

No. 723,905.

PATENTED MAR. 31, 1903.

C. W. ORVIS.
VISE.

APPLICATION FILED SEPT. 11, 1902.

NO MODEL.

Fig. 1.

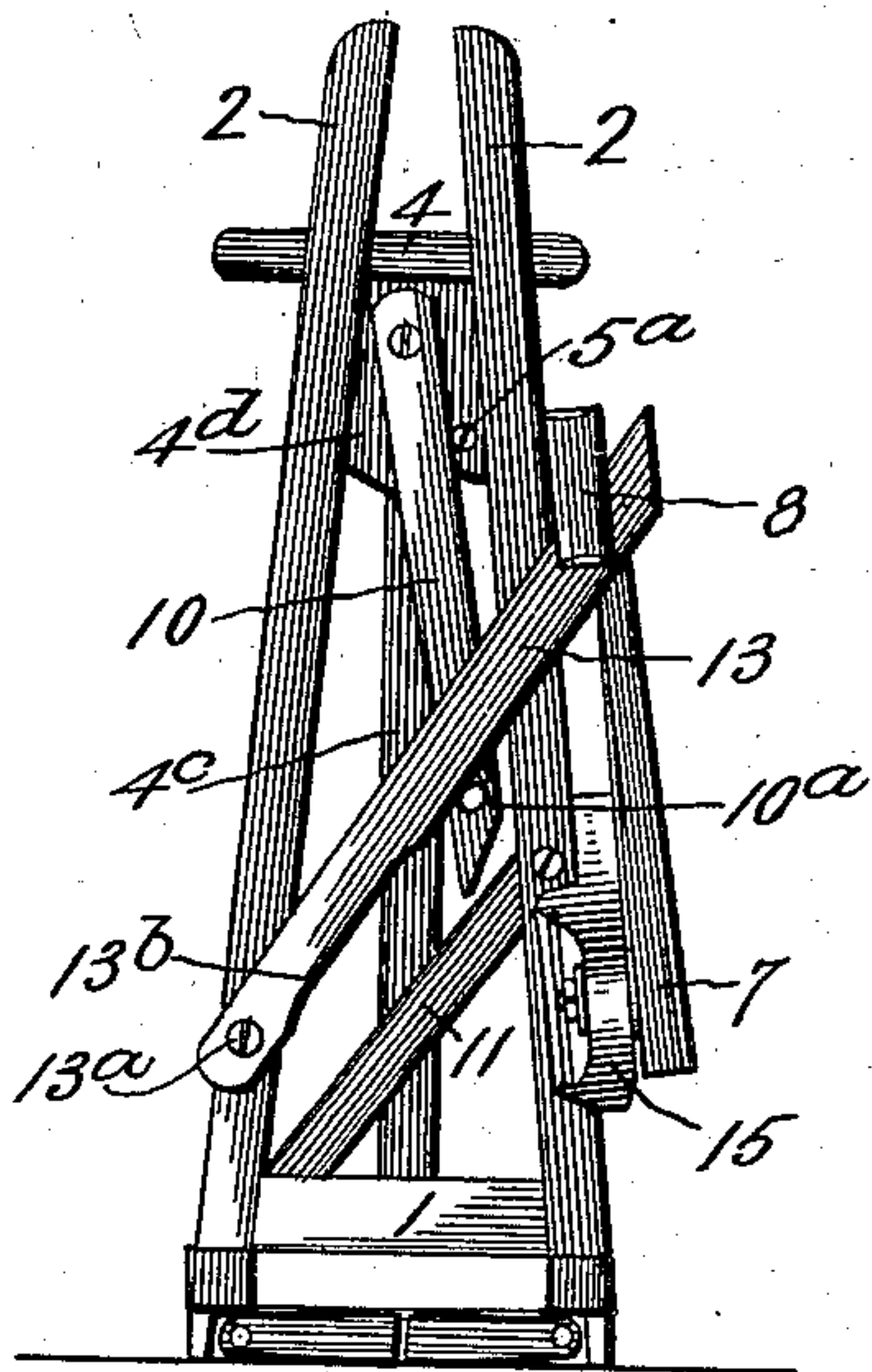


Fig. 2.

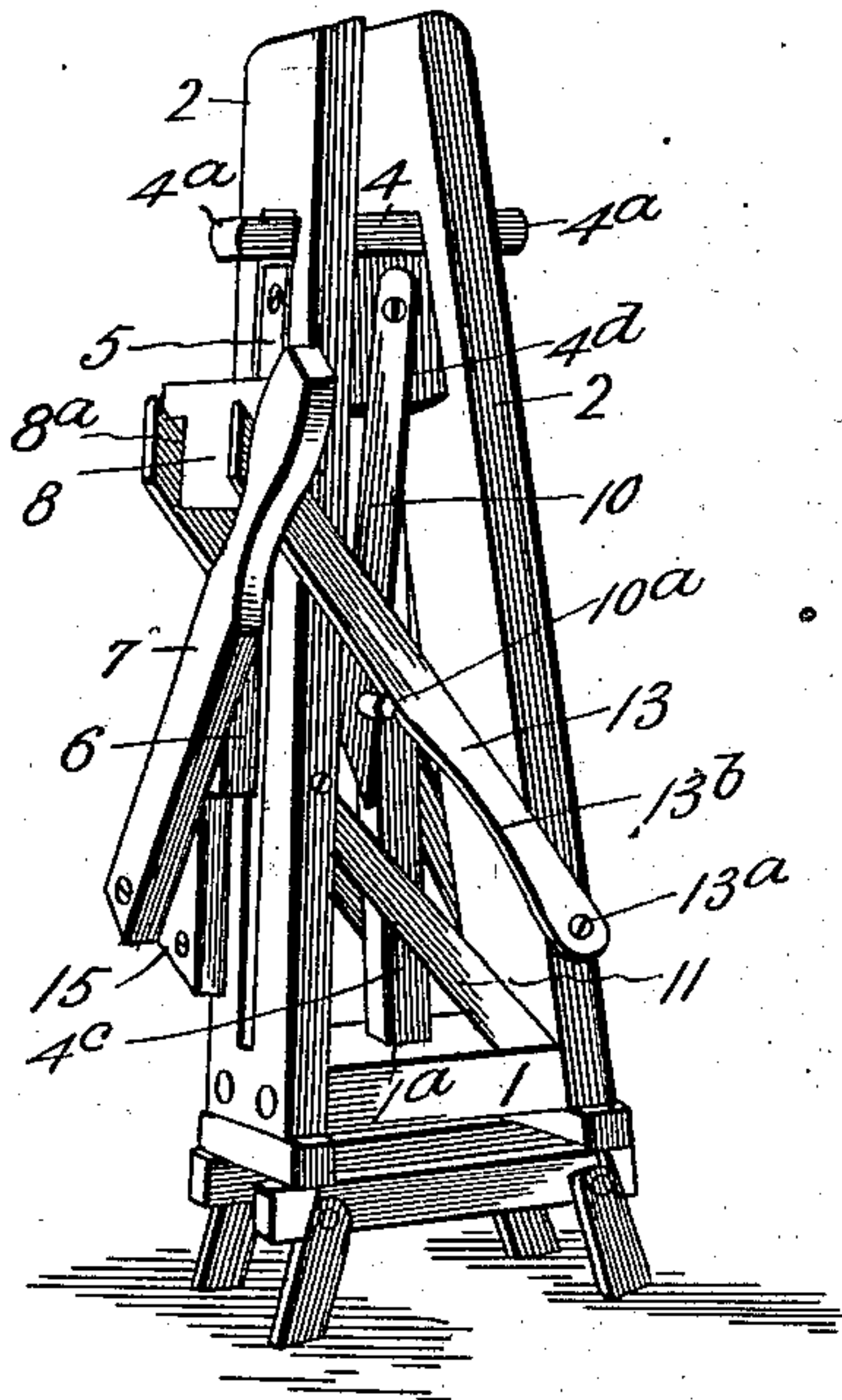


Fig. 3.

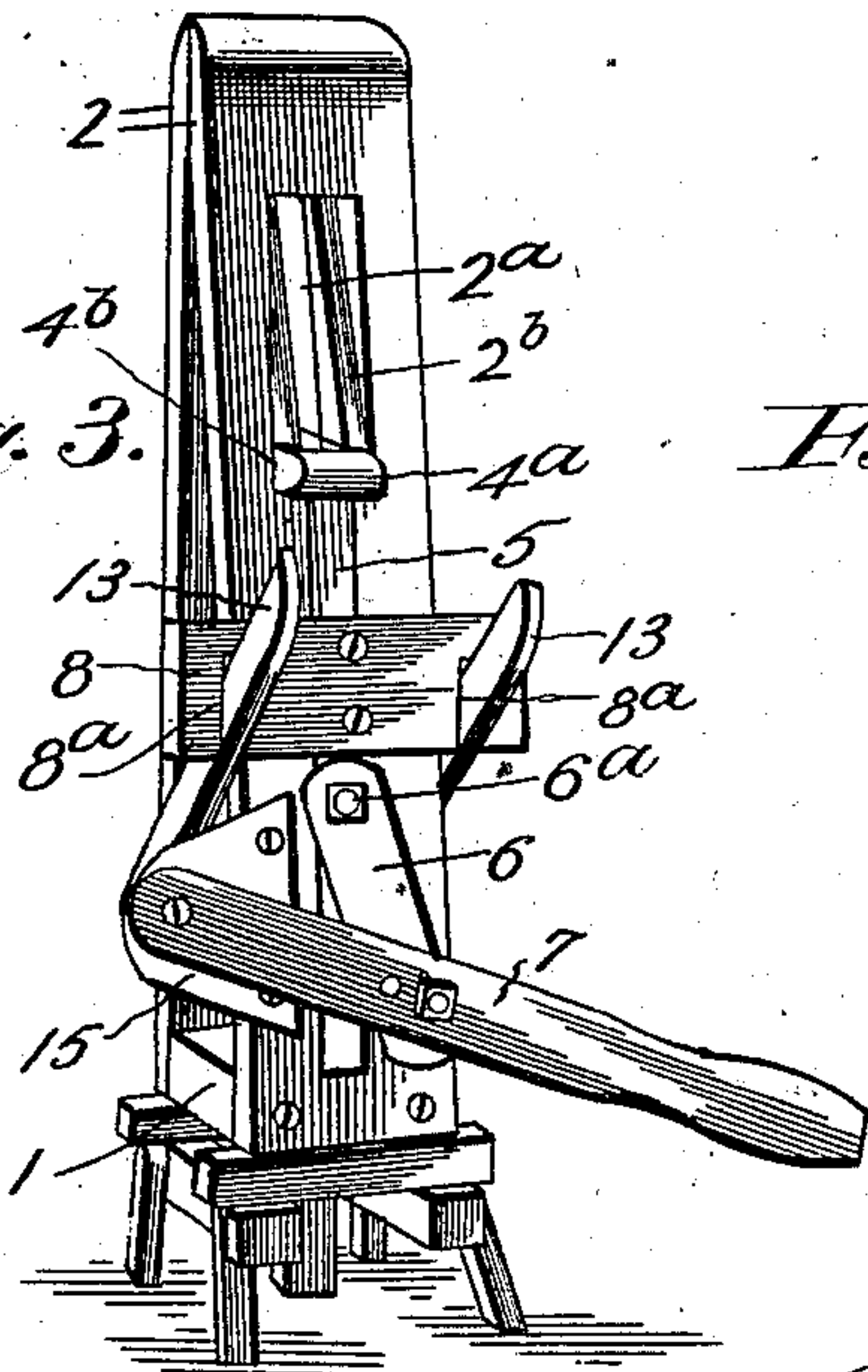
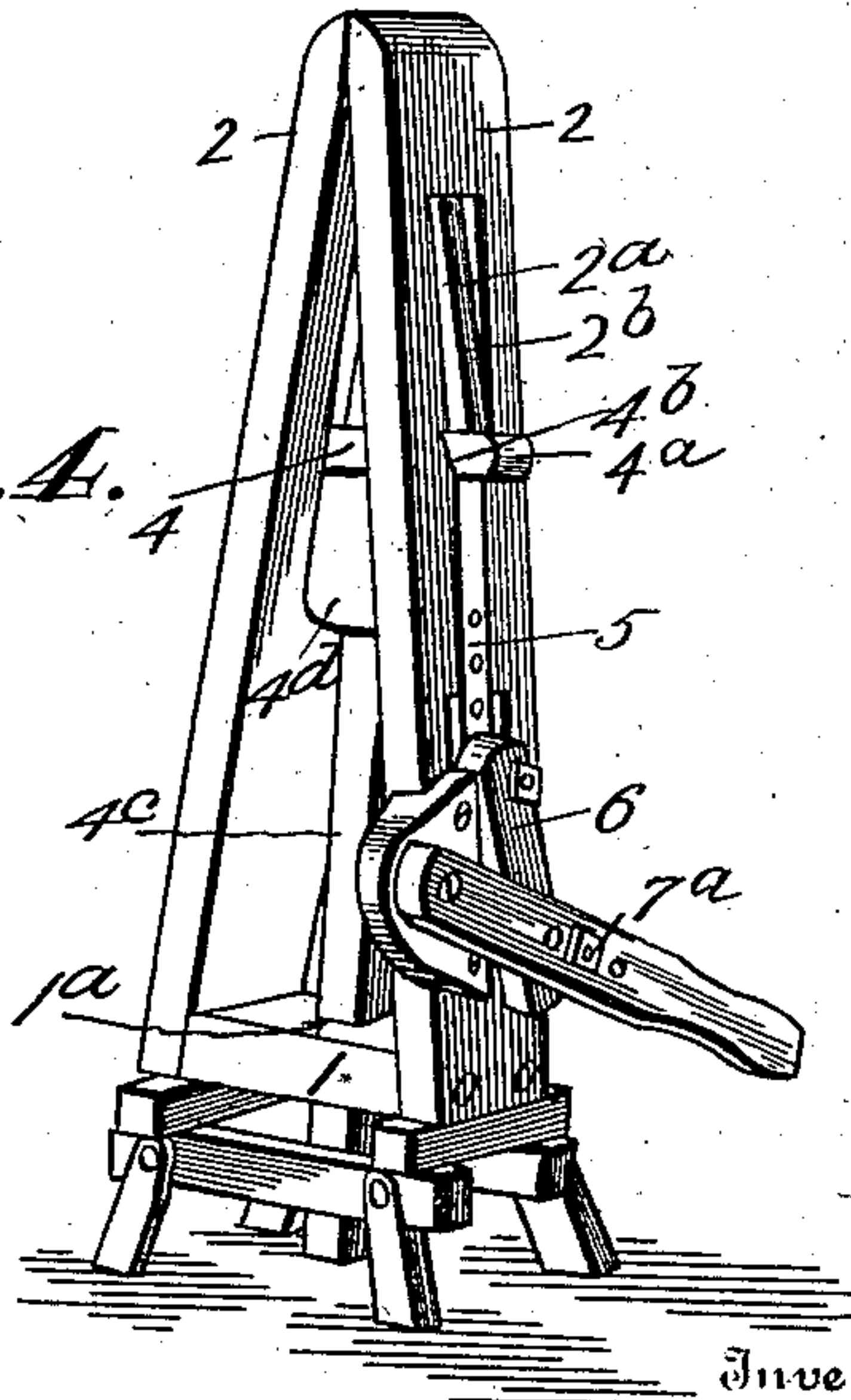


Fig. 4.



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SPECIFICATION forming part of Letters Patent No. 723,905, dated March 31, 1903.

Application filed September 11, 1902. Serial No. 122,968. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. ORVIS, a citizen of the United States, residing at West-plains, in the county of Howell and State of Missouri, have invented certain new and useful Improvements in Vises; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to vises, and is designed particularly for carpenters and blacksmiths to hold their work. Speaking generally, it embodies two spring-jaws, which may be brought together by the pressure of a novel arrangement of levers and which when clamped upon a piece of material will hold by friction engagement of parts connected to the lever.

In the accompanying drawings, Figure 1 is a side elevation. Figs. 2 and 3 are respectively perspective views of the device. Fig. 4 is a perspective view of a modification which is particularly suitable for carpenters' use.

Referring specifically to the drawings, 1 indicates a base-block, to the ends of which the lower ends of the jaws 2 are secured. These jaws clamp at the top and are of sufficient height to be convenient for the workmen. They are bolted or otherwise firmly secured to the base-block and incline upwardly toward each other. The clamping action is effected by means of a cross-bar 4, which extends through slots 2^a, formed in each of the jaws. The cross-bar is headed, as at 4^a, and the heads slide in ways 2^b, formed adjacent to the slots for that purpose. The heads are beveled, as at 4^b, to facilitate the sliding action. The cross-bar joins to a bar 4^c, which moves vertically between the jaws and through a guide-opening 1^a, formed in the base-block. At the top of the bar 4^c is a head 4^d, which is joined to the operating-lever 7 by means of links 5 and 6. The link 5 is joined to the head 4^d by a bolt 5^a, the links 5 and 6 by a bolt 6^a, and the link 6 and the lever 7 by a bolt 7^a. These bolts are loose enough to allow sufficient play for the movement of

the parts, and the connections between the links 5 and 6 and the link 6 and the lever 7 are adjustable by means of a series of bolt-holes, as shown. The lever 7^a is fulcrumed to a block 15, which is firmly secured to one of the jaws. The link 5 slides in a groove in one of the jaws formed for that purpose.

The parts above described comprise what I term the "carpenter's vise." (Illustrated in Fig. 4.) It will be seen that by downward pressure on the lever the action of the heads 4^a draws the jaws together. When the lever is released and brought up, the wedge action of the head 4^d causes them to open.

To increase the holding effect of the vise, I provide the additional parts indicated in Figs. 1, 2, and 3. These parts comprise bars 10, which are pivotally hung from each side of the head 4^d, between the jaws. These bars are beveled at their lower ends to strike upon inclines 11, set upon the base-block. A pair of levers 13 are pivoted at 13^a to one of the jaws and extend across at an incline and beyond the other jaw. Their free ends engage under a plate 8, which is bolted to the sliding link 5. At 10^a are pins which project from the bars 10 under and in contact with the levers 13. When the vise is operated by means of the lever 7, the bars 10 are swung sidewise by reason of the contact of their lower ends with the inclines 11. This forces the pins 10^a in friction-binding engagement with the levers 13, the levers being properly shaped, as at 13^b, to accommodate the movement. At the same time the levers are forced down by the movement of the plate 8, which has a wedge action between the jaw on which it slides and the levers 13. The plate is recessed and beveled at 8^a to embrace and provide a wedge engagement with the levers. The friction of the heads 4^a in the ways 2^b and of the pins 10^a against the levers 13 and of the plate 8 between the levers 13 and the jaw is sufficient to effect a secure clamping action, which will hold the work firmly.

All parts of this device except the bolts may be formed of wood, and no special parts or castings are required, and it may be constructed at small expense by any one of ordinary skill.

What I claim as new is—

1. In a vise, the combination with the slot-

ted jaws, of the cross-bar extending through the slots and having heads which slide against the back of the jaws to close the same, and a wedge between the jaws to open them and
5 means to raise and lower the cross-bar, substantially as described.

2. In a vise, the combination with the base-block and the opposing inclined jaws secured thereto, of the cross-bar bearing against the
10 back of each jaw and slidable thereon and having a wedge between the jaws to open them, and a lever connected to the cross-bar to raise and lower the same, substantially as described.

15 3. In a vise, the combination with the jaws, of the sliding cross-bar engaging the back of each jaw to bring them together, a lever connected to the cross-bar to raise and lower the same, the bars hung from the cross-bar be-
20 tween the jaws and having projections, and

the levers actuated by the movement of the said lever to frictionally bind upon the projections, substantially as described.

4. In a vise, the combination with jaws and means to close the same, of holding means 25 therefor comprising the swinging bars connected to the jaws and having projecting pins, the inclines upon which the bars strike to cause lateral movement thereof, levers having friction contact with the pins, and 30 the wedge-plate bearing with friction between the levers and one of the jaws and connected to the actuating means of the vise, substantially as described.

In testimony whereof I affix my signature 35 in presence of two witnesses.

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Witnesses:

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