

April 7, 1931.

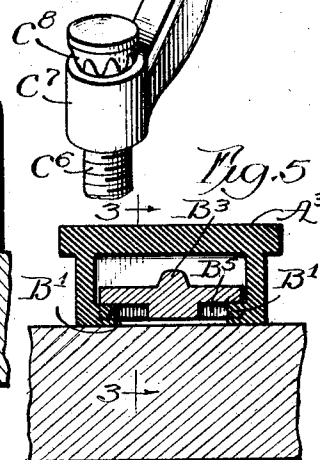
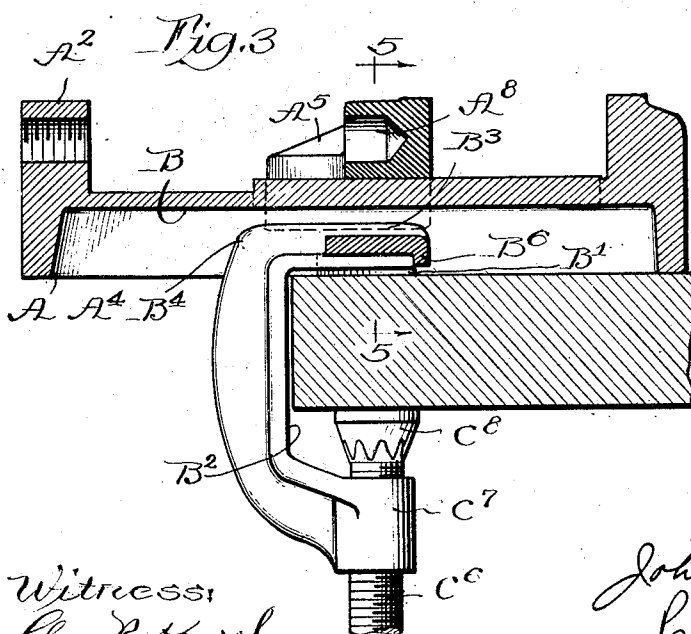
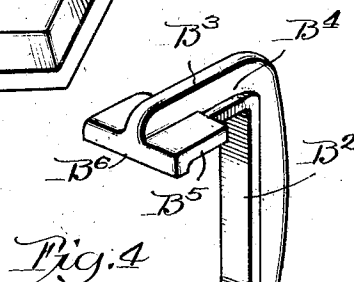
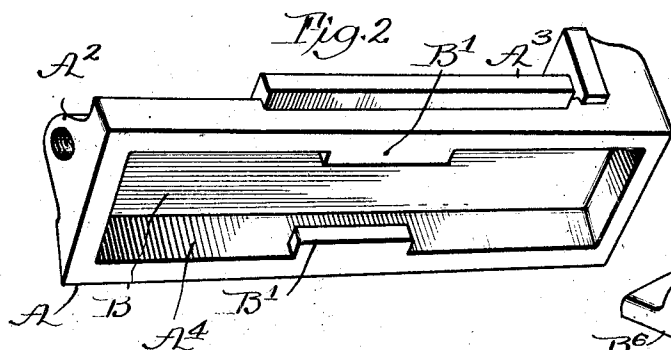
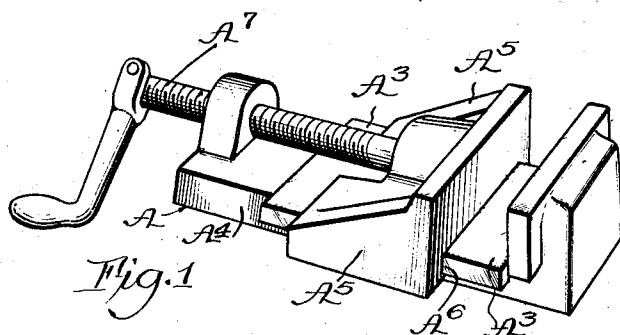
J. S. McCHESNEY

1,799,474

VICE

Filed Sept. 8, 1930

3 Sheets-Sheet 1



Witness:
Chas. R. Koush

Inventor,
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April 7, 1931.

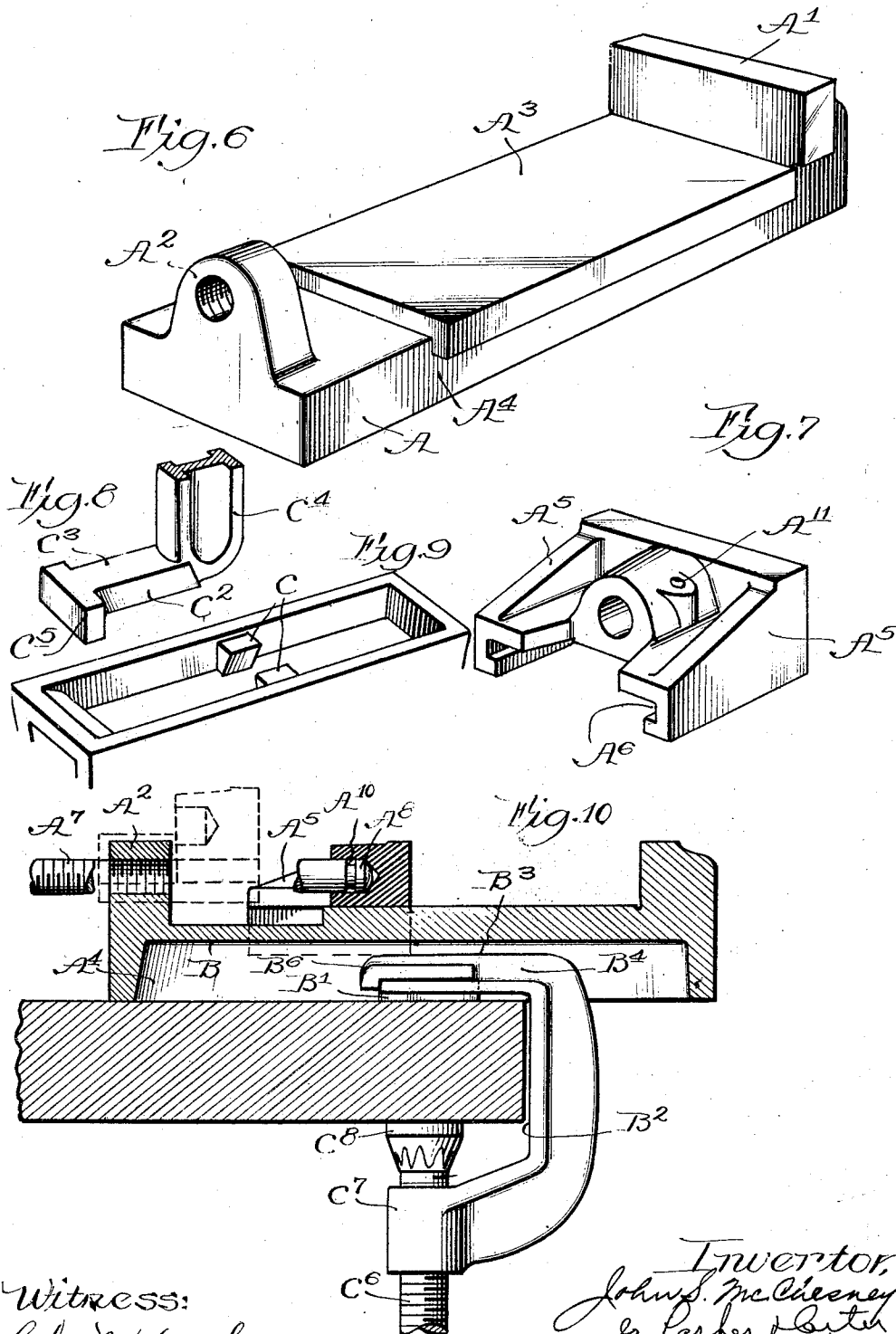
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VICE

Filed Sept. 8, 1930

3 Sheets-Sheet 2



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1,799,474

WISE

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3 Sheets-Sheet 3

Fig. 11

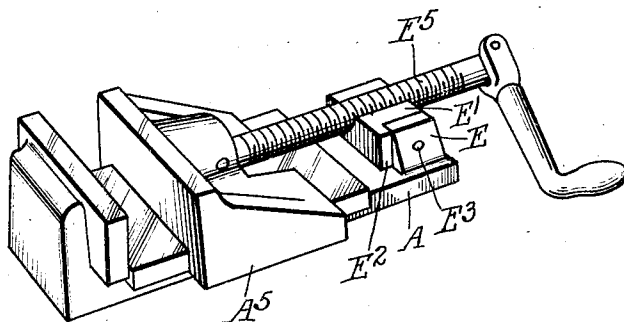


Fig. 17

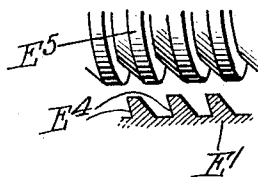
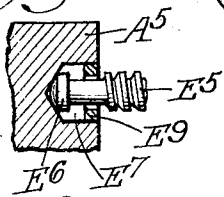


Fig. 12

Fig. 13

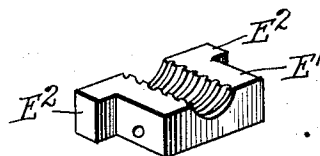
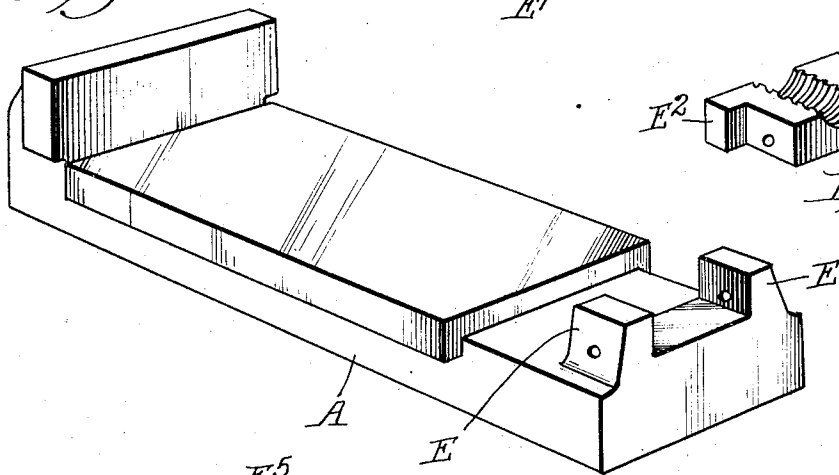


Fig. 14

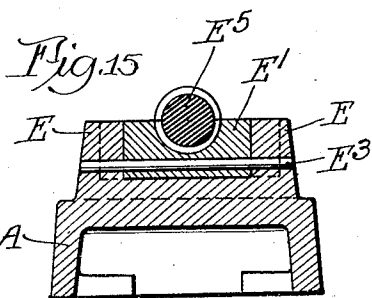


Fig. 15

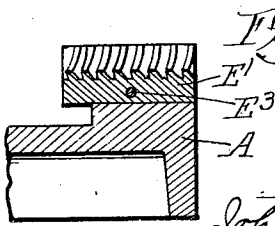


Fig. 16

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UNITED STATES PATENT OFFICE

JOHN S. MCCHESENEY, OF CHICAGO, ILLINOIS

VISE

Application filed September 8, 1930. Serial No. 480,426.

My invention relates to improvements in vises and has for one object to provide a new and improved form of vise which may be used for a variety of purposes and in a number of different situations. When used without the demountable clamp, it may serve as a drill press vise being held in position by hand or it may hold the work on the magnetic chuck of the surface grinder, or it may hold work directly on the face plate of a drill press being clamped thereon in any suitable manner as for instance by holding bolts which pass through the drill press and engage the body of the vise. The device may be used as a holding means resting on the bench to hold work in position for use. If it is desired to hold the device rigidly in position, the demountable clamp may be used and this clamp may be engaged with the vise body either from the right hand or the left hand side as the case may be so as to give a wide range of positions and adjustments. Another important feature of my invention is the provision for instantaneously positioning and clamping the sliding vise jaw member with respect to the object to be held. This feature is accomplished by using a clamping screw provided with an under cut modified square thread, the ball point of the screw being loosely retained within the sliding member so as to permit the clamping screw to be raised out of disengagement with a stationary half nut. In practice the threaded screw is raised out of engagement with the stationary half nut and the sliding member pushed forward until contact is established between the jaws of the vise and the object held therein whereupon the screw is returned within the half nut and a slight rotating movement of the screw exerts pressure on the object held between the vise jaws. The inclined surfaces of contact of the screw exert a locking action thereby preventing disengagement. Other objects will appear from time to time throughout the specification and claims.

My invention is illustrated more or less diagrammatically in the accompanying drawings, wherein—

Figure 1 shows a perspective view of my device;

Figure 2 shows a perspective bottom view of the device;

Figure 3 shows a longitudinal section through the vise with the clamp in side elevation;

Figure 4 is a perspective view of the clamp;

Figure 5 is a section along the line 5—5 of Figure 3;

Figure 6 is a perspective view of the vise bed;

Figure 7 is a perspective view of the slide;

Figures 8 and 9 are bottom views in perspective with the parts reversed of a modified form of the vise bed and holding clamp;

Figure 10 is a view similar to Figure 3 showing the clamp reversed.

Figure 11 is a perspective view of a modified form of vise;

Figure 12 is a detail part in perspective and part in section showing the nut and screw;

Figure 13 is a perspective of the base of the device;

Figure 14 is a perspective of the nut;

Figure 15 is a transverse section;

Figure 16 is a longitudinal section;

Figure 17 is a detail section through a part of the jaw.

Like parts are indicated by like characters throughout the specification and drawings.

A is a rectangular clamp body. At one end there projects upwardly from the body integral therewith, a jaw abutment A¹. At the other end there projects upwardly the threaded lead screw abutment A². Intermediate these two abutments is the saddle A³, integral with the vise body and projecting over the body of the vise to form flanges A⁴. Riding upon this saddle and enclosing these flanges is the movable jaw body A⁵. Extending downwardly on both sides of the vise body and slide as at A⁶ to engage the outer edges of the saddle A³ and particularly to engage with the flange A⁴ to hold the movable jaw in position as it travels along the saddle. There is sufficient space between the abutment A² and the saddle A³ so that the movable jaw A⁵ may be placed in line with the saddle between it and the abutment and moved forward along the saddle for assembly.

bly. A⁷ is the lead screw. It is provided with a bearing point A⁸ something like a lathe center, penetrating the aperture A⁹ in the movable jaw and engaging the conical bottom thereof. This point A⁹ is slotted as at A¹⁰ and will be engaged by a pin A¹¹ to hold the lead screw in working relation with the movable jaw. For disassembly the movable jaw is brought back to the position shown in dotted lines at the left in Figure 10. The pin is drawn out, the lead screw is drawn further back to clear and the jaw is lifted up as indicated.

To hold the vise in position, a clamp is used above referred to. This is made possible by the provision as indicated in Figures 2 and 9 of a hollow or apertured prong B in the vise body. Intermediate the two ends of this hollow opposed sides thereof are inwardly projecting flanges or lugs B¹. B² is a clamp yoke having a laterally projecting arm B³. A part of this arm adjacent the yoke is narrow as at B⁴ so as to pass between the flanges B¹. The tip of the arm is provided with a lug engaging foot B⁵ which may engage the lugs B¹ as indicated in Figure 3 and a stop lip B⁶ is provided to engage the edge of the lugs indicated in Figures 3 and 5 to prevent movement for instance as in Figures 3 and 7 the left movement of the clamp toward the right is best for its engagement. Obviously this clamp may be brought into engagement with the flange body either from the right or left as is more convenient to the operator.

In the modified form shown in Figures 8 and 9, the hollow vise body instead of being provided with the rectangular lugs B¹ has tapered lugs C in opposition one to the other and in opposition with tapered surfaces C² on the tongue C³ projecting laterally from the clamp body C⁴. This tongue C³ terminates in a cross piece or stop C⁵ adapted to engage the sides of the members C. The clamp is of course tightened on the work as indicated in Figure 3 by means of a threaded clamp screw C⁶ which may be rotated by any suitable handle in the nut C⁷ on the end of the clamp body which terminates in a swivel cap of the usual type.

Referring to the device shown in Figures 11 to 16, instead of the lug A² rising from the base A, we have a pair of lugs E spaced apart and adapted to maintain a half nut E¹ shouldered at E² to carry the thrust and adapted to be held in place by a pin E³. The threads in the half nut are undercut as indicated at E⁴ in Figure 12 and they are engaged by undercut threads in the screw E⁵. This screw has a bearing head E⁶ in socket E⁷ held therein by a washer E⁸ in the vise jaw A⁵. This arrangement permits a certain amount of angular displacement of the thread itself. The quick adjustment is obtained by lifting the screw out of the half nut and moving the jaw to the desired posi-

tion. Then the thread is dropped down into the nut and is tightened, the undercut feature of threads on screw and nut insuring a positive hold when pressure is applied.

I claim:

1. In combination with a vise body having movable and fixed jaws thereon, and centrally recessed on its under side, lugs projecting inwardly from the walls of said recess above the lower extremity of said walls, a clamp having a lug engaging head adapted to penetrate the recess and engage said lugs, the clamp being adapted for disengagement from said lugs by lateral movement of the head in but without removal from the recess.
2. A vise comprising a vise body having a fixed jaw, a movable jaw slidable along the vise body and terminating above the bottom extension thereof, a smooth surface on the underside of the body adapted to rest on any suitable supporting surface and detachable means associated with the underside of the vise body entirely within the contour thereof and out of engagement with the movable jaw for removably attaching the vise to a suitable support, said means comprising a clamp having a head adapted to penetrate a recess in the underside of the vise body and projections extending inwardly from the walls of the recess into engagement with the clamp, the clamp being movable longitudinally with respect to the vise to disengage it from the projections without withdrawing it from the recess.
3. A vise comprising a vise body, the underside of which is recessed to leave a rectangular, support engaging wall, about the entire outer periphery thereof, a fixed jaw projecting upwardly from the body, a movable jaw slidable thereon and located entirely above the bottom of the body, holding lugs projecting inwardly in opposition from the inner walls of the recessed portion of the body and a clamp having a head adapted to penetrate entirely within the recessed portion of the body and interlock with the holding lugs, the clamp being interchangeable either to hold the body by its clamping action upon a surface or be entirely disconnected from the body.
4. In combination with a vise body having movable and fixed jaws thereon, and centrally recessed on its under side, lugs projecting inwardly from the walls of said recess above the lower extremity of said walls, a clamp having a lug engaging head adapted to penetrate the recess and engage said lugs, the relation between the lug engaging head and the lugs being such that when they are in engagement and when the clamp pulls down on the vise body, the clamp is kept out of contact with the surface upon which the vise body rests by the engagement between the clamp head and the lugs whereby downward movement exerted by the clamp forces

the vise body directly against the surface upon which it is supported.

5 In combination with a vise body having movable and fixed jaws thereon, and centrally recessed on its under side, lugs projecting inwardly from the walls of said recess above the lower extremity of said walls, a clamp
10 having a lug engaging head adapted to penetrate the recess and engage said lugs, and means associated with the lug engaging head and the lugs to limit longitudinal movement of the head in the recess in a direction parallel with the plane of the underside of the vise body.

15 Signed at Chicago, county of Cook, and State of Illinois, this 28th day of August, 1930.

JOHN S. McCHESNEY.

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