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Improvements in or relating to vises

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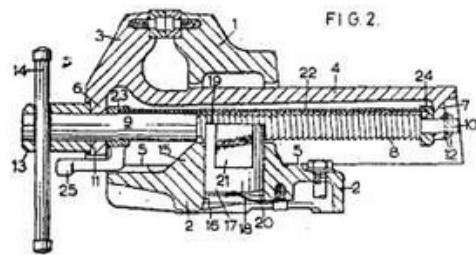
Abstract of GB1064885 (A)

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1,064,885. Vices. J. PARKINSON & SON (SHIPLEY) Ltd. Dec. 16, 1965 [March 17, 1965], No. 11282/65. Heading B3B. In a quick action vice having a fixed jaw 1 and a movable jaw 3 operable by a screw 8 carried by the movable jaw, in engagement with a half nut 19 capable of downward displacement from its screw engaging position and having a channel-shaped operating bar 22 extending along the screw for causing displacement of the half nut to free the screw and operable by part rotary movement, the half nut is carried by a vertically movable slide block 17 which is spring loaded to its raised position by a leaf spring 18 pressing against its bottom face. The bar 22 has end collars 23, 24 pivotally mounted on the forward and rear plane ends 9, 10 of the screw, the front collar 23 having a projecting lever 25 which is moved clockwise or anti-clockwise to rock the bar.



Patent Application

PATENT SPECIFICATION

DRAWINGS ATTACHED 1,064,885 Inventor: William Alexander Armitstead.

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No 11282/65.

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Improvements in or relating to vises.

COMPLETE SPECIFICATION

We, J PARKINSON & SON (SHIPLEY) LIMITED, of P O Box No 28, Shipley, in the County of York, a

British Company, do hereby declare the invention, for which we pray that a Patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement: -

This invention relates to engineers and woodworkers bench vises, adjustable clamps or the like (hereinafter termed "vises"), having a screw operated jaw movable in relation to a stationary jaw.

Vises usually have a so-called fixed jaw with a movable jaw furnished with a slide to work in guide means provided by the body of the fixed jaw. Operation of the movable jaw is by means of a long screw mounted in bearings provided by the slide of the movable jaw. In some cases operation of the jaw is entirely by means of a screw passing through a fixed nut, but it is known to provide a quick release action so that the movable jaw can be pushed or pulled in relation to the fixed jaw.

The main object of the present invention is to provide an improved form of quick action vise.

Accordingly there is provided a vise having a fixed jaw and a movable jaw operable by a screw carried by the movable jaw in engagement with a half-nut capable of downward displacement from its screw engaged position, and an operating element extending along the screw for causing said displacement to free the jaw and operable by a part rotary movement, characterised in said operating element comprising an inverted channel shaped bar pivotally mounted at its ends on the screw, and a half-nut forming part of, or being carried by, a vertically movable slide block which is spring loaded to its raised position by an underneath leaf spring, and means for rocking the bar about the screw axis to depress the half-nut and its spring loaded carrier block.

The invention will now be more particularly described with reference to the accompanying drawings, in which: Fig 1 is a front view of an engineers vise; 50 Fig 2 is a longitudinal sectional elevation of the vise; Fig 3 is a detail plan view showing the vise operating screw and half-nut; Fig 4 is a plan view of a woodworkers 55 vise; and 1 Fig 5 is a sectional elevation on line A-A of Fig 4.

In a particular embodiment of this invention, shown in Figs 1 to 3, a bench vise is 60 constructed comprising a fixed jaw 1 upstanding from a body 2 by means of which the vise can be mounted on a bench or other structure. A movable jaw 3 is associated with the fixed jaw and is provided with an 65 extension slide 4 to be movable in guides 5 provided by the said body. The slide 4 is of inverted channel formation and provides a bearing 6 in its front wall and a bearing 7 in its rear wall for the mounting of an 70 operating screw 8. This screw has plain ends 9, 10 for the bearings and is constrained by a shoulder 11 externally of the front slide wall and by a pin and washer 12 or the like on the rear end of the screw. The external 75 shoulder 11 is the inner face of a screw operating collar 13 through which the usual slidable tommy bar handle 14 is mounted.

The lower part of the fixed jaw body is internally built-up at least forwardly at 15 80 of a vertical opening 16 in which is mounted a slidable cylindrical (or other shaped) carrier block 17. This block is normally held in its raised position by a leaf spring 18 pressing against its bottom face. The top of this 85 block either forms a half-nut 19 (or has such a half-nut secured thereto) to engage under the operating screw 8 of the movable jaw 3.

Thus rotation of the screw will cause the movable jaw to move in relation to the fixed 90 Lt 1.o 2 1,064,885 jaw and the-aforesaid built-up body part 15 prising an, inverted channel shaped bar 55 provides a forwardly disposed reaction face pivotally mounted at its ends on the screw, for the

carrier block 17 The block 17 may and a, half-nut forming part of, or being be solid or hollow with the-bottom face partly carried by, a vertically movable slide block tapered-off rearwardly at 2; tqc e-r teleaf which is spring loaded to its raised position spring 18 when the block is depressed: Also by an underneath leaf spring, and means for 60 the block has two side flats 21 for clearance rocking the bar about the screw axis to, purposes depress & h half-nut and its spring loaded To make the vise capable of quick action, carrier block.

a channel shaped operating base 2 a-: is: 2 Vise according to claim I, wherein the mounted inverted over the operating screw X half-nut carrier slide block is at least sub 65 8 and supported thereon The bar has: en 4 c sasntialy of cylindrical shape with a subcollars 23, 24 mounted on the forward and stabially flat: b Qttyn face engage 4 d by -the rear plain ends 9, 10 of the screw adjacent free end of a leaf spring its bearings 6, 7 and the: front collar 23 -has: 3 Vise according to claim 1 or 2, wherein -a forwardly projecting lever 25 lying adjacent the carrier slide block is hollow 70the screw operating bar 14 This lever passes 4 Vise according-to claim 1 or 2, wherein under (or through an opening in) the slidable the carrier slide block has two side flats for jaw 3 clearance purposes.

For a woodworkers vise, Figs 4 and -5, S Vise according -to claim 15 wherein the this can be of generally known form using fixed-jaw body is built-up at least in advance 75 two parallel guide rods 26 projecting rear of' the vertical opening in which the carrier wardly from the movable jaw 27-and slidable slide block is mounted to provide a reaction in bearings in the body 28 of -the fixed jaw face A guide rod retaining plate 29 Jis mounted rd Vise according to claim 1, wherein the on the rear ends of the rods and provides a operating bar-has a-forward projecting finger 80 central bearing for the rear end b-1 of the for passing under or through the front mov operating screw 8 which is-,held-by a pin and able jaw 4 to lie adjacent the screw operating washer 12 or other means Here again, a tommy bar.

half-nut 19 and carrier block 17 is provided 7 An engineers vise constructed and with an inverted channel shaped operating adapted to-operate substantially as described 85 bar 22 mounted on the screw 8 The operat with reference to -Figs I to 3 of the accompanying lever 25 passes under the movable jaw panying drawing -27 8 A woodworkers vise constructed and With both -of the above vises, when it is adapted to operate substantially as described desired to make a quick adjustment of jaw with reference to Figs 4 and 5 of the accom 90 opening, the lever 25 of the operating bar panying drawings =22 is moved in a clockwise or anti-clockwise direction to rock the bar about the screw axis The edge of the bar engages the half, nut 19 (or its carrier block) and depresses it, to free the half-nut from the screw 8 so that the movable jaw can be pulled out or pushed –

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A vise having a fixed jaw and a moveable jaw operable by a screw carried by the movable jaw in engagement with a half-nut capable of downward displacement from its screw engaged p Qsition and an operating element extending along the screw for cans ing said displacement to free the jaw and operable by a part rotary movement, characterised in said operating element

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