Nov. 1, 1955 P. R. DESFOSSES 2,722,147

ROTATABLE VISE HAVING A SELECTIVELY USABLE EXTENSION JAW

Filed June 15, 1953

Fig. 1.

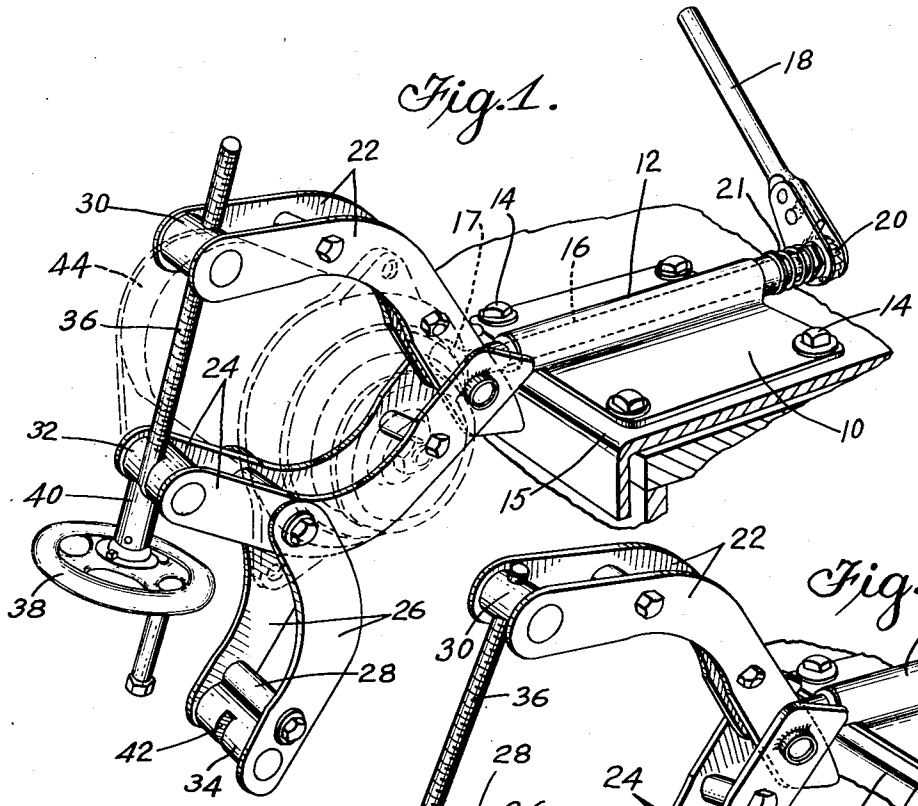


Fig. 3.

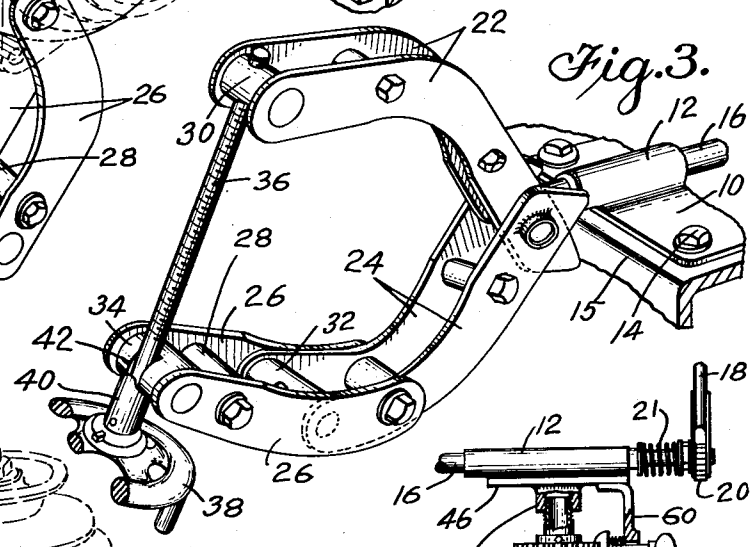
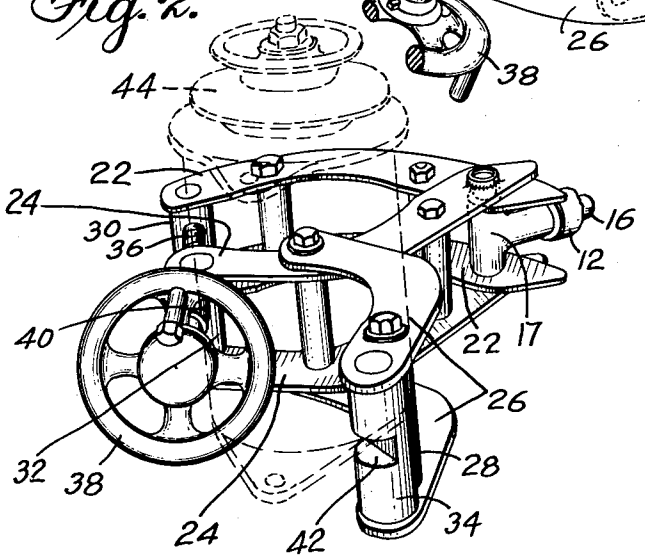


Fig. 2.



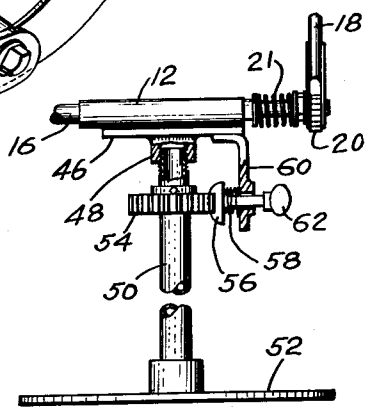


Fig. 4

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United States Patent Office 2,722,147 Patented Nov. 1, 1955

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ROTATABLE VISE HAVING A SELECTIVELY USABLE EXTENSION JAW

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Application June 15, 1953, Serial No. 361,887
3 Claims. (Cl. 81—19)
(Granted under Title 35, U. S. Code (1952), sec. 266)

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

This invention relates to a vise for clamping a machine such as an electric generator while permitting it to be rotated on a horizontal axis to make its various parts accessible for inspection and servicing.

In a preferred form of the invention the vise is secured to and projects from a work bench or other support, and is provided with a fixed jaw and a movable jaw which are used to engage work pieces of different size, the jaws being rotatable as a unit to permit a workman to bring any desired surface of the work piece into a convenient location for inspection and other desired operations. The fixed jaw is provided with a hinged extension to enable the device to engage larger pieces of work.

An object of the invention is to provide apparatus of the type indicated which will be simple and economical to manufacture and efficient in operation.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following description.

Fig. 1 is a perspective view of a device embodying the invention, with the jaws thereof positioned to retain a work piece, shown in dotted lines;

Fig. 2 is a perspective view showing the vise and work piece rotated to another position;

Fig. 3 is a view similar to Fig. 1 but showing the jaws positioned to engage a larger work piece, not shown; and

Fig. 4 is a view in elevation of a modified form of support.

The apparatus shown in Figs. 1–3 comprises a base plate **10** formed with a tubular portion **12** and fixedly secured, as by bolts **14**, to a stationary mounting such as a work bench **15**. Rotatable within the tubular portion **12** is a shaft **16** having welded to its outer end a cross member **17**. The inner end of the shaft is provided with a handle **18** which is connected thereto by a ratchet **20** so that the shaft may be manually rotated to any desired position. A compression spring **21** has its inner end bearing against a collar on the shaft **16** adjacent the ratchet end of handle **18** and its outer end bearing against an extension on the end of tubular portion **12**, to provide frictional resistance to rotation of shaft **16**.

Secured as by welding to the ends of member **17** are spaced plates **24**, curved as shown and together forming the fixed jaw of the vise. A similar pair of plates **22** are hingedly related to member **17** and form a movable jaw of the vise. Pivoted to plates **24** are another pair of plates **26**, designed to form an extension of plates **24** and together therewith forming a jaw to be used with work pieces of larger size. The several pairs of plates **22**, **24** and **26** are secured together by spacing rods, the spacing rod for plates **26** being indicated at **28**.

The several pairs of plates **22**, **24** and **26** are joined together at their outer ends by rotatable cross bars **30**, **32** and **34**. The cross bar **30** is drilled and tapped to receive a screw **36** operated by means of a hand wheel **38**. The cross bar **32** is formed with a slot to receive the outer, unthreaded portion of screw **36**, a sleeve **40** being mounted on the screw and shaped as shown to provide a bearing surface between the screw and the cross bar. The cross bar **34** is similarly slotted, as indicated at **42**.

In the operation of the device, the handle **18** may be manipulated to rotate the vise until the fixed jaw **24** is in its lowermost position. The work piece, indicated at **44**, may then be laid thereon, the screw **36** adjusted to proper position, and the movable jaw **22** brought into engagement with cross bar **32**, and handwheel **38** turned until the jaws grip the work. The assembly may then be rotated by handle **18** to bring the work into the most convenient position for inspection and any other operation which may be desirable. For larger work pieces, the plates **26** are moved into position and the screw **36** and sleeve **40** brought into engagement with cross bar **34**.

In the modified form of the invention shown in Fig. 4, the fixed plate **10** of Fig. 1 is replaced by a plate **46** which is fixedly secured, as by welding, to a cap **48** which is threadedly mounted on the threaded upper end of a pillar **50**, which may be in the form of a pipe having its base fixedly secured to a stationary base **52**. An annular serrated member **54**, which may be in the form of a gear or cog wheel, is keyed to pillar **50** and is adapted to be engaged by a detent **56** pressed inwardly by a compression spring **58**. The detent is radially slidable in a bracket **60** secured to plate **46** and is movable outwardly by means of a handle **62**. By this means the assembly may be rotated about a vertical axis defined by rotation of cap **48** on the threads of collar **50**, to move the work horizontally as desired.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

What is claimed is:

1. A vise comprising a base plate formed with a tubular portion, means for securing said plate to a horizontal surface, a shaft rotatable in said tubular portion and having a T-shaped head, a handle having a ratchet connection to said shaft for rotating the shaft, a first jaw fixed to said head, a second jaw pivoted to said head, a third jaw pivoted to the first jaw at the midsection of the latter and operative to extend the reach of the latter, and threaded means for drawing said jaws together.

2. A vise comprising a fixed tubular support, a shaft rotatable in said support and having a T-shaped head, a handle connected to said shaft to rotate the same, a first jaw fixed to said head, a second jaw pivoted to said head, a third jaw pivoted to an intermediate point on said first jaw and operative to extend the reach of the latter, and threaded means for drawing said jaws together.

3. A vise comprising a fixed support provided with a bore, a shaft rotatable in said bore and having a T-shaped head, a handle connected to said shaft to rotate the same, a first jaw having one end fixed to said head, a second jaw having one end hingedly related to said head with its other end movable into and out of juxtaposition to the other end of the first jaw, a third jaw hinged to an intermediate point on the first jaw and operative to extend the reach of the latter, and means threadedly and pivotally related to the second jaw and selectively engageable with the first and third jaws for drawing the second jaw toward the first and third jaws.

References Cited in the file of this patent

UNITED STATES PATENTS

292,342	McMillan	Jan. 22, 1884
1,370,705	Norton	Mar. 8, 1921
2,106,525	Henry	Jan. 25, 1938
2,489,547	Temple	Nov. 29, 1949
2,621,400	Peterson	Dec. 16, 1952

FOREIGN PATENTS

3,934	Great Britain	Feb. 22, 1899