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CARPENTER'S BENCH VISE.

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1,121,603. Patented Dec. 22, 1914.

FIG. 1.

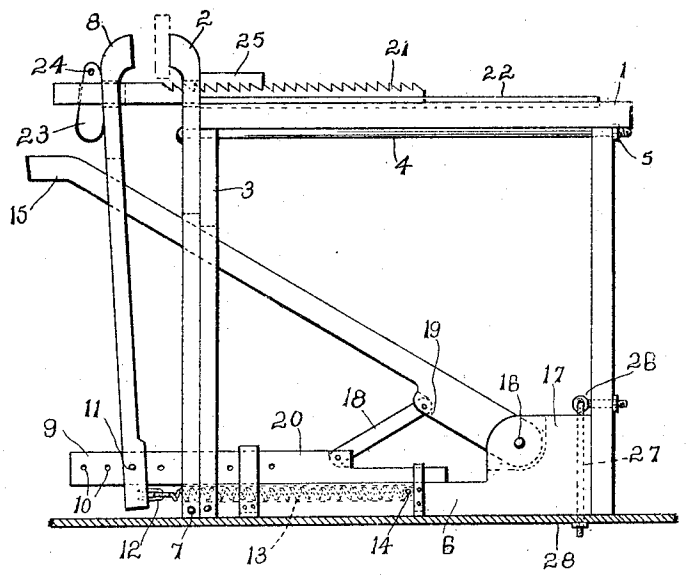
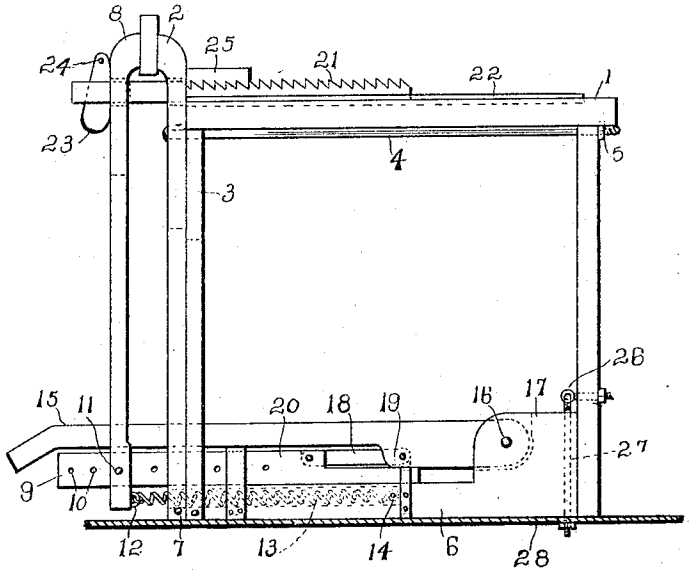


FIG. 2.



Witnesses:

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CARPENTER'S BENCH-VISE.

1,121,603. Specification of Letters Patent. Patented Dec. 22, 1914.

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To all whom it may concern:

Be it known that I, ADELARD BARON, a subject of the King of Great Britain, residing at 799 South First street, New Bedford, Massachusetts, United States of America, have invented certain new and useful Improvements in Carpenters' Bench-Vises; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention to be hereinafter described relates to carpenters' bench vises.

In order to more fully disclose the construction, operation, and use of the invention reference should be had to the accompanying drawings forming part of the present application.

Throughout the several figures of the drawings like reference characters designate the same parts.

In the drawings: Figure 1 is a side view of the device, as applied, in open position; and Fig. 2 is the same in closed position.

The main objects of the invention are to provide a bench vise of simple and inexpensive construction which will be efficient and easily operated.

Referring to the drawings in detail, 1 designates a carpenter's bench of the ordinary construction. An inner vise jaw 2 is secured to the front leg 3 by means of a brace bolt 4 which passes through the jaw 2 and leg 3 and extends beneath and parallel to the top of the bench 1 and passes through the back leg thereof; being secured in place by the usual nut 5; and by having its lower ends bolted to the end of the bottom brace beam 6 as at 7.

The outer vise jaw 8 is pivotally mounted at its lower end on a beam 9 provided with perforations 10 and slidably mounted on the brace beam 6; by means of a pin 11 inserted therethrough and through one of the perforations 10. Below the pin 11 is secured in the inner face of said jaw an eye or staple 12, to which is attached the outer end of a tension spring 13 fastened in a bore in the brace beam 6 by a pin 14; and which acts to keep the vise in open position as shown in Fig. 1. For closing the vise means are provided for forcing the lower end of the jaw 8 outwardly; and for preventing any outward motion of the upper end thereof, and supplying a rounded fulcrum for said jaw, the action of the first mentioned means, in coöperation therewith thus forcing the upper jaw 8 inwardly.

The means for forcing the lower end of the jaw outwardly comprise a foot lever 15 vertically operative in suitable slots in the vise jaws and table leg 3, and pivotally mounted at its inner end, as at 16 in a suitable socket in the block 17 formed on the inner end of the brace beam 6, and a link 18 pivotally mounted at its inner end in the outer end of the shoulder 19 of the lever 15 and pivotally mounted at its outer end in the inner end of the shoulder 20 of the slidably mounted beam 9. It should be noted that the height of the shoulder 19 of the lever 15 and of the shoulder 20 of the beam 9 is equal to the width of the link 18, so that when the vise is closed as in Fig. 2 the link fits between the under face of the lever and the upper face of the beam; as shown.

The means for preventing any outward movement of the upper end of the jaw 8 comprise; a rack 21 slidably operative between guides 22 secured in the top of the bench 1 and passing through suitable slots in the jaws 2 and 8 so as to extend beyond the outer jaw; an ovoidal wedge 23 vertically operative in a suitable slot through the rack 21 and near the outer end thereof and provided with a pin 24 in its upper end to prevent its dropping out of the slot; and a toothed block 25 adapted to engage the teeth of the rack 21 and the inner face of the jaw 2 so as to prevent any outward movement of the rack 2.

The operation is as follows: After the lower end of the jaw 8 has been adjusted on the slidably mounted beam 9 by means of the perforation 10 therein and the pin 11; the rack 21 is pushed in until the wedge 24 engages the outer face of the jaw 8; the block 25 is then placed on the rack 21 in engagement with the inner face of jaw 2; thus securing the jaw 8 against all outward movement. This position is shown in Fig. 1. After these adjustments the lever 15 is forced downwardly, forcing the lower end of the jaw 8 outwardly and the upper end inwardly, thus closing the vise. It will be evident, that in this position great strain will be placed upon the jaw 8; to eliminate this and to increase the grip of the vise, the rack 21 is pushed in as far as the wedge 23 will permit, the block 25 is raised from the rack

and placed so as to be in engagement with the inner face of the jaw 2; the wedge 23 is then driven upward by means of a mallet or other suitable instrument. It will be evident, from the shape of the wedge, that as it is forced upward it will engage the outer face of the jaw 8 and the inwardly presented face of the slot in which it operates; thus forcing the jaw inwardly and making it possible to obtain a very tight grip on the object there held; also releasing the strain on the lower part of the jaw. There are thus three movements in tightening the vise on the article held; first, the sliding movement of bar 22 carrying the upper part of jaw 8 toward jaw 2; secondly, the loosely pivoted movement of jaw 8 fulcruming on ovoidal wedge 23 and caused by the outward movement of pin 11 with sliding beam 9 to close the jaw 8 on the article to be held against fixed jaw 2; and, thirdly, the upward driving of wedge 23, which tightens the grip on said article still more securely. To press the bottom brace beam 6, an eye bolt 26 is secured through the back leg of the bench, and a second eye bolt 27 is secured thereto and through the brace beam 6 and the flooring 28. The effect of this is to press the bench firmly and also to prevent any movement thereof.

It is thought that the construction, operation, and use of the invention will be clear from the preceding detailed description.

Changes may be made in the construction, arrangement, and disposition of the several parts of the invention without in any way departing from the field and scope of the same, and it is meant to include all such within this application wherein only a preferred form has been disclosed.

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

1. In combination with a fixed vise-jaw, a movable vise-jaw, a sliding slotted bar engaging said movable jaw to move it for closing the vise, a sliding beam having pivotal connection with the lower end of said movable jaw, an ovoidal wedge fitted from below in the slot of said bar and supplying a rounded fulcrum for the movable jaw but adapted also to be driven upward independently for tightening the grip of the latter, means for moving said beam and means for locking the said bar.

2. In combination with a fixed vise-jaw and a movable vise-jaw, a fulcrum for the latter, a sliding beam connected to the lower end of the movable jaw and a lever and link whereby said beam is actuated, said beam being provided on top with a shoulder behind which the said link is adapted to fold flush with the upper surface thereof and said lever being shaped to fit on said shoulder and also upon the remainder of said beam in folding said lever into horizontal position.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

ADELARD BARON.

Witnesses:
SAMUEL E. BENTLEY,
EMILIEN HUETTE.

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