E. J. LANE.

VISE.

APPLICATION FILED JUNE 25, 1917.

1,289,205. Patented Dec. 31, 1918.

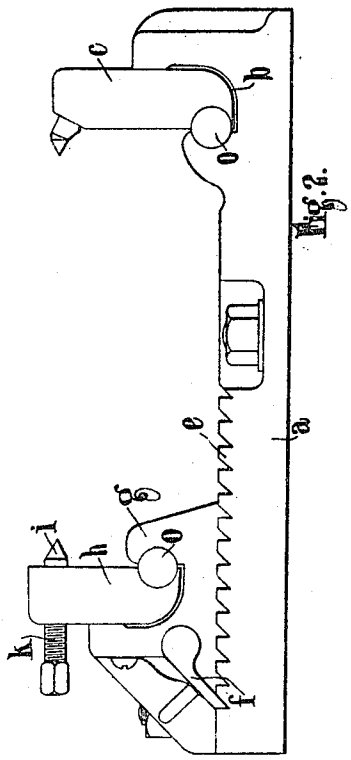


Fig. 2.

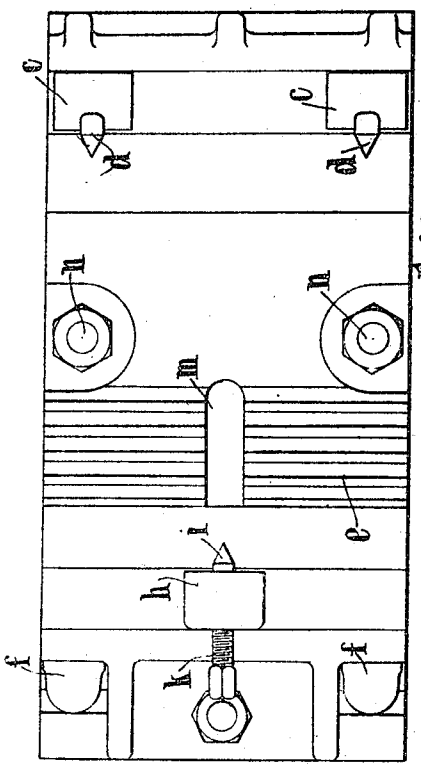


Fig. 3.

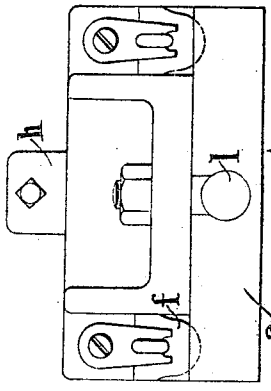


Fig. 4.

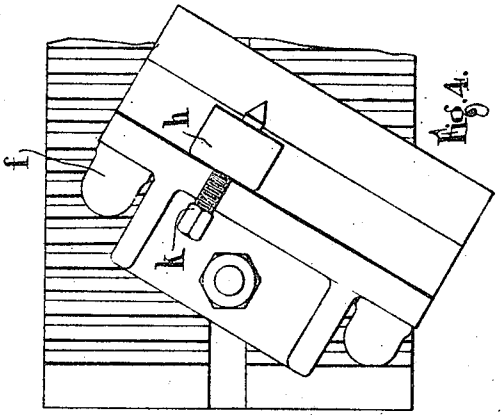


Fig. 5.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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VISE.

1,289,205. Specification of Letters Patent. Patented Dec. 31, 1918.

Application filed June 25, 1917. Serial No. 176,828.

To all whom it may concern:

Be it known that I, EDWIN JOHN LANE, a subject of the King of Great Britain and Ireland, and residing at 23 Gascoyne road, South Hackney, in the county of London, England, have invented certain new and useful Improvements in or Connected with Vises, of which the following is a specification.

This invention relates to vises and particularly to such as are employed for holding work upon planing and shaping machines or other machine tools, the object of the invention being to produce a form of vise which may be readily and rapidly adjusted and by which the work will be more securely held than is the case with vises as hitherto constructed.

With this object in view the invention consists in a vise constructed and arranged to operate substantially in the manner hereinafter described and comprising the combination of parts hereinafter referred to in the appended claims.

The accompanying drawings illustrate one form of vise in accordance with the invention

Figure 1 being an end elevation

Fig. 2 a side elevation and

Fig. 3 a plan, while

Fig. 4 is a view showing the vise arranged angularly when dealing with irregularly shaped work or work requiring the vise to take up such a position.

In carrying my invention into effect in one convenient manner I form my improved vise with a bed or base-plate *a*, at one end of which I form a transverse groove *b* in which are slidably mounted two dogs or members *c*, each of which is provided with a center or narrow or pointed jaw *d*. At the other end of the base-plate I form a rack or series of racks *e* with which engage spring-controlled pawls *f* pivotally carried upon a headstock *g* which also supports a transversely slidable dog or member *h* having a center or narrow or pointed jaw *i* adapted to be set up to the work by means of the screw *k*.

The headstock *g* is roughly adjusted in position by means of the rack or ratchet *e* after which the final adjustment is effected by means of the screw *k*, the headstock being held in any desired position by means of a cylindrical or other headed bolt *l* adapted to slide in a groove or channel *m* in the base plate of the vise. The ends of the pawls *f* are preferably curved as shown in order to allow of the headstock being set at an angle when required for the purpose of holding irregularly shaped work or for other reasons.

Bolts *n* are provided for holding the vise on the machine slide or face plate or other part of the machine tool with which it is to be used, and in order to minimize wear and improve the operation of the apparatus the various dogs or members *c h* are each preferably provided with a cylindrical piece *o* of hardened steel adapted to slide in a correspondingly semi-circular groove in the base-plate or headstock.

When it is desired to prepare a piece of work for machining to be held in the machine by a vise such as above described lines are scribed on opposite sides of the work parallel to the ultimate machined surface, a center pop being made with a punch upon one of the lines while two center pops are punched upon the other line. The work is then placed in the vise, the sliding dogs *c* are adjusted so that their centers engage the respective center pops on one line after which the movable center *i* is securely adjusted in register with the center pop upon the other line whereupon the work will be securely held in the vise at three points.

In some cases where very irregular pieces of work have to be machined I may employ one or more auxiliary movable centers or jaws, and for machines adapted to handle large work the base or bed-plate *a* may be dispensed with and independent slides for the reception of the dogs mounted where required upon the machine.

It is to be understood that the foregoing details of construction are given by way of example only as I may modify the number of points at which the work is held as also the manner of adjusting the various parts of the vise providing screw-operated means or other gearing in place of the ratchet and other hand-operated parts of the vise using curved or arcuate slides for the dogs in place of the rectilinear guides described and varying the construction and arrangement of the different parts to suit the purpose for which the vise is to be employed or the type and construction of machine to which it is to be applied.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A vise comprising a base having a transverse groove therein, two dogs slidable in said groove and each carrying a center, a headstock movable longitudinally of said base, and an adjustable center carried by said headstock.

2. A vise comprising a base, two dogs slidable transversely of said base and each carrying a center, a headstock movable longitudially of said base, a dog slidable transversely in said headstock, and a movable center carried by said last-named dog.

3. A vise comprising a base, two dogs slidable transversely of said base and each carrying a center, a headstock upon said base, a center carried by said headstock, a rack upon said base and pawls on said headstock engaging said rack.

4. A vise comprising a base, two dogs having centers carried upon said base, a headstock upon said base, a center carried by said headstock, a rack upon said base and pawls upon said headstock having rounded ends adapted to engage with said rack.

5. A vise comprising a base, two dogs movable transversely of said base and each carrying a center, a headstock upon said base, a dog transversely slidable in said headstock, a movable center carried by said dog, a rack upon said base, and pawls upon said headstock adapted to engage said rack.

6. A vise comprising a base having a transverse groove therein, two dogs slidable in said groove and each carrying a center, a headstock movable longitudinally of said base and having a transverse groove therein, a dog slidable in said transverse groove, a movable center carried by said dog, a rack upon said base, and pawls upon said headstock adapted to engage said rack.

In testimony whereof I have signed my name to this specification.

EDWIN JOHN LANE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."