April 4, 1950 G. LAPOINTE 2,503,160

VISE HAVING SLIDABLE JAW ACTUATED BY DRIVEN WEDGE

Filed Feb. 24, 1947 2 Sheets-Sheet 1

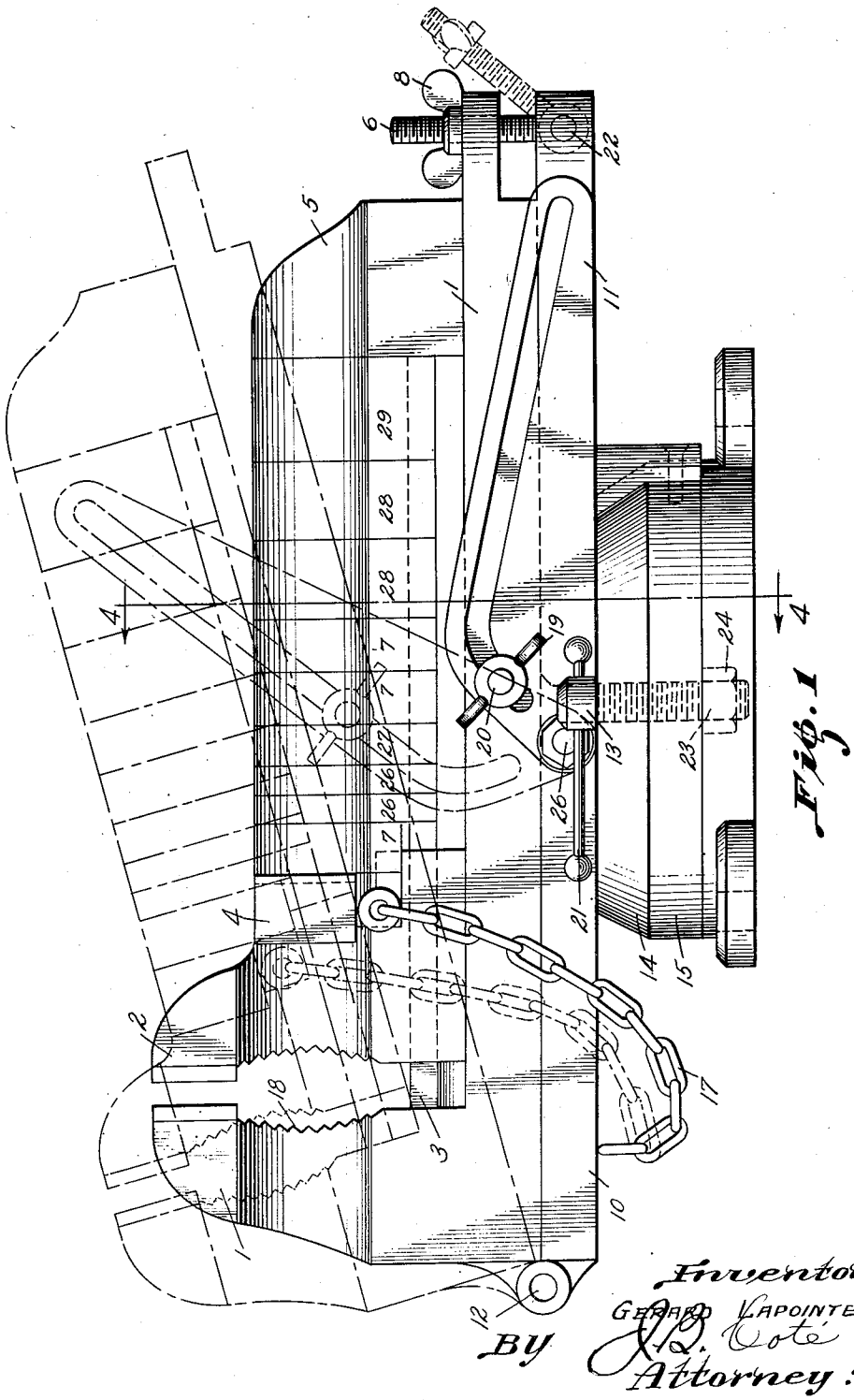


Fig. 1

Inventor:
GERARD LAPOINTE
By J. B. Coté
Attorney:

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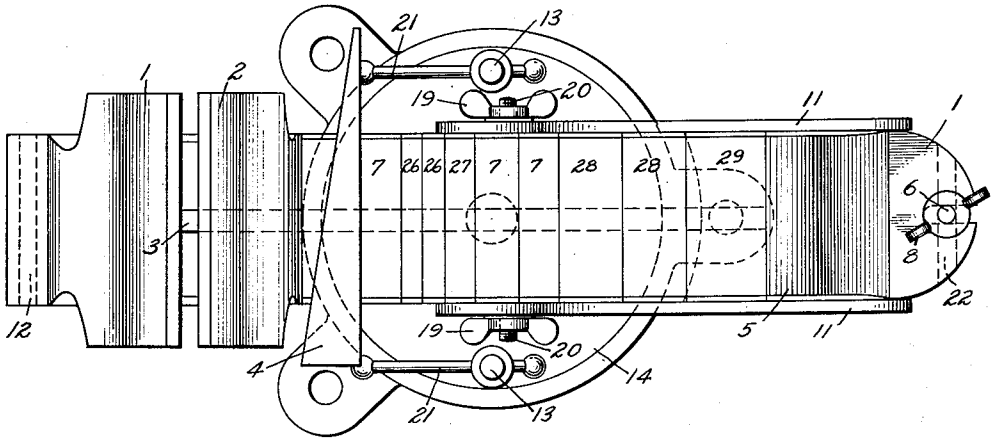


Fig. 2

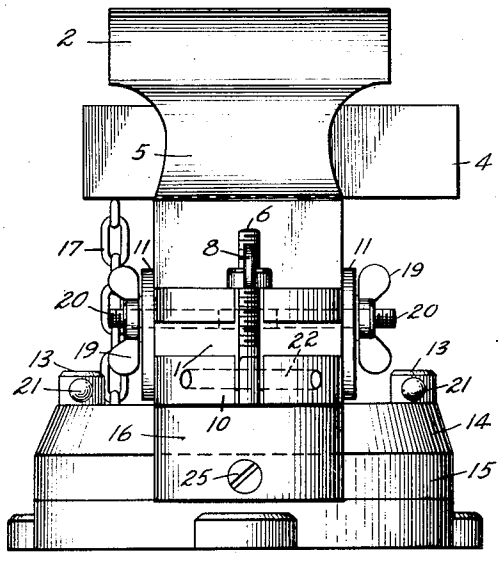


Fig. 3

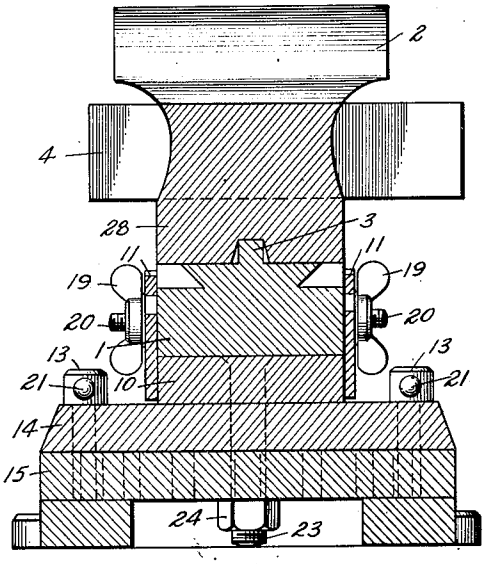


Fig. 4

Inventor:
GERARD LAPOINTE
BY J. B. Coté
Attorney:

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UNITED STATES PATENT OFFICE

2,503,160

VISE HAVING SLIDABLE JAW ACTUATED BY DRIVEN WEDGE

Gérard Lapointe, Quebec, Quebec, Canada

Application February 24, 1947, Serial No. 730,593
In Canada December 5, 1946

2 Claims. (Cl. 81—26)

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The invention relates to improvements in machinists' vises.

An object of the invention is to provide a vise wherein the jaws are drawn together by means of blocks and wedge, instead of screws or levers, for holding objects between the jaws.

Other objects, such as the economy of construction, efficiency and the compact arrangement of the parts will become apparent as the invention is better understood from the following description which, taken in connection with the accompanying drawings, discloses the preferred embodiment of the invention.

Referring to the drawings in which like reference numerals are employed to designate corresponding parts throughout the same,

Figure 1 is a side view of the vise. A dotted outline thereof shows the vise in a tilted position.

Figure 2 is a top plan view of the vise.

Figure 3 is a rear end view thereof.

Figure 4 is a sectional view taken on the line 4—4 of Figure 1 and illustrating the construction of the device.

Referring more in detail to the drawings:

The numeral 1 designates the left jaw of the vise and a horizontal beam being integral with it. This member is one of the essential parts of the vise. The jaw 1 is mounted on a bed 10 and is secured at one end thereof by means of a pivotal bolt 6, with a wing nut 8, and a pin 22. At the opposite end is a hinge 12.

The reciprocal jaw is designated by the numeral 2 and is horizontally slidable, having its under surface grooved for engaging a tongue 3. At the right end of the beam 1 is a stop block 5 integral with said beam. The space intervening between the block 5 and the jaw 2 is occupied with a plurality of blocks: 7, 26, 26, 27, 27, 28 and 29, varying in thickness from half an inch to two inches. The blocks have their under surface grooved for engaging the tongue 3.

A space is provided adjacent the jaw 2 for inserting therein a triangular wedge 4, the rear side of said jaw being non-parallel to the work-engaging face but parallel to the hypothenuse side of the triangular wedge 4. A chain 17 attaches the wedge 4 to the vise, and prevents the wedge becoming misplaced or lost.

Concave recesses having sharp corrugations 18 are provided on the inner surfaces of the jaws 1 and 2 for gripping circular objects, such as tubing.

The vise proper is mounted on a turntable 14 and a base plate 15.

The bed 10, the turntable 14 and the base plate

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15 are secured and assembled together by means of a master bolt 23 having an hexagonal nut 24.

The master bolt 23 functions also as a vertical pivot for the turntable 14. Two round head screws 13, with ball rods 21 for actuating them, are provided for securing the turntable in any desired horizontal position.

The vise is further stabilized by means of a guide 16 fastened to the base 15 with a flathead screw 25.

Means have been provided for tiltably mounting the vise on its base, as shown in Figure 1 by a dotted outline, to permit certain operations on clamped objects, without having to release the jaws and reposition the objects. Said means includes a hinge 12 and two slotted levers 11 fulcruming on pins 26. The vise may be secured in a desired tilted position by tightening wing nuts 19 which are screwed on each end of a bolt 20.

It will be easily understood, from the foregoing description, that the gripping power of the vise is obtained by means of forcing a wedge between the blocks and the slidable jaw, thus causing the jaws to reciprocate with great force. This operation is performed as follows: the jaws are first conveniently spaced by hand, for receiving the object to be fashioned, the triangular wedge is inserted in the space provided therefor, and the remaining space intervening is filled with blocks. The wedge is then driven in with force by means of a sledge-hammer, which will cause the jaws to instantaneously grip the object with great power.

For releasing the object from the jaws, it will only be necessary to disengage the wedge. This is done by applying sharp blows vertically on the wider end of the wedge, which will cause it to eject from the vise.

It becomes obvious from the foregoing description, that I have provided a device that is simple, efficient and capable of developing tremendous gripping force with a minimum of exertion from the operator, and to produce that force almost instantaneously.

It is to be understood that the device herein described, is to be taken as embodying the preferred form of the invention, and that various changes may be made in the shape, construction and arrangement of the parts, without departing from the scope of the invention.

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

1. A vise of the character described, including outer and inner jaws having confronting work-

engaging surfaces, the outer jaw being stationary and integral with one end of a beam mounted on a bed plate, a stop block extending upwardly from the other end of said beam and being integral therewith, the inner jaw being slidably positioned on said beam and being actuated towards the stationary jaw by means of a triangular wedge having a first vertical side positioned against an inner side of said inner jaw and having a second vertical side resting against one of a plurality of blocks positioned on said beam, said blocks having parallel vertical sides and being retained by said stop block, said inner side of said inner jaw and said first vertical side of said wedge being non-parallel with said work-engaging surfaces, and said second vertical side of said wedge and the vertical sides of said blocks being parallel with said work-engaging surfaces.

2. A vise of the character described in claim 1, a tongue extending from, and being integral with the surface of said beam for engaging complementary and aligned grooves in the under surface of said blocks.

GÉRARD LAPOINTE.

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