J. J. MOORE.

VISE.

APPLICATION FILED MAR. 11, 1920.

1,423,774.

Patented July 25, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

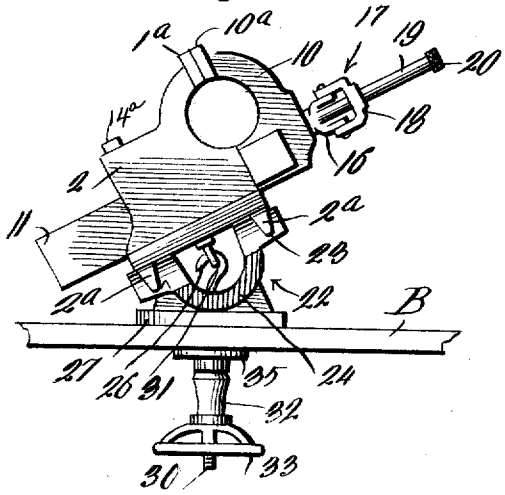


Fig. 3.

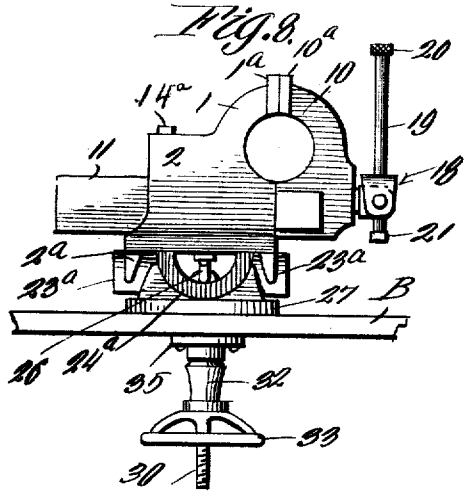
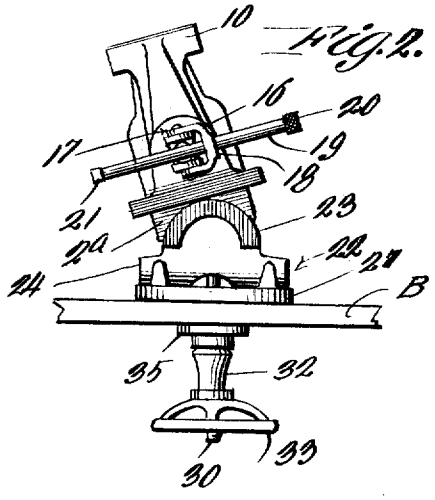


Fig. 2.



WITNESSES

Guy M. Spring

S. M. McColl.

Inventor

JOHN J. MOORE

By Richard B. Owen

Attorney

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2 SHEETS—SHEET 2.

Fig. 3.

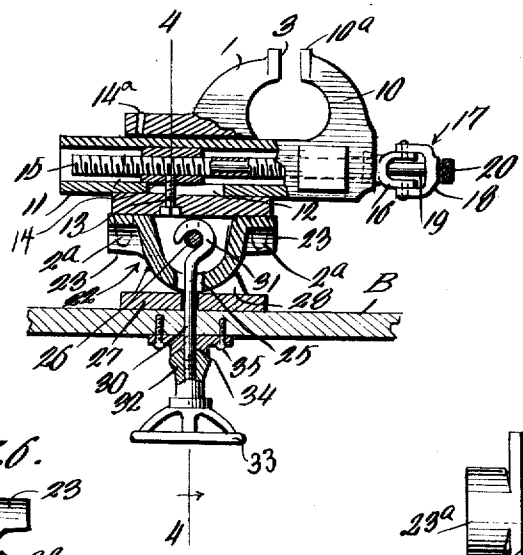


Fig. 6.

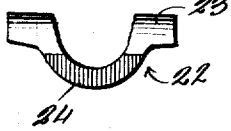


Fig. 9.

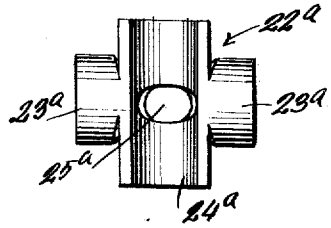


Fig. 4.

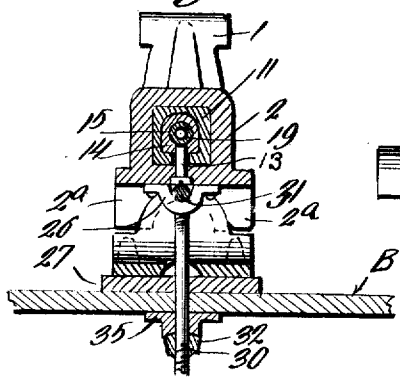


Fig. 7.

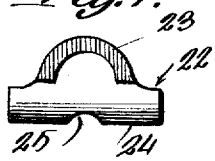
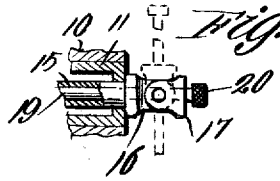


Fig. 10.



Fig. 5.



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JOHN J. MOORE

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Attorney

UNITED STATES PATENT OFFICE.

JOHN J. MOORE, OF BATAVIA, NEW YORK.

VISE.

1,423,774. Specification of Letters Patent. Patented July 25, 1922.

Application filed March 11, 1920. Serial No. 364,956.

To all whom it may concern:

Be it known that I, JOHN J. MOORE, a citizen of the United States, residing at Batavia, in the county of Genesee and State of New York, have invented certain new and useful Improvements in a Vise, of which the following is a specification.

This invention relates to a vise of the type known as screw parallel vises.

The object of the invention is to so construct a vise of this character that it can be readily adjusted for use in connection with any or all shapes for pattern work and which has interchangeable saddles so that it may be rigidly held against movement in any direction when desired.

Another object is to provide a vise the jaw adjusting screw of which is made hollow to receive the handle when not in use so that said handle may be stored out of the way and all danger of its being lost avoided.

Another object is to provide a vise with means whereby a variety of tools may be used in connection therewith, adapting the vise for use as an anvil.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 represents a side elevation of a vise constructed in accordance with this invention shown tilted toward one end.

Fig. 2 is an end elevation thereof with the vise shown tilted laterally.

Fig. 3 is a longitudinal section partly in elevation.

Fig. 4 is a transverse detail section.

Fig. 5 is a detail sectional view through one end of one jaw with the handle shown inserted in the hollow screw in view lines and withdrawn ready for use in dotted lines.

Fig. 6 is a side elevation of the saddle member employed in the construction above described.

Fig. 7 is an end view thereof.

Fig. 8 is a side elevation showing the vise mounted on the saddle whereby it is held rigidly against movement.

Fig. 9 is a top plan view of the saddle shown in Fig. 8; and

Fig. 10 is an end elevation thereof.

In the embodiment illustrated, in Figs. 1 to 7, the vise constituting this invention is shown equipped with an adjustable saddle to adapt the vise to be swung into different positions. The vise comprises jaws 1 and 10, one of which is adjustable toward and away from the other to provide for the clamping between them of the object to be held.

Jaw 1, which may be termed the fixed jaw, has a sleeve 2 extending in a plane at right angles to its gripping face 3 and in which sleeve 11 of jaw 10 is mounted to slide. This sleeve 11 is longer than sleeve 2 to provide comparatively large articles to be held between the gripping faces 3 and 10^a of the jaws. Sleeve 11 has a longitudinal slot 12 in its lower wall through which extends a screw 13 carried by sleeve 2. This screw 13 engages a block 14 mounted in sleeve 11 and holds said block stationary relative to sleeve 2.

A hollow screw threaded rod or shaft 15 extends into sleeve 11 and has threaded engagement with a bore extending through block 14. This rod has swivel connection with the outer end of jaw 10 so that when said rod is turned jaw 10 will be moved toward or away from jaw 1, according to the direction the rod is rotated. This rod 15 projects at one end beyond the outer face of jaw 10 and has a bifurcated head 16 with the furcations of which are pivotally connected the arms of a U-shaped clevis 17, the cross-bar 18 of which is apertured for the free passage of an operating handle or rod 19. This rod 19 slides through said cross-bar and is designed for operating the shaft 15 for adjusting jaw 10 in relation to jaw 1. This rod 19 has a knurled head 20 in one end and a stop 21 at its other end which prevents its being withdrawn from member 17, the stop 21 being of a size to slide freely in shaft 15. It will be obvious that when the handle 19 is to be used it will be withdrawn from the screw shaft 15 by grasping the head 20 and pulling it out until head 21 clears the outer end of the shaft 15. The clevis 17 may then

be swung into the position shown in 1, 2, and 8, so that the handle will be ready to turn shaft 15. When not in use the clevis 17 is swung into the position shown in Fig. 3 and the rod 19 is slid into shaft 15 out of the way.

The sleeve 2 of jaw 1 has curved ears 2^a which are adapted to fit over the convex surfaces of the semi-cylindrical arms 23 of the saddle 22 and which provides for the lateral adjustment of the vise relatively to the saddle.

This saddle 22 is constructed in the form of a Greek cross, (see Figs. 6, 7, 9 and 10), the arms 24 being concave as is also their connecting central portion with a slot 25 therein for the passage there-through of a screw rod 30 which has a hook 31 on its inner end for engagement with a loop 26 depending from sleeve 2, into the concave portion or seat of the saddle. The arms 23 are convexo-concave while those 24 and their connecting portion are concavo-convex.

The curved central portion or seat 24 of this saddle is mounted to turn in a similarly shaped seat 28 on the upper face of a plate 27 secured to the bench B. The plate 27 has an aperture as has also the bench B through which rod 30 loosely passes. The outer end of rod 30 is threaded and has a nut 32 threaded therein and provided with a hand wheel 33 which, when turned in one direction, will move rod 30 outward and lock the vise in adjusted position. The nut 32 is shaped to fit a concave seat 34 on a plate 35 secured to the lower faces of bench B and has an aperture registering with those in bench B and plate 27.

From the above description it will be obvious that when it is desired to tilt the vise at any desired angle, all that is necessary is to loosen the hand wheel 33 which will permit the saddle 22 to be turned in the seat of plate 27, as shown in Fig. 1, for varying the end-wise angle of the vise and to which it is lateral in position. The sleeve 2 is rocked or turned on the curved ends 23 of the saddle 22 as is shown clearly in Fig. 2. When the vise has been adjusted at the desired angle the hand wheel 23 is tightened up, which through rod 30 operates to secure the parts firmly in adjusted position.

The sleeve 2 of jaw 1 is provided with a socket 14^a in its upper face to receive any one of a number of tools so that the vise may be used as an anvil if desired, obviously various tools may be interchangeably used in connection therewith.

When it is desired to rigidly fix the vise relatively to the bench B the saddle 22 is removed and the saddle 22^a, shown in detail in Figs. 9 and 10, substituted therefor. This saddle has the cylindrical convexed ends 23^a arranged in the same plane as the upper edges of the concave seat 24^a thereof, so that when the saddle is employed, as shown in Fig. 8, the sleeve 2 of the vise will rest flat against the upper edges of said seat 24^a as shown clearly in Fig. 8 and all possibility of the vise swiveling on the saddle is prevented. This saddle 22^a is, of course, provided with an aperture 25^a for the passage of the rod 30 in the same manner as above described in relation to the other figures.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains and while I have described the principle of operation of the invention together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made as are within the scope of the claimed invention.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The combination with a vise having a bearing surface; of a saddle upon which the vise is mounted, said saddle having a pair of convex opposed bearing surfaces arranged angularly relative to one another, a base and said vise having counterpart bearing surfaces to co-operate with the bearing surfaces of said saddle, and means for retaining the vise and saddle in any adjusted position.

2. The combination with a vise having a bearing surface; of a saddle upon which the vise is mounted for angular adjustment, said saddle having convex opposed bearing surfaces arranged in different horizontal planes, a base and said vise having counterpart bearing surfaces to fit the said bearing surfaces of the saddle, and means for retaining the vise and saddle in any desired adjusted position.

3. The combination with a vise, a saddle upon which the vise is mounted, means whereby the saddle may be tilted at various angles, means whereby the vise may be tilted upon the saddle at various angles, and means common to both the saddle and vise for retaining the same in various adjusted positions.

4. The combination with a vise and a support each having a concave bearing surface therein; of a saddle disposed between the support and clamping device and having a pair of convex opposed counterpart bearing surfaces to co-operate with the bearing surfaces of the support and clamping device, and means for locking the parts in various angular relationships.

5. In a vise of the class described, a pair of parallel jaws being relative movable, means for adjusting the jaws, a supporting base, a Greek-cross shaped saddle mounted on said base, one pair of opposed arms of

which are convexo-concave, and the other pair and their connecting portions concavo-convex with a central slot therein, and a clamping member passing through said slot and engaged with one of the jaws.

6. In a vise of the class described, a pair of parallel jaws having hollow shanks, one being movable within the other, a hollow operating screw located in one of said shanks and connected to move one of the jaws when rotating, a clevis pivoted to the outer end of said screw and having an aperture therein, and a rod slidably mounted in said aperture and adapted to be received in said hollow screw at times.

7. In a vise of the class described, a pair of parallel jaws having hollow shanks, one movable in the other, a hollow operating screw movable in one of said shanks and connected to move the movable jaw when rotated, a clevis pivoted to the outer end of said screw and having an aperture therein, and a rod slidably mounted in said aperture and adapted to be received in said hollow screw at times, means for preventing the separation of said rod from said clevis.

8. A vise comprising a pair of jaws, a saddle upon which a vise is mounted, said saddle comprising a cruciform body, the arms thereof being provided with arcuated bearing surfaces which are arranged in opposed relation to one another, a base and said vise having counterpart bearing surfaces to co-operate with the bearing surfaces of the saddle, and means for retaining the vise and saddle in any desired adjusted position.

9. A vise comprising a pair of jaws, a saddle upon which the vise is mounted for angular adjustment comprising a pair of semi-circular arms arranged at right angles to each other, each arm having a flat portion opposite its curved portion, the convex faces of the arms being arranged on opposite sides of the saddle and having a portion thereof located in the same plane with the flat portion of its co-acting arm, a base and said vise having counterpart bearing surfaces adapted to co-operate with the convex faces of the arms, and means for retaining the vise and saddle in any desired adjusted position.

10. A vise comprising a pair of relatively movable jaws, a saddle upon which the vise is mounted for universal pivotal movement, a loop depending from the vise, a rod extending through the saddle and having a hook on one end for engagement with said loop, and the other end of the rod being threaded, and a hand screw mounted on said threaded end of the rod.

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

JOHN J. MOORE.

Witnesses:
A. C. GORDON,
LUCIUS C. ATWATER.