T. LONGDIN.

STUD WRENCH.

APPLICATION FILED NOV. 22, 1907.

909,101. Patented Jan. 5, 1909.

Fig. 2.

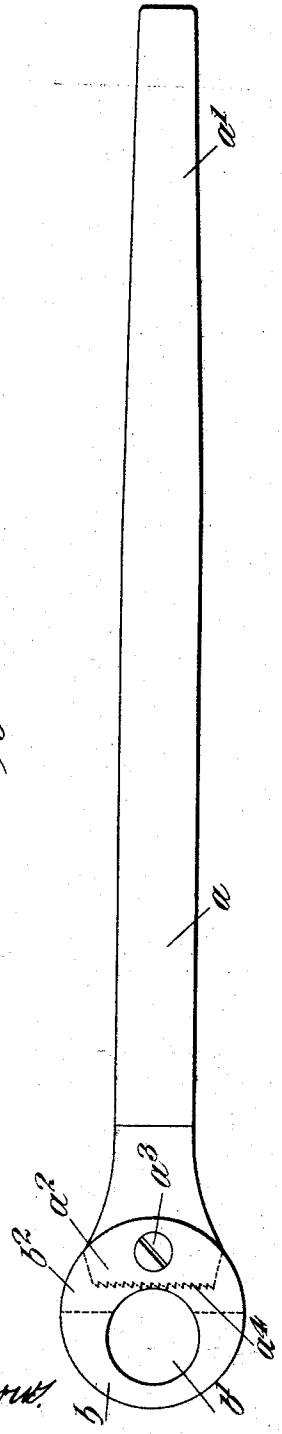
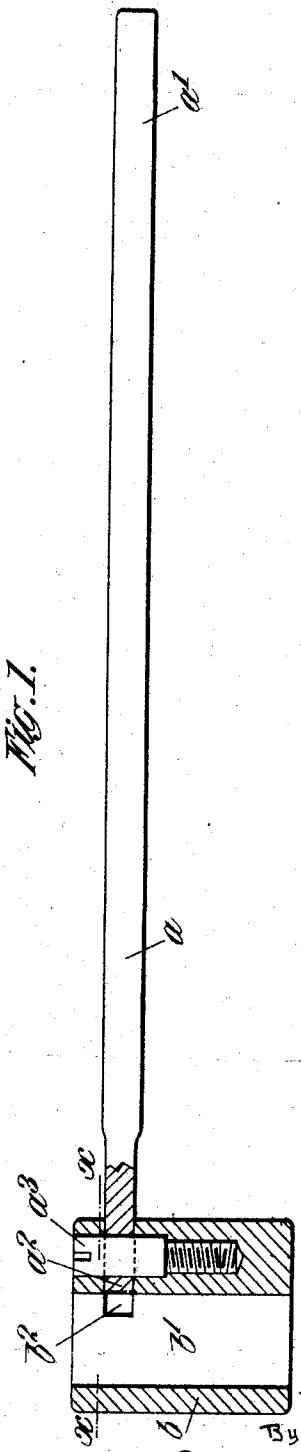


Fig. 1.



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UNITED STATES PATENT OFFICE.

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STUD-WRENCH.

No. 909,101. Specification of Letters Patent. Patented Jan. 5, 1909.

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To all whom it may concern:

Be it known that I, THOMAS LONGDIN, a subject of the King of Great Britain, residing at Mount House, Ruabon, Denbigh, England, have invented a certain new and useful Improved Stud-Wrench, of which the following is a specification.

This invention relates to an improved appliance for use in securing or removing studs employed in connection with machinery and other structures; the object being to provide a device of simple and effective character and consequently capable of economical production or manufacture.

The appliance or device according to this invention consists of a lever pivotally mounted in a block having a hole or aperture for the reception of the stud to be operated upon; the inner end of the lever being adapted to move in a path at right angles to the center line of the aforesaid hole or aperture and to grip the stud embraced by the block. The end of the lever adapted to grip the stud may be fan-shaped and provided with teeth or serrations on its edge. The lever may be adapted to perform a rotary movement about its pivot or a to-and-fro movement similar to that of a ratchet brace.

In order that the said invention may be clearly understood and readily carried into effect, I will proceed to describe the same with reference to the accompanying drawings, in which:—

Figure 1 is a view illustrating one of the improved appliances, the block and parts therein being shown in section. Fig. 2 is a plan with the block in section, the latter being taken along the line x—x in Fig. 1.

a is a lever which may be of suitable dimensions and which comprises a handle portion a' and an operating or gripping portion a^2. The lever is pivoted to the block b by means of a screw pin a^3. The portion a^2 of the lever a is splayed or fan-shaped and arranged in such a manner that when the lever is turned about its pivot the said portion a^2 enters or traverses a hole or aperture b' formed or provided in the block b, a slot b^2 in the latter allowing of the aforesaid movement of the splayed portion a^2. As will be seen on referring to the drawing the slot b^2 cuts into the hole or aperture b' and thus enables the lateral portions of the operating end a^2 of the lever to work across or cut into the said hole or aperture b'. The part a^2 may be formed or provided with teeth or serrations a^4 whereby a better grip of the stud inclosed by the block b is obtained. The fan-shaped end of the lever is formed in such a manner that the middle portion of its serrated edge is nearer to the fulcrum than any other part thereof, this distance rapidly increasing right or left towards either extremity of the fan-shaped end.

The lever is so mounted in the block that, in its middle position, the serrated edge of the lever will be quite clear of the hole or aperture b', in which position the block can be placed on the stud. A movement of the lever either to the right hand or to the left hand causes the serrated edge to project into the hole or aperture and effect a grip of the stud by binding against the same by means of the teeth and sides of the hole or aperture in the block. Any further movement of the lever in the same direction results in the turning of the stud, with the effect that the harder the stud is to turn the tighter will be the grip of the tool thereon. Obviously the stud may be extracted by simply turning the lever in the opposite direction to that which was required for screwing the stud home. Under certain circumstances the movement of the lever may be continuous in a circular direction, but as other studs or obstructions will ordinarily interfere with this mode of working the motion of the lever may be "to-and-fro", similar in nature to that of an ordinary ratchet brace.

What I claim and desire to secure by Letters Patent of the United States is:—

A tool of the class described comprising a head formed with a bore extending therethrough and having a slot on one side, and a jaw pivoted in the slot and provided with a handle, the said jaw having a straight serrated working edge which extends tangentially with respect to the bore of the head, and at right angles to a line drawn through the axes of the pivot of the jaw and the bore when the handle is in line of extent with the

said line passing through the axes and being arranged to transect the bore when the handle is swung to a position to either side of said line, whereby the said straight working edge of the jaw will have gripping engagement with the element received in the bore when the handle is so swung, but will be out of gripping engagement with the element when the handle is in the first mentioned position.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS LONGDIN.

Witnesses:

CHARLES MORRIS,

THOMAS STURGEON.