

No. 683,931.

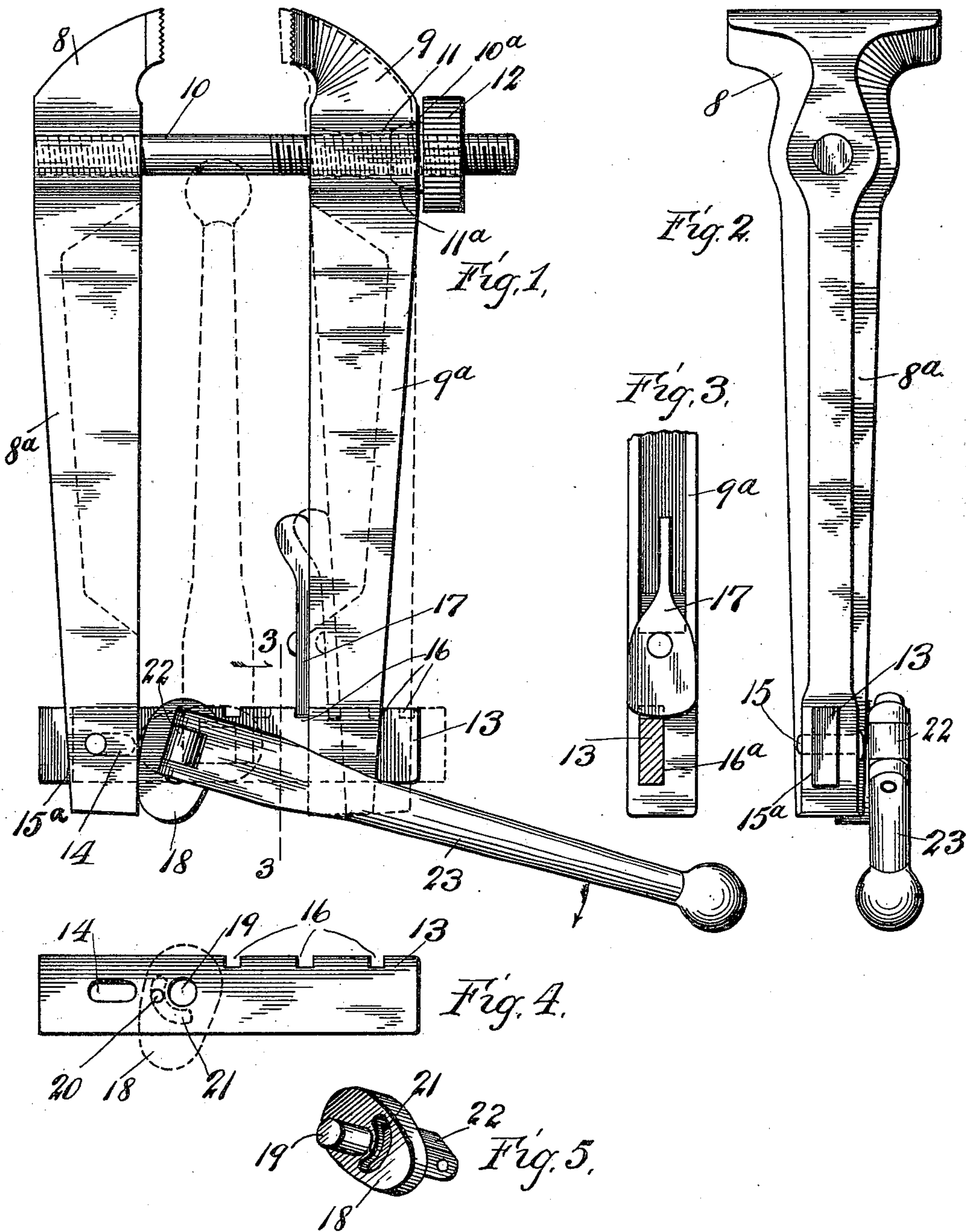
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J. GOODRICH.

VICE.

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(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

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WISE.

SPECIFICATION forming part of Letters Patent No. 683,931, dated October 8, 1901.

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To all whom it may concern:

Be it known that I, JOSEPH GOODRICH, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Vises, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

10 My invention relates to improvements in vises, and has particular reference to hand-vises—that is to say, such as are employed by “linemen” and those engaged in pursuits where it is necessary to have a simple, compact, and efficient portable tool.

15 The object of my invention is to provide a vise of this character in which supplemental means are provided for insuring a powerful and positive hold on the object grasped by the jaws of the vise after they have been adjusted or forced together as far as possible by hand.

20 Another object is to provide means to preserve the parallelism of the cooperating faces of the jaws irrespective of the size of the objects to be held thereby.

25 The invention comprises a stationary jaw and a movable jaw, having pivotal action, capable of adjustment to and from each other by means of a screw and thumb-nut in an ordinary manner. The jaws have extensions or legs, which are joined at their extremities by a cross piece or bar, which has a sliding connection with one of the extensions, the other end of the bar being notched at one edge and passed through an aperture in the other extension.

30 Suitable means are employed for holding the extension of the movable jaw in any desired position with relation to the bar, and a cam working against the extension, having sliding connection with the bar, forces the legs apart, thereby bringing the jaws closer together and more firmly against the object held thereby. The extensions may be adjusted relatively to each other by means of the bar connecting the same and the parallelism of the jaws maintained at all times.

35 In the accompanying drawings, Figure 1 is a side elevation of a vise, showing my invention applied thereto. Fig. 2 is a rear elevation. Fig. 3 is a section on the line 3 3 of Fig.

1. Fig. 4 is a detail of the mechanism for adjusting the extensions or legs of the vise, and Fig. 5 is a detail of the adjusting-cam.

55 8 and 9 designate the jaws or cooperating members of the vise, the former being stationary and the latter movable, the jaw 8 having a screw 10 fixed thereto, which passes through an aperture 11, terminating in a semispherical enlargement 11^a in the jaw 9, adapted to receive a rounded washer 10^a, interposed between the movable jaw and a thumb-nut 12 for adjusting the jaws to and from each other. By means of this semi-spherical recess and washer the movable jaw is capable of a pivotal movement when the jaws are given their final adjustment. Each jaw has a leg or extension 8^a and 9^a, respectively, preferably channeled to avoid unnecessary weight, and the extensions are connected at their extremities by a cross piece or bar 13, which has at one end an elongated slot 14, through which passes a pin 15, whereby the cross-bar or connecting-piece has a sliding movement in an aperture 15^a in the extension 8^a of the jaw 8. The other end of the bar passes through an aperture 16^a in the extension of the movable jaw 9, and the extension is held in any position on the cross-bar by means of a latch or catch 17, pivoted to the extension and intended to engage the notches 16, provided along one edge of the cross-bar.

75 Carried by the cross-bar 13 by means of a trunnion 19 and capable of partial rotation is a cam 18, adapted to be moved against the extension which receives the slotted end of the bar 13, a lever or arm 23, bifurcated at one end to receive a lug 22 of the cam to which it is pivoted, furnishing the means for moving the cam.

80 A pin or stud 20 projects from the bar 13 and enters a curved recess 21 on the under side of the cam 18, serving as a stop to limit the movement of the cam.

85 The operation is as follows: The object is clamped between the jaws by moving up the thumb-nut 12 on the screw 10, the legs of the jaws having been adjusted to the approximate size of the object through the medium of one of the notches 16 and the pivoted latch 17 in order that the parallelism of the jaws may be preserved. This grasping of the ob-

ject is merely preliminary or initial and for some work is all that is required; but in many instances the character of the object is such that the hand of the operator has not
 5 sufficient strength to move the jaws so that they will grasp and hold it with sufficient firmness. The jaws having been adjusted as heretofore described, the cam is moved
 10 against the extension of the fixed jaw, which results in forcing the extensions apart, the bar 13 sliding the length of the slot 14 through the extension 8^a and the aperture 11 being greater in diameter than the screw 10, and by reason of the pivotal movement of
 15 the jaw 9 it and the jaw 8 are forced together and given an additional and more powerful grasp on the object. To remove the object, the cam is thrown out of engagement with the leg 8^a and the thumb-nut unscrewed.

20 While I have described and shown my invention in connection with a hand-vise, it is obvious that it may be employed with table or bench vises. In fact, it is capable of adaptation to a vise of almost any description.

25 The handle or lever 23 for operating the cam may be moved out of the way by throwing it over on its pivot between the jaws of the vise, as will be seen on reference to Fig. 1, the lever in the position referred to being
 30 shown in dotted lines.

The end of the latch 17 which is adapted to engage the notches of the bar 13 is enlarged and of sufficient weight to cause it to fall automatically into engagement with the notches
 35 whenever they are brought into the path of the latch.

I claim as my invention—

40 1. In a vise, in combination, a stationary jaw, a movable jaw, means for adjusting the jaws, a bar having a positive adjustment with one of the jaws and a sliding connection with the other, and means for adjusting the bar relatively to the stationary jaw.

45 2. In a vise, in combination, a stationary jaw having an extension, a movable jaw having an extension provided with an aperture, a bar having a sliding connection with the extension of the stationary jaw and the free end of which is provided with notches and
 50 passes through the aperture of the extension of the movable jaw, a catch for engaging one of the notches, and means for sliding the bar in the extension.

55 3. In a vise, in combination, a stationary member having an extension, a movable member having an extension, a screw for adjusting the members, the movable member having pivotal movement on the screw, a bar for

spreading the extensions, one end of which has a sliding movement on one of the extensions, and the other extension being adjustably secured to the opposite end of the bar. 60

4. In a vise, in combination, a stationary jaw having an extension, a movable jaw having an extension, a cross-bar for spreading 65 the extensions one of which extensions has slidable movement thereon, means for adjusting the jaws, a cam for separating the extensions to compress the jaws, and a handle pivoted to the cam and adapted to be 70 moved to a position between the jaws.

5. In a vise, in combination, a fixed jaw, a movable jaw, means for adjusting the jaws, a cross-bar connecting the extensions of the jaws and having a sliding movement in one 75 of the extensions and being adjustably secured to the other, and means for spreading the extensions to compress the jaws.

6. In a vise, in combination, the jaws, means for adjusting the same, a bar connecting the 80 extremities of the jaws, the latter having apertures therein, a bar one end of which has a sliding movement in the aperture of the extremity of one of the jaws, and the other adjustably held in the aperture of the ex- 85 tremity of the other jaw, and a cam adapted to compress the jaws.

7. In a vise, in combination, the jaws, a screw for adjusting the same, extensions carried by the jaws and having apertures at the 90 extremities thereof, a bar provided with an elongated slot at one end and a series of notches at the other mounted in the apertures of the extensions, means for holding the extension carrying the notched end against 95 movement, and a cam adapted to spread the extensions.

8. In a vise, in combination, a stationary jaw having an extension, a movable jaw also having an extension, a screw for adjusting 100 the jaws, a cross-bar slidably mounted in the extremity of the leg of the stationary jaw and provided with notches at one edge, the said notched end of the bar passing through an aperture in the extension of the movable jaw, 105 a pivoted latch carried by the extension of the movable jaw adapted to engage one of the notches of the bar to hold the extension against movement, and a cam carried by the bar and adapted to be moved against the ex- 110 tension having the sliding connection with the bar.

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Witnesses:

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