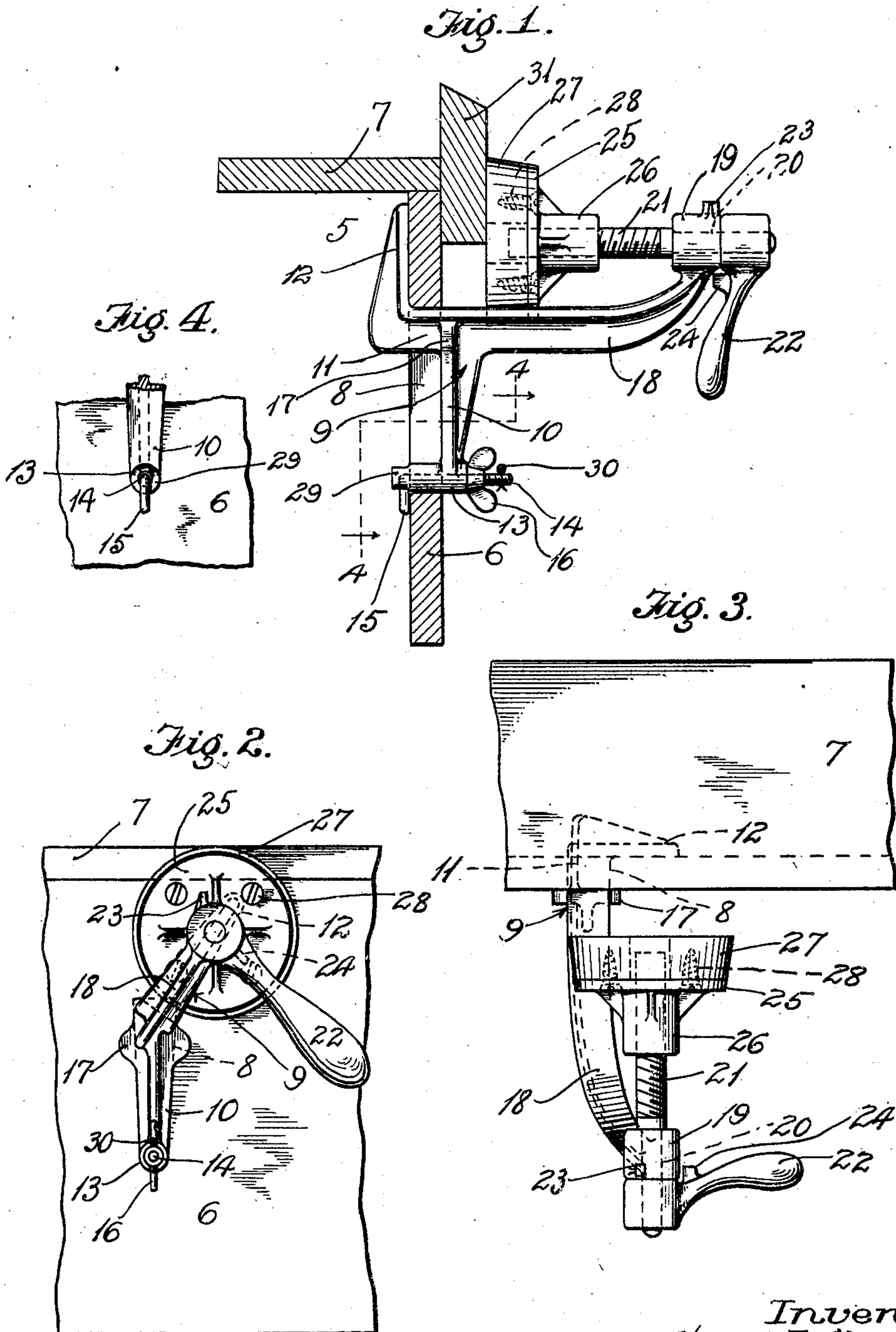


H. E. SHAWVER.
DETACHABLE VISE FOR CARPENTERS' BENCHES.
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Patented Dec. 20, 1910.



Witnesses.
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UNITED STATES PATENT OFFICE.

HARVEY E. SHAWVER, OF SANTA MONICA, CALIFORNIA.

DETACHABLE VISE FOR CARPENTERS' BENCHES.

979,039.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARVEY E. SHAWVER, a citizen of the United States, residing at Santa Monica, in the county of Los Angeles and State of California, have invented new and useful Improvements in Detachable Vises for Carpenters' Benches, of which the following is a specification.

This invention relates to vises, and particularly to such as are used in connection with a carpenter's bench in order to hold the work.

The object of the invention is to produce a vise of this class which can be readily attached to a bench from the forward side, and without necessitating the application of any tools of any kind on the rear side of the bench.

In the annexed drawing which fully illustrates my invention, Figure 1 is a vertical cross section taken through a bench to which my vise is applied, and representing the vise as holding the work in position. Fig. 2 is a front elevation showing a portion of the bench with the vise. Fig. 3 is a plan of a portion of the bench, and further illustrating the manner in which the vise is secured thereto. Fig. 4 is a fragmentary elevation of the inner side of the apron of the bench, and further illustrating the means for securing the vise. This view represents the parts as viewed on the line 4-4 of Fig. 1 looking in the direction of the arrows.

Referring more particularly to the parts, 5 represents a bench which comprises a vertical apron 6 and the horizontal shelf 7. In applying my device, I provide the apron with an elongated vertical slot 8, which is disposed a short distance below the shelf as indicated.

The vise comprises a bracket 9 having a foot 10, which is adapted to seat upon the forward side of the apron. From the inner side of this foot 10 a shank 11 extends inwardly through the slot, and this shank 11 has a laterally projecting toe 12 at its inner end, which is adapted to engage and lie flat upon the inner face of the apron. The lower end of the foot 10 is formed into a boss or hub 13, and in this hub is received a clamp-

ing screw 14, and the inner end of this screw 14 is bent laterally to form a finger 15, which is adapted to engage the inner face of the apron as shown in Fig. 1. On the inner end of the boss 13, a wing-nut 16 is seated, and by rotating this nut the finger 13 can be clamped against the apron. As indicated in Fig. 2 the foot 10 is formed of laterally projecting lobes 17, which engage the forward face of the apron near the slot, and which enable the bracket to secure itself upon the apron.

On its forward side, the bracket 9 has an outwardly projecting arm 18, the end of which is curved into the same plane with the toe 12 as aforesaid. In this connection, it should be noted that the toe 12 extends in an inclined upward direction from the shank 11 as indicated in Fig. 2. The outer end of the arm 18 is formed of a hub 19, in which there is rotatably mounted a reduced neck 20 formed on the end of a spindle or stem 21, having threads as shown. The neck 20 extends beyond the hub 19, and is provided with a rigidly attached lever 22. By means of this lever a spindle 21 can be rotated when desired on the hub 19, a stop or lug 23 is provided and a similar lug 24 is formed on the lever. When these lugs engage each other, they limit the movement of the lever.

On the inner end of the spindle 21 a plate 25 is mounted, and this plate has an integral hub 26, which is mounted on the screw threads of the spindle 21, so that when a plate or disk 25 is rotated on the spindle, it will approach or recede from the forward face of the apron. On the forward side of the plate 25, a block 27 is attached by means of a suitable fastening device 28, and this block, together with the plate 25 constitutes the movable jaw of the vise. The side face of the block 27 is inclined or tapered, as shown. The edge of the plate 25 is similarly tapered.

The inner end of the hub 13 projects beyond the inner face of the apron 6 and this hub is cut away on one side flush with the inner face of the apron so that a projecting tongue 29 remains, and this tongue is adapted to prevent the rotation of the finger 15

when the wing-nut 16 is rotated. In order to prevent the wing-nut 16 from becoming detached, a spread pin 30 is applied to the clamping screw 14, as shown.

5 The forward edge of the shelf 7 is flush with the outer face of the apron 6 as indicated, so that the upper edge of the bench forms a clamping jaw opposite to the block 27 and parallel with the inner face of the 10 block 27. In using the vise, the work 31 is held against the upper part of the bench and the block 27 is rotated by applying the hand to its side face while the spindle 21 remains fixed. In this way the block 27 is 15 jammed lightly on the work 31. When the block 27 is advanced in this manner, the lever 22 should be disposed in a vertical position with the lugs 23 and 24 in contact. After the block 27 has been lightly clamped 20 in this manner, lever 22 should be rotated down toward the position indicated in Fig. 1. This will rotate the spindle 21 and advance the block 27 toward the bench, so that it will clamp the work 31 securely in posi- 25 tion.

The bracket is clamped to the apron by the pressure of the lobes or ears 17 on the forward side of the apron and the toe 12 on the rear side, and this pressure is caused by 30 the tension in the clamping bolt 14. In this connection, attention is called to the fact that the lower portion of the foot 10, that is, the part below the lobes 17 is small enough to permit it to pass into the slot 8 when the 35 wing-nut 16 is tightened up. When it is desired to detach the vise from the bench, this can be accomplished by loosening the clamping bolt 14 and rotating it until the 40 finger 15 projects inwardly opposite the slot 8. The lower end of the foot 10 can then be drawn outwardly until the hub 13 is disengaged from the slot and the shank 11 can then be drawn downwardly, and the bracket 45 tilted over so as to enable the toe 12 to be withdrawn through the slot. By reversing the operation, the vise can be applied to the bench.

Special attention is called to the block 27, and to the fact that it operates as a hand 50 wheel, to which the hand can be directly applied for bringing about a quick adjustment of the block to the work. The slight further movement necessary to clamp the work is given by the lever 22. Special attention is 55 called to the fact that when the work 31 is clamped in the vise, the lever 22 will be depressed. Thus the lever is moved out of the way to prevent obstructing the movements of the carpenter in planing, or in other oper- 60 ations on the work. Attention is also called to the fact that the threads on the screw 21 have a direction which will tend to prevent the planing force on the work from loosening the jaw 27, that is, assuming that the 65 plane is to be operated by the right hand of

the carpenter, and the threads of the screw 21 will be left hand as indicated in Fig. 2.

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

1. In combination, a bench provided with an apron having a slot therein, a bracket extending through said slot, said bracket having an upwardly extending toe engaging the inner face of the apron adjacent the slot, 75 said bracket being further provided with a downwardly extending foot having bearing lobes, said lobes bearing against the outer face of the apron adjacent the slot therein, a toe clamp mounted on the lower end of 80 said foot, said toe clamp adapted to pass through the opening formed in the apron to clamp the bracket to said apron, and a movable jaw mounted on said bracket and cooperating with said bench to clamp the 85 work.

2. In combination, a bench having a slot, a bracket passing through said slot and having a shank with a toe beyond said shank engaging the rear face of said bench, a 90 clamping screw carried by said bracket also passing through said slot and having a laterally extending finger projecting over the edge of said slot and engaging the inner face 95 of said apron, a clamping screw carried by said bracket in line with said toe and adapted to clamp the work against said apron.

3. A vise having a clamping screw, a movable jaw having a hub engaging the threads of said screw and adapted to advance said 100 jaw when said jaw is rotated, and means connected with said screw for rotating the same to clamp said jaw against the work.

4. A vise having a bracket with a foot adapted to seat upon the forward side of a 105 carpenter's bench, said bracket having a shank extending inwardly from said foot, and having a laterally projecting toe beyond said shank, said foot having a clamping bolt mounted therein, with a laterally 110 projecting finger at the inner end thereof, said bracket further having an outwardly projecting arm, a clamping screw having a plain unthreaded neck rotatably mounted in said arm, a jaw having a hub engaging the 115 threads of said screw and adapted to be advanced by rotating the same on said screw, and means carried by said clamping screw for rotating the same to clamp said jaw 120 against the work.

5. A carpenter's bench having an apron with a slot therein, a bracket having a foot extending longitudinally with said slot, and having lateral extensions engaging the forward side of said apron adjacent to said 125 foot, said bracket having a shank extending inwardly from said foot, and passing through said slot, and having a toe projecting laterally from said shank engaging the rear face of said apron, said foot hav- 130

ing a clamping bolt mounted therein adapted to pass inwardly through said slot, and having a laterally projecting finger adapted to engage the inner face of said apron, means
5 for preventing the rotation of said bolt, a clamping nut mounted on said bolt adapted to draw said finger against said apron, said bracket having an outwardly projecting arm, a clamping screw mounted in said arm,

and a jaw carried by said screw cooperating 10 with said apron to clamp the work.

In witness that I claim the foregoing I have hereunto subscribed my name this 28th day of March, 1910.

HARVEY E. SHAWVER.

Witnesses:

F. D. AMMEN,
EDMUND A. STRAUSE.