J. L. GARNER.

WRENCH.

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929,125. Patented July 27, 1909.

Fig. 1.

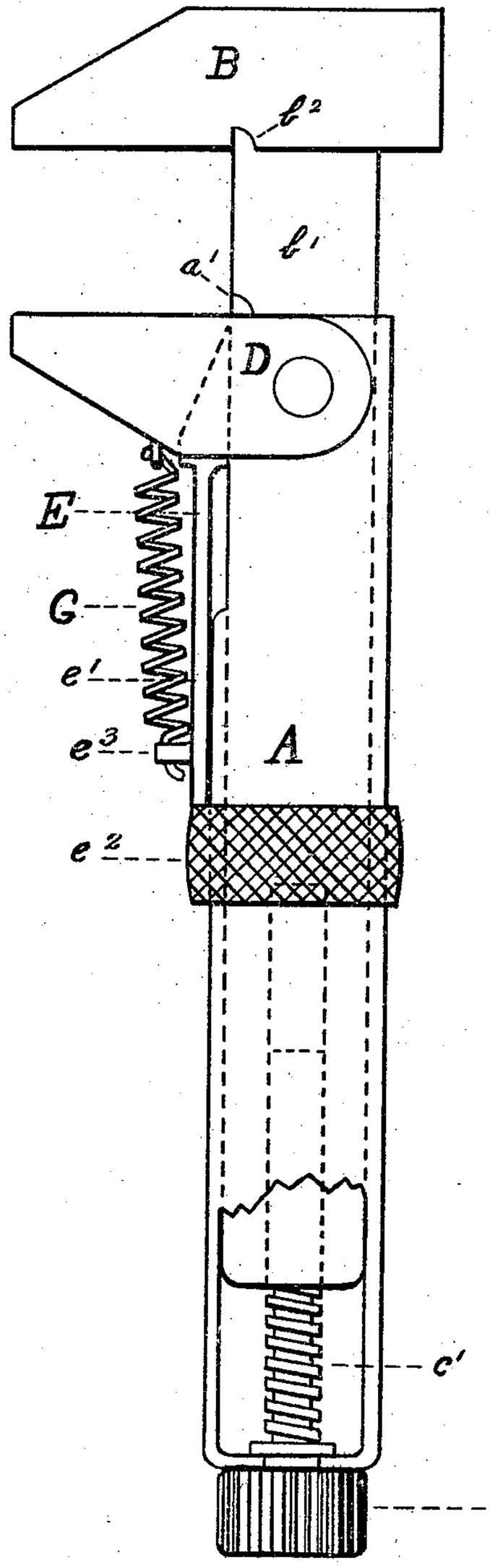
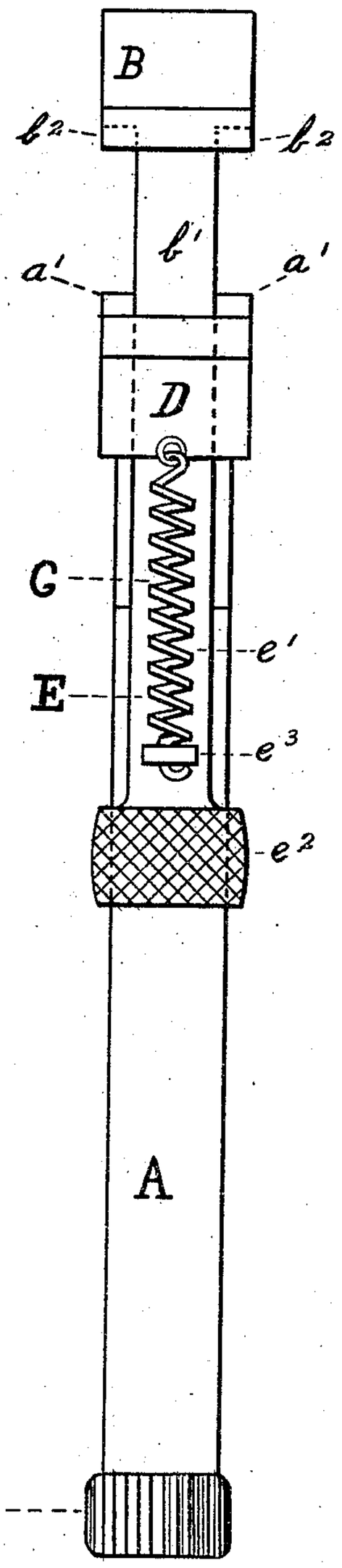


Fig. 2.



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WRENCH.

No. 929,125. Specification of Letters Patent. Patented July 27, 1909.

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To all whom it may concern:

Be it known that I, JOHN L. GARNER, a citizen of the United States, residing at Delafield, in the county of Waukesha and State of Wisconsin, have invented a new and useful Wrench, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in wrenches and has for its primary object the provision of means to enable the user, at will, to open one jaw, with reference to the other, for the purpose of taking a new hold on the nut, or other object, being operated upon, and to enable the wrench to be turned either backward or forward on the object being operated upon, as a center, for the purpose of obviating the necessity, when the limit of motion of the wrench, in either direction, has been reached, of removing the wrench from the object being operated upon for the purpose of securing a new hold on the said object; and at the same time to have this faculty of turning upon the object, being operated upon, as a center, entirely under the control of the user, in order that a reciprocating motion may be imparted to the wrench for turning any object in either direction without removing the wrench from the said object.

A convenient embodiment of the invention comprises, broadly, a jaw with a shank or stem axially movable with reference to a handle, a handle to which is pivoted a jaw, which is forced into proximity or contact with the object being operated upon, by a wedge supported by the handle or other part of the wrench; said wedge being forced into contact with the said pivoted jaw by a spring and being so formed and placed that it may be withdrawn from the pivoted jaw by the thumb or fingers of the user; while the increased tension on the spring, caused by the retraction of the wedge, compels the pivoted jaw to recede from the object situated between the two jaws, thus permitting the wrench to be turned upon the object being operated upon, as a center. The jaw integral with its shank or stem is adjusted to objects of various sizes by means of a screw and knurled thumb-nut, or other suitable means.

The invention further comprehends and the above described embodiment embraces more specifically the aforesaid axially movable shank and jaw, the handle, pivoted jaw, wedge and spring, so arranged that when the spring, wedge and pivoted jaw are in their normal positions the said pivoted jaw is held in contact or proximity with the object situated between the two jaws and about to be operated upon, while the opposite side of said object impinges against the jaw integral with the shank, axially movable with reference to the handle.

By virtue of the construction and disposition of the parts of my wrench it may be used for all purposes to which both the so-called monkey wrench and the ratchet wrench are applicable.

The novel details in the construction and arrangement of the several parts of my wrench will be apparent from the following detailed description, when read in connection with the accompanying drawings, forming part of the specification hereof, and wherein the embodiment referred to is illustrated.

In the drawings, Figure 1 is a side elevation with part of the handle broken away and Fig. 2 is a front elevation.

Referring more specifically to the drawings, wherein like reference characters refer to corresponding parts in the several views, A designates the handle provided with lugs a' a' whose purpose is to prevent the wrench, when it is applied to a thin, flat object, from sliding on to the said object too far and binding; B the jaw integral with the shank or stem b', the whole axially movable with reference to the handle A; C designates the knurled thumb nut of the screw c' for adjusting the jaw B to the object about to be operated upon; D is the jaw pivoted to the handle A; E is the wedge provided with the stem e' and the thumb or finger-piece e^2; and also a lug e^3 to which the spring may be attached; G is the spring which is attached to the lug e^3 of the wedge E and also to the under side of the jaw D, and which, being in tension, draws the wedge E up into the wedge-shaped space included between the rear face of the pivoted jaw D and the front face of the handle A and jaw shank b', thereby forcing the jaw D into contact or proximity with the object situated between the jaws and about to be operated upon. The lugs a' a' on the end of the handle A adjacent to the pivoted jaw D fit into recesses b^2 in the jaw B when the jaws are brought together by means of the thumb-nut C.

In operation the jaws are opened by means of the thumb-nut C sufficiently to allow the

object, about to be operated upon, to be grasped and are then, by means of the said thumb-nut, brought together to grasp the object closely, but not so tightly as to make it impossible for the spring G again to close, or force up, the jaw D by drawing the locking wedge E into the space between the rear face of the pivoted jaw D and the front face of the handle A, and of the front face of the stem b' of the jaw B, after the jaw D has been caused to recede from the object being operated upon by withdrawing, by means of the user's thumb or fingers, the support of the wedge E from the pivoted jaw D, for the purpose of permitting the wrench to be turned upon the object being operated on, as a center.

It should be noted that the rear or inner face of the jaw D is so shaped with reference to the front face of the wedge E that when the said wedge is drawn up, by the spring G, into the space between the jaw D and the handle A as far as it will go, an absolute lock is established and no amount of pressure on the jaw D would force it to open until the wedge E is withdrawn.

The jaws having been properly adjusted to the object to be operated upon, the wrench may be turned by the handle A in either direction and the limit of motion having been reached, a retractive movement of the user's thumb or fingers in contact with the knurled thumb or finger-piece e^2 of the wedge E withdraws the support of the said wedge from the pivoted jaw D and at the same time increases the tension on the spring G which causes the pivoted jaw D to recede from the object situated between the jaws, thereby permitting the movement of the handle to be reversed independently of the object being operated upon; the limit of motion in this direction having been reached and the thumb or fingers removed from the thumb or finger-piece, the spring G again forces the wedge E between the rear face of the pivoted jaw D and the handle A, thereby forcing the jaw D again into proximity or contact with the object being operated upon and bringing all the parts again into position for a repetition of the movement. By virtue of this arrangement a reciprocating motion may be imparted to the wrench, the jaws being held in proximity or contact with the object being operated upon during either half of the stroke, as the user determines. The wrench therefore may be used in the manner of a ratchet wrench in either direction, without removing it from the object being operated upon.

It is to be understood that in any future interpretation of the scope of the present invention the same is in no sense to be limited to any special features of construction herein disclosed except such as may be specifically included in the hereto appended claims, since it is obvious that slight changes may be made therein without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a wrench, a relatively movable jaw, coöperating with another jaw, pivoted to a handle or housing having projecting lugs at the end adjacent to the said jaw, in combination with a wedge, provided with a thumb or finger piece and supported by and movable upon the said handle; the said wedge being adapted to enter the space between the said pivoted jaw and the handle and thereby cause the free end of the said pivoted jaw to move away from the said handle; the said wedge being formed with a face parallel to its line of motion and contiguous to its inclined face; said inclined face of the said wedge, impinging, when the parts are at rest, against a corresponding face of the pivoted jaw and thereby locking the said pivoted jaw against the object being operated upon.

2. In a wrench, a jaw, provided with two lugs, pivotally associated with a handle or housing also having projecting lugs at the end adjacent to the said pivoted jaw, and a wedge provided with a thumb or finger piece and supported by and movable upon the said handle, the said wedge being adapted to enter the space between the said pivoted jaw and the said handle and thereby cause the free end of the said pivoted jaw to move away from the said handle, and also provided with a face parallel to its line of motion and contiguous to its inclined face, said inclined face of the said wedge, impinging, when the parts are at rest, against a corresponding face of the pivoted jaw and thereby locking the said jaw securely; in combination with a jaw with a shank axially movable with reference to the handle.

3. In a wrench, a jaw, provided with two lugs, pivoted to a handle or housing, a wedge provided with a thumb or finger piece and supported by and movable upon the said handle, the said wedge being adapted to enter the space between the said pivoted jaw and the said handle and thereby cause the free end of the said pivoted jaw to move away from the said handle; the said wedge being formed with a face parallel to its line of motion and contiguous to its inclined face; said inclined face of the said wedge, impinging, when the parts are at rest, against a corresponding face of the pivoted jaw and thereby securely locking the said jaw in place; said wedge also being provided with a lug or pin to which a spring is attached; and a spring attached to the said wedge and to the said pivoted jaw in such a manner as to cause the wedge to enter the space between the handle and the pivoted jaw and thereby acuse the free end of the said jaw to move

away from the handle and bring the said pivoted jaw into contact or proximity with the object being operated upon; in combination with a jaw with a shank axially movable with reference to the handle.

4. In a wrench, a jaw, provided with two lugs, pivoted to a handle or housing, a wedge provided with a thumb or finger piece and supported by and movable upon said handle; the said wedge being adapted to enter the space between the said pivoted jaw and the said handle and thereby cause the free end of the said pivoted jaw to move away from the said handle and also being so shaped with reference to the pivoted jaw, that when the parts are at rest, the said pivoted jaw is securely locked in position; said wedge, further, being provided with a lug to which a spring is attached; and a spring attached to the said wedge and to the said pivoted jaw in such a manner as to force the said wedge into the space between the handle and the rear face of the pivoted jaw, thereby causing the free end of the pivoted jaw to move away from the handle and into contact or proximity with the object being operated upon; and a jaw with a shank supported by and axially movable with reference to the handle, in combination with means for reciprocating the axially movable jaw-bearing shank and thereby opening or closing the two jaws with reference to each other.

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Witnesses:
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