No. 638,835. Patented Dec. 12, 1899.

S. CORAN.

VISE.

(Application filed Sept. 30, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

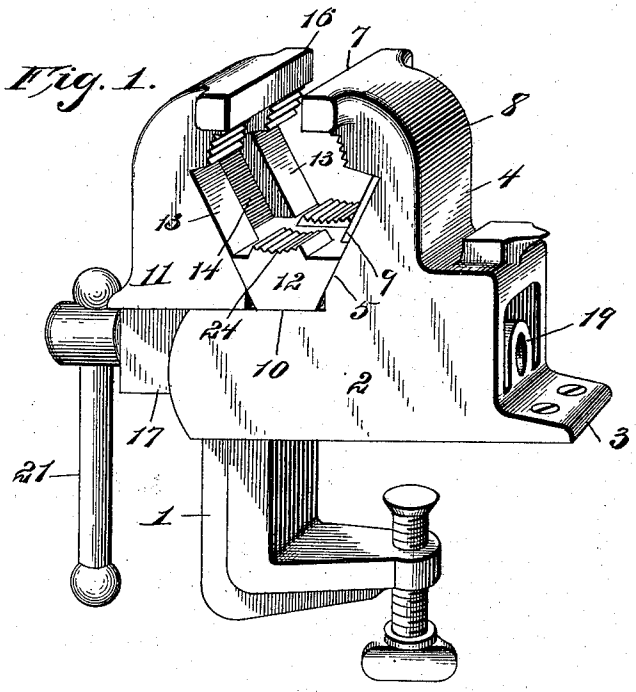

Fig. 2.

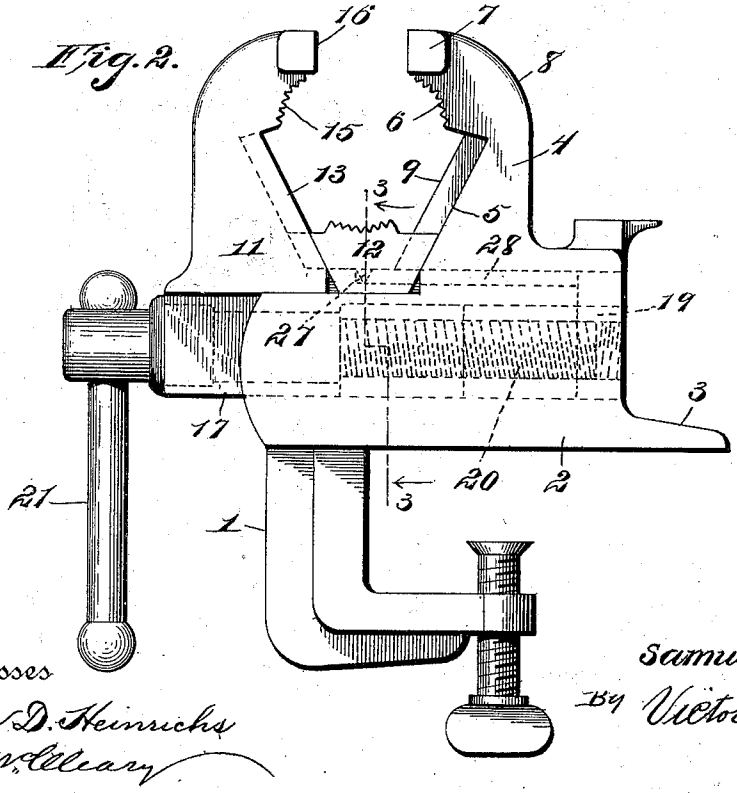

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Fig. 3.

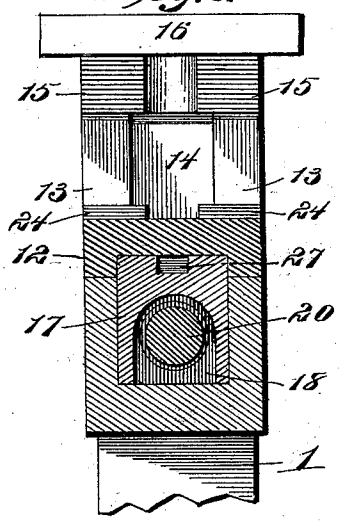


Fig. 4.

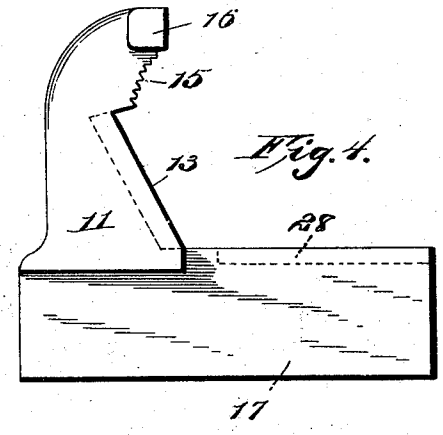


Fig. 5.

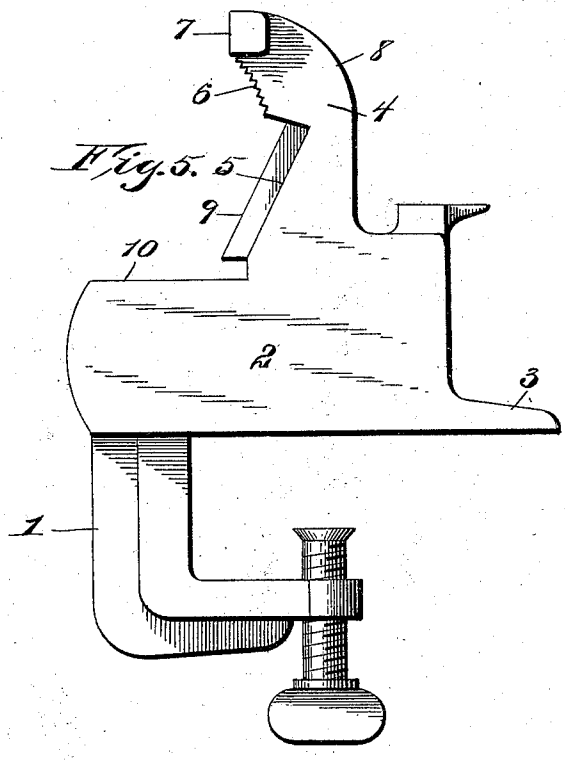
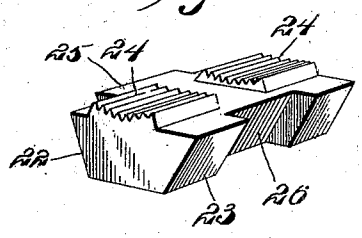


Fig. 6.



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UNITED STATES PATENT OFFICE.

SAMUEL CORAN, OF NEW YORK, N. Y.

VISE.

SPECIFICATION forming part of Letters Patent No. 638,835, dated December 12, 1899.

Application filed September 30, 1899. Serial No. 732,214. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL CORAN, a subject of the Czar of Russia, residing at 251 East Tenth street, New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Vises, of which the following is a specification.

My invention relates to vises; and its object is to provide a vise of improved construction which may be readily operated either as an ordinary bench-vise or as a pipe-vise and which will have an increased range of adjustment, thus adapting it for securing pipes and other articles of varying size and diameter.

The construction of the improvement will be fully described hereinafter in connection with the accompanying drawings, which constitute a part of this specification and its novel features will be defined in the appended claims.

In the drawings, Figure 1 is a view in perspective of a vise embodying the invention. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section on the line 3 3 of Fig. 2. Fig. 4 is a side elevation of the movable jaw of the vise detached. Fig. 5 is a side elevation of the fixed jaw and parts attached thereto, and Fig. 6 is a perspective view of the removable sliding block or jaw employed with the improvement.

The reference-numeral 1 designates a clamping-bracket of angle form provided with a clamping-screw and made integral with a hollow casing 2 of rectangular form in cross-section and provided at one end with a flange 3, formed with screw-holes.

4 designates a jaw projecting from the casing 2 and having an inclined inner surface 5, rounded inner toothed surfaces 6, a transverse bar or jaw proper, 7, and a rounded outer surface 8. From the inclined surface 5 projects a central rib or lug 9. The upper horizontal surfaces 10 of the case form a support for the movable jaw 11 and a removable sliding block 12.

The movable jaw 11 of the device shown detached in Fig. 4 is provided with inclined surfaces 13, divided by a central recess 14, rounded toothed surfaces 15, and a cross-bar 16, adapted to coact with the bar 7 of the fixed jaw. Integral with the jaw 11 is a block or slide 17, which fits within the hollow casing 2 of the fixed jaw. This slide-block is formed with a longitudinal recess 18 to adapt it to fit over an internally-threaded tubular socket 19, located within the casing 2 and integral with the latter. A screw 20 extends through the slide-block 17 and the threaded socket 19, the outer end of said screw being formed with a transverse opening, through which extends an operating-lever 21.

The removable sliding block 12 (shown detached in Fig. 6) is formed with oppositely-inclined surfaces 22 and 23 and upon its upper surface with curved or rounded toothed surfaces 24. The inclined surface 22 of the block is provided with a centrally-projecting lug 25 to fit within the recess 14 of the movable jaw 11, and the oppositely-inclined side 23 of the block is formed with a central recess 26, within which fits the projecting rib or lug 9 of the fixed jaw.

From the bottom of the block 12 depends a lug 27, adapted to fit a recess 28, formed in the upper surface of the slide-box 17 (see Fig. 3) to prevent lateral play of the block 12.

When the block 12 is removed from the vise, the latter is adapted for use as an ordinary bench-vise, the coacting bars or jaws proper, 7 and 16, serving to clamp the work through the action of the screw, which moves the jaw 11 to or from the fixed jaw 4, as will be readily understood.

When the device is to be used as a pipe-vise, the block 12 is interposed between the jaws 4 and 11, as shown in Figs. 1 and 2, and by the turning of the screw to move the jaws together the inclined surfaces of said jaws force the block upwardly. It will be observed that the toothed surfaces 6 and 15 of the jaws and the toothed surfaces 24 of the block 12 form segments or arcs of the same circle, as shown in Fig. 2, thus adapting them to bear at equidistant points upon a pipe or other circular body. The length of the inclined surfaces is such that the said toothed segmental surfaces may be forced close together to firmly clamp a pipe of small diameter or moved together to the extent required for pipes of different diameter.

I claim—

1. A vise comprising a fixed jaw, and a movable jaw, each provided with segmental toothed surfaces, and inclined surfaces; in

combination with a removable block formed with segmental toothed surfaces, and inclined surfaces; and means for moving said jaws to raise and lower said block.

2. A vise comprising a fixed jaw, and a movable jaw, each provided with segmental toothed surfaces, and inclined surfaces below the toothed surfaces; one of said inclined surfaces having a recess and the other a projecting rib; in combination with a removable block, formed on its upper surface with segmental toothed surfaces, and having its sides oppositely inclined; one of said sides being recessed to fit the rib on one of the jaws, and the other formed with a lug fitting the recess of the other jaw; and means for operating the movable jaw to raise and lower the block.

3. In a vise, the combination with a fixed jaw, of a hollow casing formed integral therewith; an internally-threaded socket within the casing; a movable jaw provided with a slide-block recessed to fit over said socket; a screw extending through the slide-block and socket; a removable block between the jaws, said block and jaws each having segmental toothed surfaces forming arcs of a common circle, and coacting inclined surfaces.

4. In a vise, the combination with a fixed jaw formed with a hollow casing, and having segmental toothed surfaces, inclined surfaces, and a cross-bar; of a fixed jaw provided with a recessed slide, and formed with segmental toothed surfaces, inclined surfaces, and a cross-bar; an internally-threaded socket within said hollow casing; a screw connecting the jaws adjustably; and a removable block formed with oppositely-inclined surfaces, coacting with those of the jaws, and having segmental toothed surfaces forming an arc of the circle described by the toothed surfaces of the jaws.

In testimony whereof I have affixed my signature in presence of two witnesses.

SAMUEL CORAN.

Witnesses:
JOSEPH LEHMILL,
JULIUS SCHAFFER.