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COMMONWEALTH OF AUSTRALIA

PATENT SPECIFICATION

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Cognate with 21,404/62.		

Complete Specification

Entitled IMPROVEMENTS IN VICES AND BASES FOR VICES.

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Convention Priority

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Related Art:	243,292(55,454/59)	72.1.
	219,985(26,942/57)	72.1; 80.4.
	13,319/23.	72.1.

The following statement is a full description of this invention, including the best method of performing it known to us :

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This invention relates to vices and bases for vices.

One standard type of vice comprises two main parts, one of which is secured to a table or bench and the other of which is slidably mounted in the first part.

The first part comprises a floor or base and an integral or attached inverted U housing. The housing carries an upper transverse gripping jaw. The second part comprises an elongated inverted U Section slide which moves in the housing while resting on the base and has an abutment block at its outer end with a second upper transverse gripping jaw adapted, in one extreme position of the slide, to engage the first gripping jaw.

A nut is mounted on the base by means of a spigot on the nut base located in a hole in the base. This prevents displacement of the nut along the base. The slide surrounds the nut on three sides.

The slide is traversed along the housing by rotating a screw passed through a hole in the abutment block and through the screwed hole in the nut.

This arrangement has one marked disadvantage. It is that, when great force is applied to the screw and to the nut in order to grip an object tightly between the gripping jaws, heavy bending moments and shearing forces are applied to the nut and to its spigot.

The object of the invention is to provide a vice base giving greater support to the nut and spreading the load on the nut over a larger area.

In one form the invention is a vice base including a floor, spaced upright side walls substantially parallel to each other and extending in the direction of traverse of the slide and secured along their lower edges to the floor and a nut mounted between the side walls so that

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an axial load applied to the nut is transferred to the side walls and thence to the floor.

Two preferred forms of the invention are illustrated in the accompanying drawings in which:-

5 Fig. 1 is an exploded perspective view of a first form of the vice with parts of the housing cut away to reveal the interior,

Fig. 2 is a side elevation in half section of the assembled vice,

10 Fig. 3 is a perspective view of the stationary portion only of a second preferred form of the vice, and

Fig. 4 is a side elevation half section of the portion of the vice shown in Fig. 3.

15 In the first preferred form of the invention the base 5 is a flat plate 6 with an integral shallow peripheral flange 7.

The plate 6 is somewhat Tee shaped in plan, the width of the Tee head 8 being exaggerated.

20 The enclosure walls 9 are mounted along the Tee stem centre line with an open end 10 of the enclosure towards the Tee head 8.

The base 5 and enclosure walls 9 are pressed from steel plate. The Tee head 8 has holes 11 formed through it to receive holding down bolts 12.

25 The nut 13 is a steel block fitting closely between the side walls 9 and against the end wall 14 and held by a spigot 15 passing through a hole 16 in the base plate 6.

30 The lower edges of the enclosure walls 9 are welded to the base 5.

The standard inverted U housing 17 encloses the side walls with sufficient spacing to allow the slide 18 to move between the outside of the enclosure walls 9 and the

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inside 19 of the housing 17. The housing 17 is welded to the base 5.

The vice screw 20 passes through a hole 21 in the enclosure end wall 14 and is screwed through the nut hole 22.

As an alternative to the spigot 15 in the floor hole 16, the spigot may be dispensed with and the nut located with a close fit between the wall 14 and a cross-pin passing through registering holes in the walls 9.

In the second preferred form of the invention shown in Figs. 3 and 4 an inverted U shaped enclosure 23 is used with side walls 24, welded to a flat plate base 25, and an integral horizontal roof plate 26. The nut 27 is an approximately cubical block with a tapped hole 28. Square apertures 29 are formed on a common longitudinal axis through the side walls 24, and the nut 27 is dimensioned so that it is a close sliding fit in said apertures.

A slide similar to that shown in Figs. 1 and 2 fits over the enclosure walls 24 and prevents the nut 27 from being dislodged in a lateral direction and a vice screw (not shown) engages the nut hole 28 in a similar manner to that shown in Figs. 1 and 2.

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The claims defining the invention are as follows:—

1. A vice base including a floor, spaced upright side walls substantially parallel to each other and extending in the direction of traverse of the slide and secured along their lower edges to the floor and a nut mounted between the side walls so that an axial load applied to the nut is transferred to the side walls and thence to the floor. (2nd April, 1962)
2. A vice base as in Claim 1 wherein the side walls are joined by a cross wall at the end adjacent to the slide and the nut is located against the inside of the cross wall. (2nd April, 1962)
3. A vice base as in Claim 2 wherein there is a spigot on the nut located in a hole in the floor. (2nd April, 1962)
4. A vice base as in Claim 1 wherein registering holes are formed in the side walls and the nut is shaped and dimensioned to fit closely in the holes and to span between the side walls. (24th August, 1962)
5. A vice base substantially as described in the specification and shown in Figs. 1 and 2 of the drawings. (2nd April, 1962)
6. A vice base substantially as described in the specification and shown in Figs. 3 and 4 of the drawings. (24th August, 1962)

DATED this Twentieth day of March, 1963

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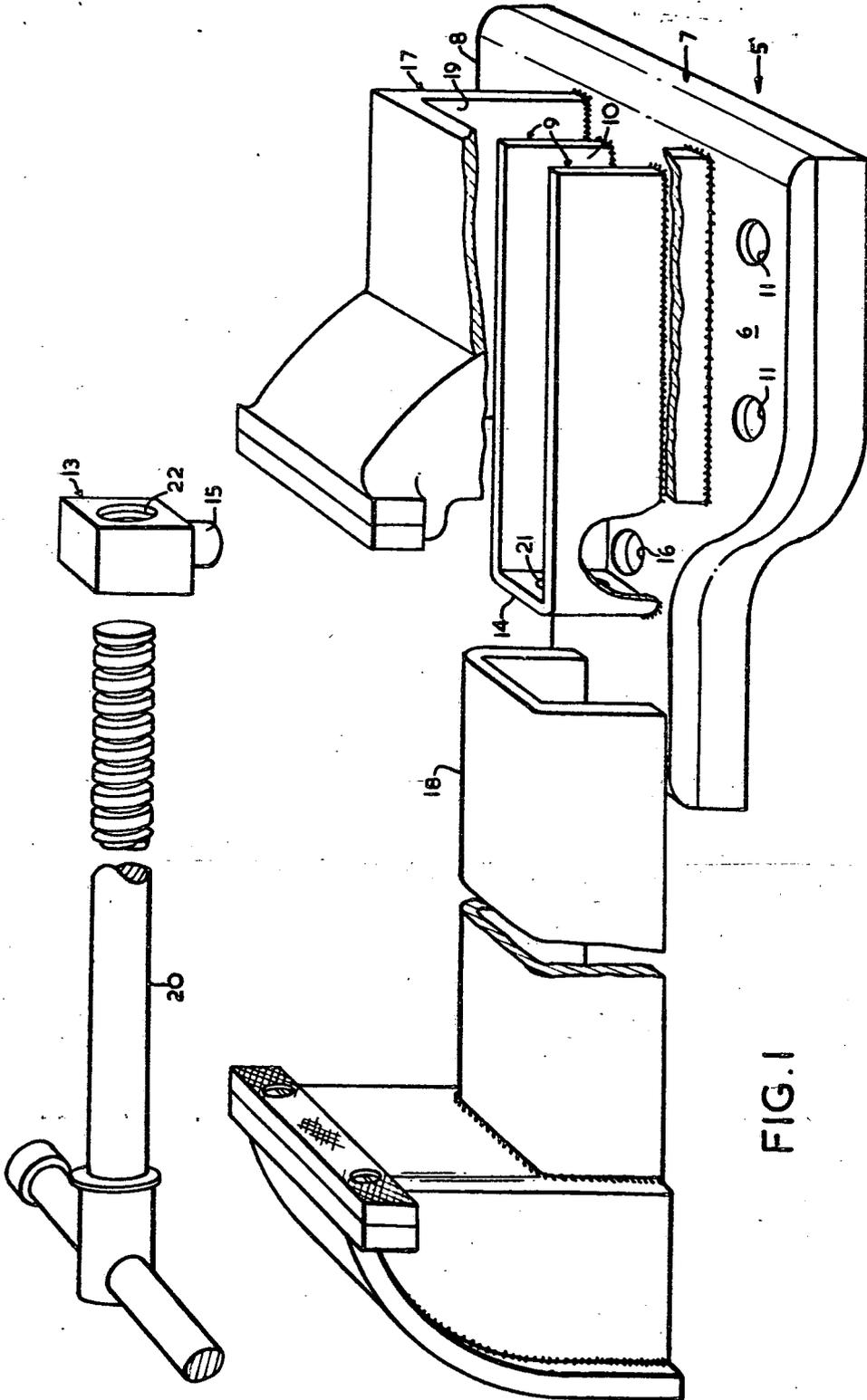


FIG. 1

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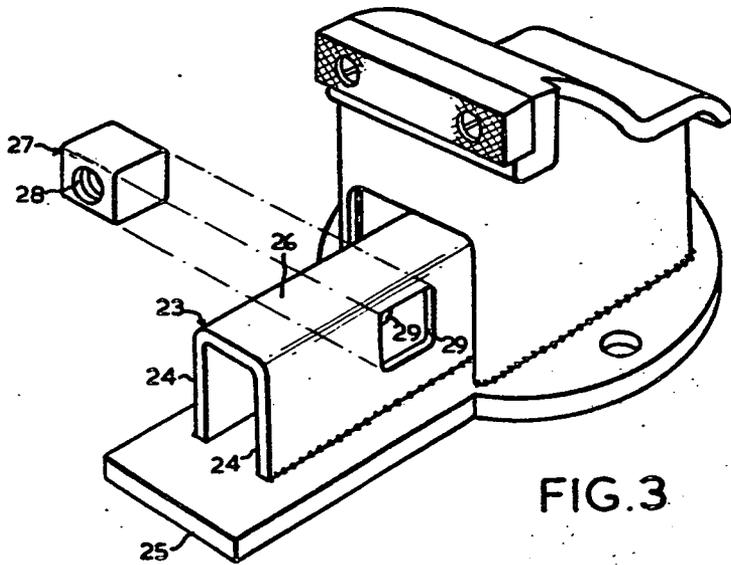


FIG. 3

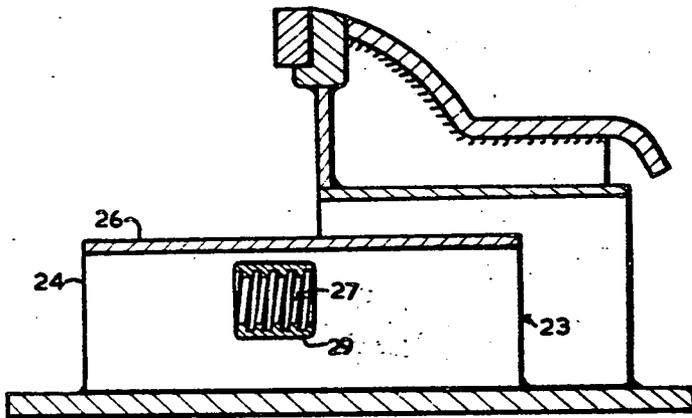


FIG. 4