

PATENT SPECIFICATION



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PROVISIONAL SPECIFICATION.

Improvements in Bench Vices.

I, JAMES HENRY JERRIM, British subject, of The Oaklands, Bromsgrove, do hereby, declare the nature of this invention to be as follows:—

5. This invention has reference to a bench vice, and has for its object to provide an improved construction in which one of the jaws is divided into a pair of members having each a gripping face, and being 10 pivoted so that the faces of the said members may be set at various angles relatively to each other and to the other jaw, to enable objects of an irregular shape to be efficiently gripped.

15 A well known type of bench vice consists of a fixed and a movable jaw. The fixed jaw comprises an attachment plate carrying a rectangular box like portion or casing at one extremity of which is 20 mounted the fixed jaw.

The movable jaw comprises a base member or sliding bar of substantially rectangular shape adapted to slidably engage the box part or casing aforesaid.

25 This member is adjusted therein by any suitable means such as a screw rod or the like and carries at one extremity the second jaw of the vice which is adapted to be closed against the former jaw or 30 fixed jaw to grip objects placed between them.

With my invention in which I form one of the jaws aforesaid into two members, a spherical or other irregular shaped 35 object may be securely gripped between the divided jaw and the fixed jaw, without the possibility of sliding out, the members of the divided jaw being set at an angle to each other to conform to the 40 general outline of the object.

In a preferred embodiment of construction, I divide the movable jaw into a pair of segmental or like members,

[Price 1/-]

capable of independent pivotal movement, so that they may be set to form an angular 45 jaw.

Accordingly the movable jaw consists of a base member or sliding bar having at one extremity, an upstanding body portion which supports the pivotal members 50 of the said jaw. This body portion is suitably formed midway of its height, with a pair of internal bearings adapted to receive the shanks of the pivotal jaws. These bearings are suitably formed in a 55 horizontal or like web member inside the casting, which may advantageously be the prolongation of the top part of the sliding bar and extends from one side of the body to the other. The upper part of 60 the body is also formed with a pair of semi circular portions for giving an additional bearing to the pivotal jaws, and an abutment when the jaw is under 65 strain.

The pivotal jaws comprise a pair of cylindrical members having their lower 70 extremity suitably reduced to engage the first bearings aforesaid. The central parts of the said jaws are of larger diameter, and afford a shoulder bearing for resting on the horizontal bearing member, and said part is adapted to engage the 75 semi-circular bearing portion before set forth.

These central portions are recessed on one side and carry the jaws proper. The 80 jaws are formed with a semi-circular overhanging portion in slidable contact with the upper part of the body aforesaid, and are provided with a gripping face. The gripping face of each jaw is preferably secured by screws across the straight 85 part of the segmental jaw, and supported by a small ledge projecting from the central recessed portion. The pivotal

jaws may be secured to the body by any suitable means such as by nuts engaging a screwed portion of the lower extremity below the horizontal bearing member, or
 5 if desired a spring ring may engage into a peripheral semi-circular groove around the extremity of the said pivot to retain same against removal.

If desired means may be provided for
 10 locking the pivotal jaws in any adjusted position, either independently or simultaneously. For this purpose, a pair of set pins may be disposed in the sides of the body and adapted to engage the periphery of the pivot of the jaw.
 15

A simultaneous locking may be arranged by the provision of a pair of oppositely disposed wedge members adapted to be drawn together by a common bolt by the cooperation of a nut,
 20 or by the use of an oppositely threaded screw member, and spring means may be provided for normally tending to separate the wedge members out of engagement.

Dated this 23rd day of April, 1921. 25

For the Applicant,
 GEORGE BARKER & BRETTELL,
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 77, Colmore Row, Birmingham.

COMPLETE SPECIFICATION.

Improvements in Bench Vices.

30 I, JAMES HENRY JERRIM, British subject, of The Oaklands, Bromsgrove, Worcestershire, England, do hereby declare the nature of this invention and in what manner the same is to be per-
 35 formed, to be particularly described and ascertained in and by the following statement:—

This invention has reference to a bench vice, and has for its object to provide an
 40 improved construction of the type set forth in Patents 122,063 and 143,549, in which one of the jaws is divided into a pair of members having each a gripping face, and being pivoted so that the faces
 45 of the said members may be set at various angles relatively to each other and to the other jaw, to enable objects of an irregular shape to be efficiently gripped.

A well known bench vice consists of a
 50 fixed and a movable jaw, the fixed jaw comprises an attachment plate carrying a rectangular box like portion or casing, at one extremity of which is mounted the fixed jaw. The movable jaw comprises a
 55 base member or sliding bar of substantially rectangular shape adapted to slidably engage the box part or casing aforesaid. This member is adjusted therein by any suitable known means such as a
 60 screw rod or the like and carries at one extremity the second jaw of the vice which is adapted to be closed against the former jaw or fixed jaw to grip objects placed between them.

65 My present invention consists in the combination with a bench vice of the type set forth above of a divided jaw of the kind set forth in my prior patents referred to.

In a preferred embodiment the jaw
 70 members are provided with shanks housed within one of the jaw bodies of the vice and these shanks are engaged either simultaneously or independently by
 75 clamping devices to lock them in adjusted position.

In the appended drawings, I have illustrated a preferred embodiment of the invention:—

Figure 1 is a perspective view of my
 80 improved bench vice.

Figure 2, is a vertical section through the left hand side pivotal jaw of Figure 1.

Figure 3, is a horizontal section through the locking means. 85

Figure 4, is a slightly modified construction of the locking means.

In the embodiment shown, the movable jaw *a* is divided into a pair of members
 90 *b* and *c*, which are advantageously of segmental form. These members are capable of independent pivotal movement, so that they may be set to form an angular jaw.

The movable jaw comprises a base
 95 member or sliding bar *d* having at the rear end, the upstanding body portion *a* forming the movable jaw and supporting the pivotal members thereof.

Midway of the height of said body *a*
 100 are disposed the internal bearings *e* adapted to receive the shanks *f* of the pivotal jaws. These bearings are suitably formed in a horizontal or like web member *g* inside the casting, which member
 105 is advantageously the prolongation of the top part of the sliding bar *d* and extends from one side of the body to the other.

The upper part of the body *a* is also

formed with a pair of semi-circular bearing portions *h* giving an additional bearing to the pivotal jaws, and an abutment to same, when they are under strain.

5 The pivotal jaws *b* and *c* are each provided with cylindrical shanks having the lower extremity *j* of reduced diameter to engage the bearings *e* aforesaid.

10 The central parts *k* of said shanks are of larger diameter and afford a shoulder *l* for supporting them above the bearing *e*; these portions engage the semi-circular bearings *h*.

15 These central portions *k* are recessed at *m* and carry the jaws *b* and *c*. The pivotal jaws are formed with a semi-circular overhanging part or collar *n* in slidable contact with the upper surface of the body *a*, and are provided with a gripping face *o* of hardened steel, or of soft metal, as desired. These gripping faces are preferably secured across the straight part of the segmental collar, by screws or the like *p*, and are supported by
20 a small ledge *q* above the recess of the central portions *k*.

The pivotal jaws *b* and *c* may be secured to the body by any suitable means such as nuts engaging a screwed portion on the extremity of the lower cylindrical part *j*. If desired a spring ring *r* may engage into a peripheral semi-circular groove *s* in the extremity aforesaid.

30 Means may be provided for locking the pivotal jaws in any adjusted position either independently as by the use of set pins *t* on each side of the body, engaging the lower cylindrical portion *j*, or these jaws may be locked simultaneously in
40 any adjusted position by the use of a pair of oppositely disposed wedge members *u* Figure 4 adapted to be drawn together by a bolt *v*, by the cooperation of a nut *w*, or by the use of a left and right hand
45 screw and screw threaded wedge members.

In the former construction a spring may be provided for normally disengag-

ing the wedge members from gripping position.

In the drawings at Figure 1 *x* is the ordinary traversing screw handle, and *y* is a quick adjustment device for the moving jaw *a*, also of usual construction and forming no part of my invention.

Having now particularly described and 55 ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An improved bench vice comprising 60 a fixed jaw and a movable jaw slidable within and through an attachment part of the fixed jaw characterised by the movable jaw consisting of a pair of pivotal members, capable of being locked 65 or clamped in adjusted position.

2. An improved bench vice as claimed in Claim 1, having pivotally adjustable jaw members wherein each jaw member comprises a segmental head with a gripping face, a reduced part-cylindrical body and a cylindrical shank, the body taking abutment against a part of the movable jaw.

3. An improved bench vice as claimed 75 in the preceding claims wherein the means for clamping the pivotal members of the movable jaw comprise a pair of wedge blocks slidably disposed in an opening at right angles to the axis of the jaw shanks, and a screw member for actuating said wedge blocks to lock the shanks of the jaws aforesaid and prevent rotation of same.

4. The improved bench vice, substantially as herein set forth, and as shown in the drawings.

Dated this 15th day of December, 1921.

For the Applicant,
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[This Drawing is a reproduction of the Original on a reduced scale.]

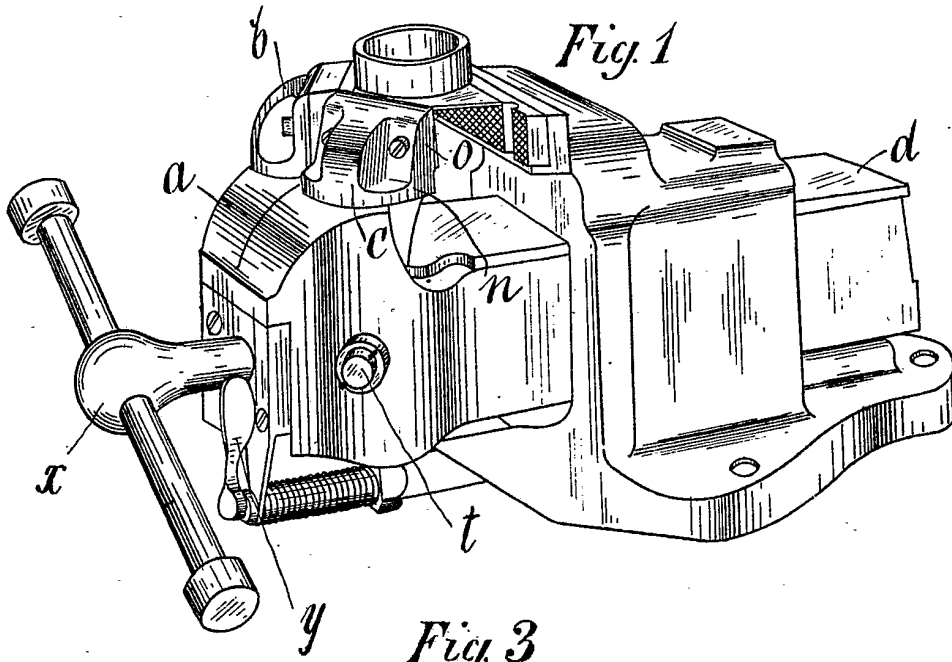


Fig. 3

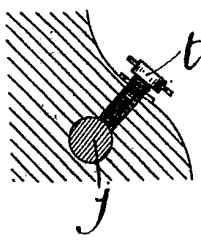


Fig. 2

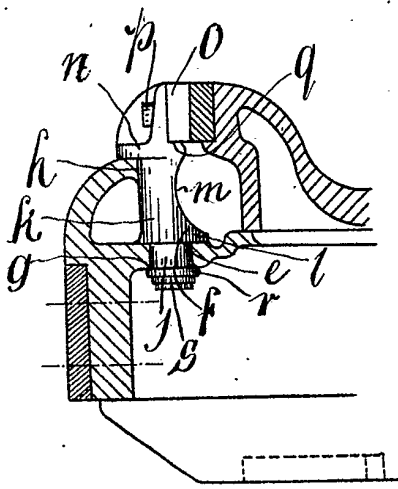


Fig. 4

