

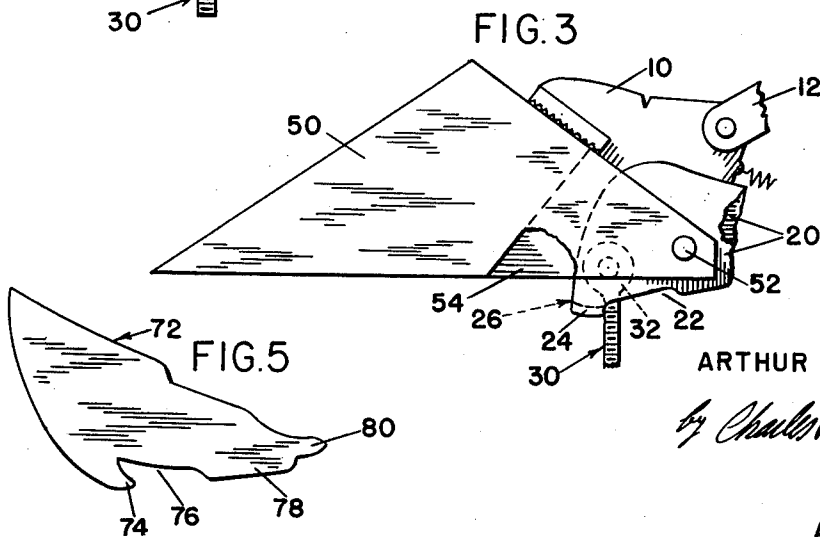
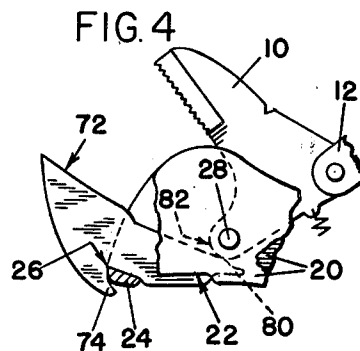
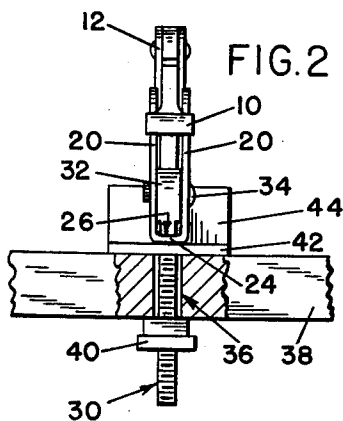
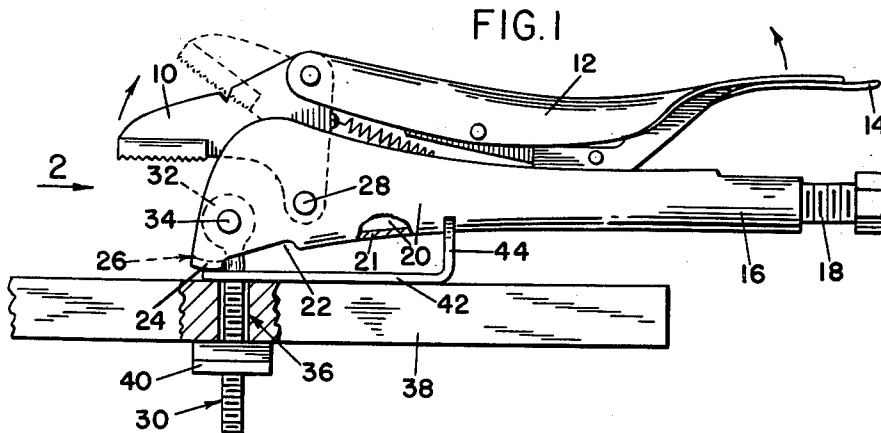
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A. K. HADDAD
QUICK-ACTING VICE GRIPS

3,124,347

Filed April 3, 1961

2 Sheets-Sheet 1



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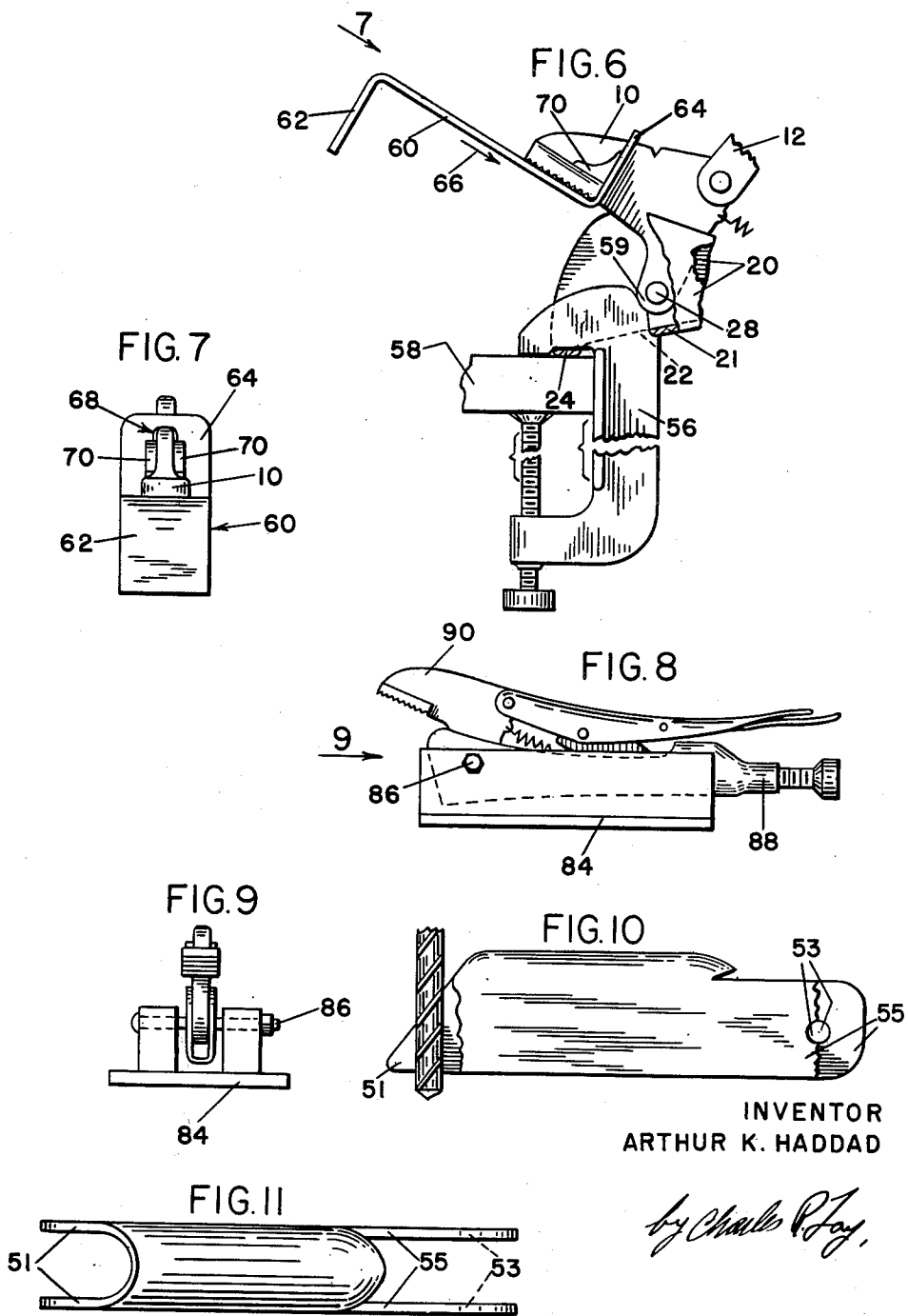
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QUICK-ACTING VICE GRIPS

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9 Claims. (Cl. 269-91)

This invention relates to improvements in quick-acting vice grips, and the principal object of the invention resides in the provision of attachments to and modifications of parts of adjustable toggle plier type wrenches to render the same much more versatile in use and application, with particular emphasis applied to the problem of quickly clamping a succession of pieces to a worktable such as for instance with drill presses, for engravers, and for anyone who must work on pieces which must be clamped to a worktable or bench.

Other objects of the invention include the provision of a new and improved vice grip having a single jaw and including means by which it may be utilized as a hold-down device at the edge of a working surface as for instance by the application of a C-clamp or similar clamp; the provision of means whereby the tool may be used as a hold-down or grip within the confines of the working surface of the worktable by the application of a fastener such as a bolt inserted through a hole in the table and held by a nut or in conjunction with the usual T-slot as on a milling machine table; the provision of a special new and improved removable jaw in addition to and for cooperation with the said single jaw, such removable jaw taking the place of the conventional lower jaw of the tool when the device is not to be used as a hold-down on a table but is to be used in the normal manner.

The invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly set forth in the appended claims.

Reference is to be had to the accompanying drawings, in which

FIG. 1 is a view in side elevation, part being in section, illustrating the invention as applied to a worktable;

FIG. 2 is a view looking in the direction of arrow 2 in FIG. 1 with part in section;

FIG. 3 illustrates an extension means for the upper jaw;

FIG. 4 illustrates the removable lower jaw in position;

FIG. 5 is a view in elevation of the new and improved removable lower jaw;

FIG. 6 is a view in side elevation illustrating an alternative form of extension for the upper jaw;

FIG. 7 is a view looking in the direction of arrow 7 in FIG. 6;

FIG. 8 is a view of a modification for use as a hold-down with magnetic chucks;

FIG. 9 is a view in elevation looking in the direction of arrow 9 in FIG. 8;

FIG. 10 is a side elevation of a supplementary jaw; and

FIG. 11 is a top plan view thereof.

This invention contemplates basically the use of an adjustable clamping toggle type of plier or wrench as for instance shown in U.S. Patent No. 2,514,130 and other patents. This tool is well known in the art.

Referring now to FIG. 1, the lower jaw member of the wrench has been removed but the upper jaw at 10 is the same as in the well known type of adjustable wrench referred to, and is actuated as for instance by a handle or lever 12 having a release lever 14, the adjustment handle or lever 16 having the well known screw 18 by which the jaw 10 is adjusted with relation to the now removed lower jaw.

The lever 16 extends forwardly into a bifurcated relation comprising a pair of side plates 20, these being spaced

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apart and connected by a lower web 21 portion also as well known.

These walls are cut away in this invention at the web 21, leaving an elongated rectangular aperture 22 at the web part of the member 16 adjacent the forward end thereof, and this leaves a web portion at 24 extending between plates 20, 20, this web portion terminating as for instance in a relatively sharpened edge 26 from which extends an opening or slot between plates 20, 20 to accommodate the wrench jaws. Jaw 10 is pivoted to the plates 20, 20 as for instance on the pin 28.

There is provided an eye-bolt or the like generally indicated at 30. It has an eye at 32 and is pivoted between the two plates 20, 20 at 34. It extends through the opening 22 and may extend therefrom through a hole or the like 36 in a worktable 38. A nut 40 is provided and this nut is shown in FIG. 2 preferably as in the form of a T, by which means it may be utilized with respect to the usual T slots found in a milling machine table. In the form of the invention illustrated in FIG. 1, the eye-bolt is shown as bent slightly in order to accommodate itself to a pivot point at 34 and still leave the web part 24 for a purpose to be hereinafter described.

Also in order to maintain the part 16 in a more or less parallel relationship with respect to the top surface of the table 38, there is provided a plate 42 which is apertured to receive bolt 30 and at its rear end has an upstanding flange 44 which may be cut away centrally thereof so as to accommodate the part 16 as in a cradle.

The entire device may be pivoted about the pivot 34 if desired but in any event it will be seen that after adjustment by screw 18 parts on the table may be quickly and very conveniently clamped and unclamped thereto by means of the jaw 10.

As shown in FIG. 3, a block of any size, shape or extent which is indicated by the reference numeral 50 may be pivoted as for instance at 52 to the side plates 20. The member 50 may be bifurcated as illustrated at 54 and and is actuated by the jaw 10, to clamp a piece to the table at a point remote from jaw 10.

The pivot 52 may be located where desired to increase or decrease leverage. If block 50 should be made of wood, it can be provided with holes to admit tools such as drills. Also (see FIGS. 10 and 11), this block may be made of sheet metal and bent to bifurcated shape, having projections 51 to accommodate a tool therebetween, and aligned holes 53 to accommodate pin 52, on rearwardly extending legs 55.

Another form of such an extension is illustrated in FIG. 6 wherein there is shown a C-clamp 56 which may project through the opening at 22 and forwardly between the plates 20, 20 so that the entire device may be clamped to the edge of a table which is indicated at 53 rather than within the table top area through the aperture 36 as shown in FIG. 1. The C-clamp may bear on part 24 and on the pivot part 59 of jaw 10 if desired, to better hold the clamp in place.

The jaw 10 in FIG. 6 may be provided with a quickly removable extension member 60 which may or may not have a downwardly turned flange 62 at the remote end thereof and in any event it has an apertured upwardly extending flange 64 which slips in the direction of the arrow 66 onto the jaw 10. The aperture in the flange 64 is shown at 68 in FIG. 7 and is shaped to accommodate the jaw 10. There are also a pair of spurs 70, 70, one at each side of the jaw member so as to hold the extension in position as will be clear to those skilled in the art.

FIGS. 4 and 5 illustrate the removable lower jaw member which is a single solid flat piece having a clamping edge at 72 and at the opposite edge thereof a rearwardly extending relatively sharp spur 74. Adjacent spur 74 there is a recess 76 and an outwardly projecting portion at

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78 which is relatively elongated. The removable jaw terminates rearwardly in another spur 80. These spurs are not always necessary and could be dispensed with if desired.

Referring to FIG. 4 it will be seen how this member is held removably in position with respect to the spaced plates 20, 20. The removable jaw is thrust spur 80 foremost through the front slot between the plates 20, 20, this being seen in FIG. 2. The spur 74 is accommodated at the sharp portion 26 of the web 24 and the elongated projection 78 extends down through the opening at 22, holding the parts in the position shown. In this form of the invention the device is used in the ordinary manner which is clear to those skilled in the art but if the removable jaw is desired to be separated, it is merely necessary to tap it in the region of the member at 74, 78, thus loosening it from its position as held in the wrench member 20, 20. It will be observed that the inner rounded end of jaw 10 indicated at 82 bears on the upper surface of the removable jaw near the spur 80 and aids in holding the same in the operative position shown.

Furthermore if the device is desired to be utilized to hold articles down to a magnetic chuck or the like, a steel base indicated at 84 may be utilized with a pivot pin 86 pivoting the entire wrench in position by means of the lower member 88 to which the upper jaw at 90 is attached in the conventional manner, the rest of the wrench being the same but with of course the lower jaw removed as before.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A hold-down device of the class described comprising a first handle member, a jaw pivoted thereto, a second handle member pivoted to said jaw, said first handle member including two spaced plates, means connecting the plates along certain edges thereof, an aperture formed in said connecting means, a fastener projecting through said aperture, a pivot for said fastener connecting said plates together, and means for securing said fastener and the first handle member to a support.

2. A toggle wrench comprising a pair of interpivoted handles, a clamping jaw pivoted between both of said handles and movable thereby between unclamping and clamping positions, means for mounting one of said handles in position on a support for said jaw to approach toward said support for clamping an object thereto upon proper manipulation of said handles, said means including a pivot member for said one handle, said pivot member being in turn mounted on the support.

3. The toggle wrench as recited in claim 2 wherein said pivot member is an eye-bolt having a nut.

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4. The toggle wrench as recited in claim 2 wherein said pivot member is an eye-bolt having a nut, said nut being in the form of a T.

5. The toggle wrench as recited in claim 2 including a C-clamp, the pivot member being clamped to the support thereby.

6. A hold-down device of the class described comprising a first handle member, a jaw pivoted thereto, a second handle member pivoted to said jaw, said first handle member including two spaced plates, a web connecting the plates along certain edges thereof, an aperture formed in said web, and a securing fastener projecting through said aperture to a point between the plates, means providing a pivot for said fastener, said pivot connecting said plates together, means for connecting said fastener to a support, an extension for said jaw, and means on the extension mounting the extension on the jaw.

7. A hold-down device as recited in claim 6 wherein said extension is removably mounted on said jaw and includes an elongated member, the means mounting the extension including a flange on the elongated member, and an aperture in the flange shaped to the jaw.

8. A hold-down device as recited in claim 6 wherein said extension is removably mounted on said jaw and includes an elongated member, a flange thereon, and an aperture in the flange shaped to the jaw, and spurs on said flange spaced from said elongated member and from each other to receive part of the jaw to prevent pivoting of the extension relative to the jaw.

9. A hold-down device of the class described comprising a first handle member, a jaw pivoted thereto, a second handle member pivoted to said jaw, said first handle member including two spaced plates, means connecting the plates along certain edges thereof, an aperture formed in said connecting means, a fastener projecting through said aperture, a pivot for said fastener connecting said plates together, and means for securing said fastener and the first handle member to a support, an extension jaw pivotally mounted on the plates in line with and actuated by the first-named jaw to clamp an object to the support.

References Cited in the file of this patent

UNITED STATES PATENTS

444,778	Greenamyre	Jan. 13, 1891
1,142,617	Patterson	Jan. 8, 1915
1,231,131	Colson	June 26, 1917
2,577,029	Moorehead	Dec. 4, 1951
2,764,195	Heimes	Sept. 25, 1956
2,766,650	Capra	Oct. 16, 1956
2,777,347	Sendoykas	Jan. 15, 1957