ONE-HALF TO LEWIS JACOBS, OF KLAMATH FALLS, OREGON.

ADJUSTABLE WRENCH.

No. 920,536.

Specification of Letters Patent.

Patented May 4, 1909.

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To all whom it may concern:

Be it known that I, OSCAR C. CALDWELL, a citizen of the United States, and a resident of Klamath Falls, in the county of Klamath and State of Oregon, have invented a new and Improved Adjustable Wrench, of which the following is a full, clear, and exact description.

This invention relates to wrenches of the sliding jaw type and has for its object to provide a wrench of the character indicated, which consists of but two sections, each cut from plate metal as flat blanks into proper form and completed by lap-folding members of each section upon other portions thereof, the two sections when completed being adapted for slidable engagement and locking adjustment at desired points of separation of the jaws.

The invention consists in the novel construction and combination of parts, as is hereinafter described and defined in the appended claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improved wrench in complete form; Fig. 2 is a transverse sectional view, substantially on the line 2—2 in Fig. 1; Fig. 3 is a transverse sectional view, substantially on the line 3—3 in Fig. 1; Fig. 4 is a side view of a flat plate metal blank cut to proper marginal shape, which when bent so as to lap fold portions upon each other, constitutes one half section of the wrench; Fig. 5 is a side view of a complementary plate metal blank that constitutes the other half section of the wrench, that is completed by bending the portions thereof so as to lap them upon adjacent portions; and Fig. 6 is a perspective view of portions of the half sections of the wrench, showing their relative positions when they are being connected together or detached from each other.

The two sections of the wrench are preferably cut from steel plates of a suitable thickness. The blank that has been cut into shape for one of the sections of the wrench and that is shown in flat condition

in Fig. 4, consists of the following integral elements: The portion 10, which in use serves as a lever member, is an elongated flat bar having parallel side edges, a suitable width, and a length proportioned to the capacity for service to be given the completed wrench. Upon one end portion of the lever body 10, that in use forms a part of a grip member therefor, the width of the blank is increased a proper degree at one side edge of the lever body, an edge of said laterally-widened portion 10^a being parallel with the opposite edge thereof and furnished with ratchet teeth *a*; as shown in Figs. 1 and 4. The part 10^a is given proper relative position by lap folding it upon the side of the lever 10 along the line *x* in Fig. 4 in the direction of the arrow thereat, which will dispose the ratchet teeth *a* at one side of the lever 10 and hooking toward the free end of said lever, as appears in Fig. 1. At or near the opposite end of the lever bar 10, the blank is indented at each side of the edges of the lever, producing two integral lateral extensions 10^b, 10^c thereon. The extension 10^b, while in flat condition, extends below the lever body or in the same direction as that of the portion 10^a.

A wing *b* is extended forwardly on the extension 10^b, and when the wrench section is completed said wing laps upon said extension, being folded on the line *x'* shown in Fig. 4, and the free upper edge *b'* of the wing *b*, when folded, alines with the lower edge of the lever 10.

Upon the outer or forward end of the wing *b*, a lug *b*² is formed, which while flat, extends above the edge *b'*, said lug being folded in the direction of the arrow *x*² when the wing is folded upon the extension 10^b, which will dispose the lug as shown in Fig. 1.

The upward extension 10^c from the lever 10, is, when completed, bent at a right angle on the line *x*³, so as to overhang the edge *b'* of the wing *b*, and said extension is again bent on the line *x*⁴ so as to produce a depending flange 10^d thereon that is disposed above the lug *b*². The lower edge of the flange 10^d is sloped a suitable degree rearward and upward from the front end thereof which will afford necessary space between

the lug and the flange for a purpose herein-
after explained, thus completing one jaw of
the wrench.

The other section of the wrench comprises
5 a lever member 11 of substantially an equal
length with the lever 10, and for a portion of
its length extending from the front end rear-
ward, has equal width therewith.

Upon the front end of the lever member
10 11, a lateral member 11^a projects at one edge
thereof, and a shorter member 11^b is ex-
tended oppositely from the other edge of the
lever. The parts 11^a, 11^b, together consti-
tute a jaw, that is completed by folding the
15 member 11^a in the direction of the arrow in
Fig. 5 upon the line *y* and lapping it closely
thereon.

There is a laterally-extended flange 11^c
20 11, which projects from the normally upper
edge thereof, and upon the edge of the lever
opposite from said flange, a plurality of
ratchet teeth *c* are formed, that hook for-
wardly or in a direction opposite, from that
25 of the teeth *a* on the other section of the
wrench.

From a suitable point between the ends of
the lever 11, the width thereof is gradually
reduced toward the teeth *c* that project
30 slightly beyond said sloped edge *c'*, where
the latter joins these teeth, as is best shown
in Fig. 5.

On the dotted line *y'* in Fig. 5, the flange
11^c is folded at a right angle in the direction
35 of the arrow at said line, and at the line *y'*
another right angular bend is formed that
projects a member 11^d downwardly there-
from. The space between the depending
member 11^d and the flange 11^c of which it is a
40 portion, is such that these parts will loosely
embrace the lever body 10 when the two sec-
tions of the wrench are assembled for use.

As indicated in Fig. 6, the portion of the
lever body 11 that is of reduced width, may
45 be readily introduced between the sloped
edge of the depending flange 10^d and the lug
*b*², this insertion being facilitated if the rear
portion of the section 11 is inclined at its
upper edge away from the lever member 10.
50 The lever body 11 may now be seated on the
edge *b'* of the wing *b*, and the rear portion of
the lever 11 having the spaced depending
flange 11^d thereon, be saddled upon the lever
body 10, the teeth *c* interlocking with the
55 teeth *a*, as shown in Fig. 1.

It will be noted that the two section of the
wrench are laterally engaged with each other
so that there can be no displacement while in
service. The jaws of the two sections are
60 disposed in parallel planes when the ratchet
teeth *a*, *c*, are interlocked, and the loose sup-
port of the lug *b*² and the flange 10^d affords
strength to the coacting levers 10 and 11, so
that while very light, the wrench is ex-
65 tremely strong and durable.

In use the rear portion where the teeth *a*,
c, are engaged, is grasped by the user of the
wrench.

By obvious manipulation, the interlocked
teeth *a*, *c*, may be detached, and the jaws 70
slid to open or close them, and it will be seen
that the wrench may be readily adjusted by
a single motion of one hand to embrace a nut,
bolt head or other object upon which it is
applied.

In the manufacture of the wrench, it is to
75 be understood that these portions which are
lapped one upon the other, are preferably
heated so that by heavy pressure, consolida-
tion of the lapped members is effected, but if
80 necessary to insure positive contact therebe-
tween, such lapped elements may be trans-
versely perforated and secured together by a
rivet. In order to render the wrench du-
rable, all the parts of the same are tempered, 85
and more particularly the working faces of
the wrench jaws that incur the greatest
wear.

It is obvious that there may be gear teeth
or equivalent projections substituted for the 90
ratchet teeth *a* and *c*, but for convenience in
operation, it is preferred to employ the teeth
shown.

Slight changes in proportion of parts and
their form may be employed within the scope 95
of the invention, as for example, the jaws of
the wrench may be bent at an angle laterally
and said jaws may have an increased length
if this is desired.

Having thus described my invention, I 100
claim as new and desire to secure by Letters
Patent:

1. A wrench comprising a plurality of sec-
tions of sheet material, one section consisting
of a handle portion having at one end lateral 105
extensions on opposite sides thereof, one of
which extensions is of a length equal to the
length of the other plus the width of the
handle portion and is superimposed upon the
said extension and handle member to form a 110
jaw, and having at the other end a lateral
extension forming a guideway, the other sec-
tion consisting of a handle member having at
one end lateral extensions, one of which ex- 115
tends beyond the handle member, the ex-
tended portion being superimposed upon the
extension proper, the other extension being
bent to form a guideway for the purpose set
forth and means in connection with the
handle portions for retaining them in adjust- 120
ed position with respect to each other.

2. A wrench comprising a plurality of sec-
tions of sheet material, one section consisting
of a handle portion having at one end lateral 125
extensions on opposite sides thereof, one of
which extensions is of a length equal to the
length of the other plus the width of the
handle portion and is superimposed upon
the said other extension and handle member
to form a jaw, and having at the other end a 130

lateral extension forming a guideway, the
other section consisting of a handle portion
having at one end lateral extensions, one of
which extends beyond the handle member,
5 the extended portion being superimposed
upon the extension proper, the other extension
being bent to form a guideway for the
purpose set forth.

In testimony whereof I have signed my
name to this specification in the presence of 10
two subscribing witnesses.

OSCAR C. CALDWELL.

Witnesses:

WM. H. HARRIS,
JOHN IRWIN.