A. JOHNSON.

VISE FOR DRILL PRESSES.

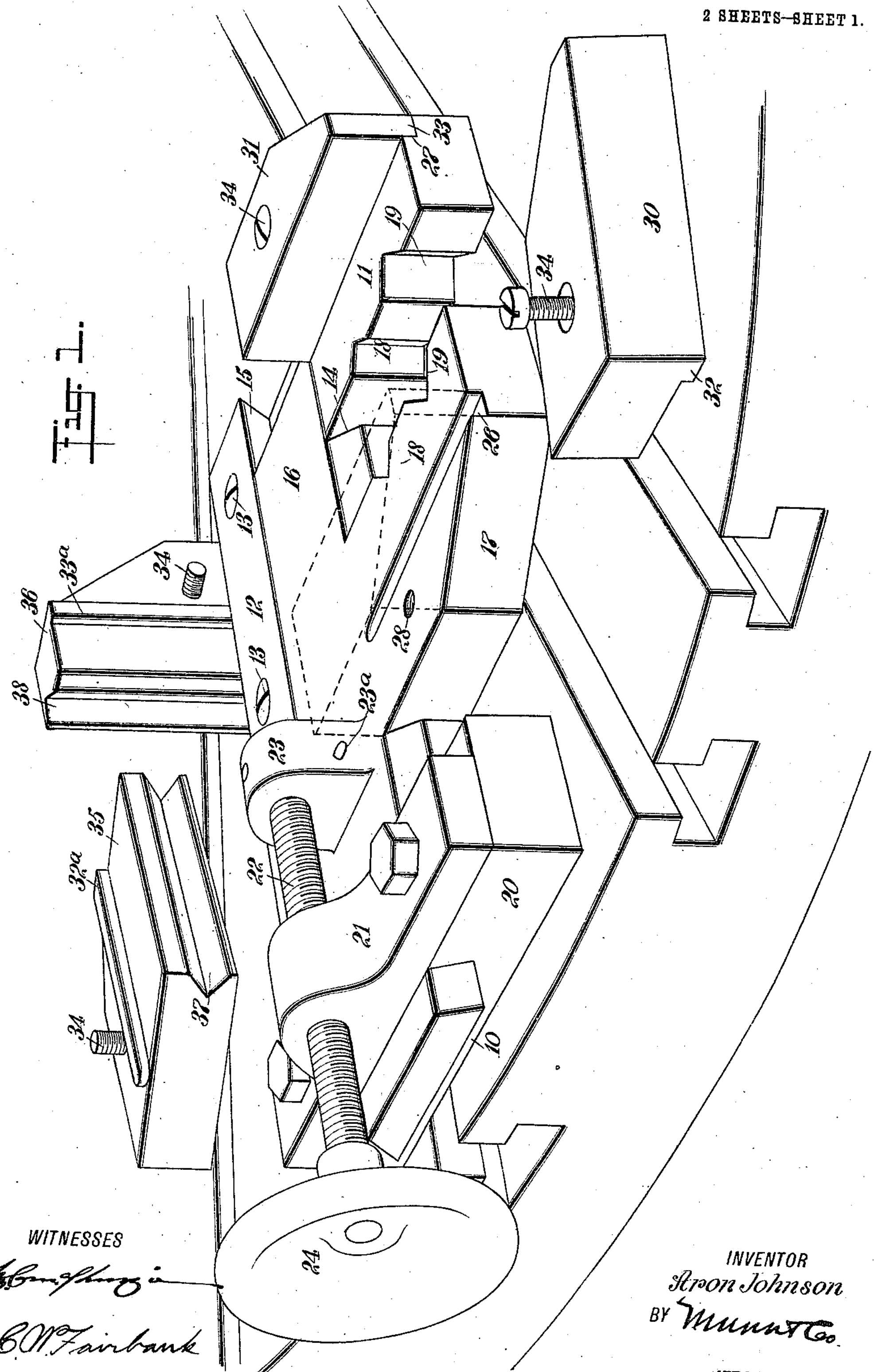
APPLICATION FILED JAN. 29, 1910.

977,878.

Patented Dec. 6, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

[signature]

C. W. Fairbank

INVENTOR

Aron Johnson

BY Munn & Co.

ATTORNEYS

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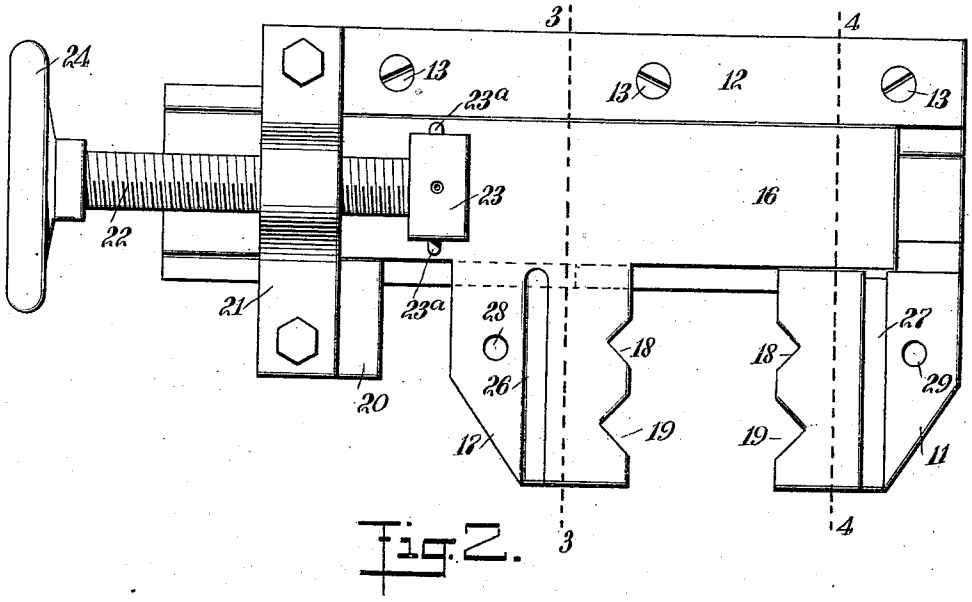

Fig. 2.

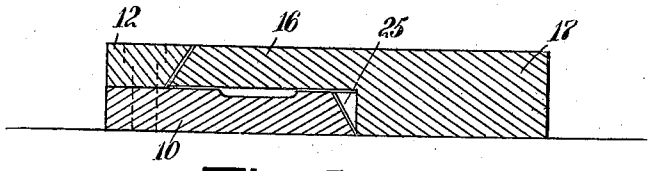

Fig. 3.

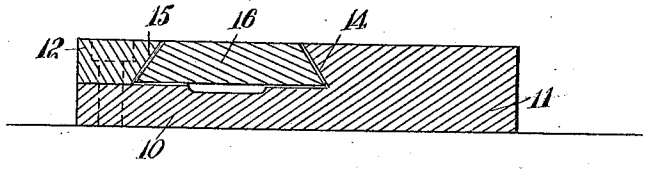

Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

ARON JOHNSON, OF NEW YORK, N. Y.

VISE FOR DRILL-PRESSES.

977,878. Specification of Letters Patent. **Patented Dec. 6, 1910.**

Application filed January 29, 1910. Serial No. 540,845.

To all whom it may concern:

Be it known that I, ARON JOHNSON, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Vise for Drill-Presses, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in vises, and more particularly to a type of vise which is adapted for use upon the bed plate or table of a drill press to hold small objects to be drilled.

My improved vise involves a base plate which may, if desired, be temporarily clamped to the table of the drill press or may be held in position by hand. This base plate is provided with a jaw and a slide having a second jaw, which may be moved toward and from the first jaw by a reciprocation of the slide. The vise is very simple in construction and is sufficiently powerful to rigidly hold any small object which it is desired to drill. The jaws are provided with removable auxiliary jaws, whereby objects of larger size or different character may be held.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a perspective view of a vise constructed in accordance with my invention, and two pairs of auxiliary jaws for use in connection therewith; Fig. 2 is a top plan view of the vise; and Figs. 3 and 4 are transverse sections on the lines 3—3 and 4—4, respectively, of Fig. 2.

The specific vise illustrated includes a base plate 10, having a smooth lower surface adapted to rest upon the table of a drill press, and having a jaw 11 extending outwardly from one edge thereof adjacent one end. The under surface of the jaw is in the plane of the under surface of the plate, but the jaw is somewhat thicker than the body of the plate. A strip or cleat 12 is secured to the upper surface of the plate along the edge opposite to the jaw 11, the combined thicknesses of the plate and strip being equal to the thickness of the jaw, so that the upper surface of the strip or cleat lies in the plane of the upper surface of the jaw 11. The strip or cleat may be secured in position in any suitable manner, as, for instance, by screw bolts 13. The end face 14 of the jaw above the body of the plate is undercut, as is also the side face 15 of the strip 12 which is toward the jaw. This produces a dovetailed groove in which may move a slide 16. The slide has integral therewith at one edge, a jaw 17, similar to the jaw 11. The jaw 17 is of greater thickness than the slide 16 and its under surface lies in a plane with the plane of the under surface of the plate and the jaw 11. The opposed faces of the two jaws are substantially parallel, so that as the slide is moved longitudinally of the plate, the opposed faces of the jaws may be brought together or toward each other to grip any desired object. Preferably, these opposed faces are provided with opposed pairs of recesses 18 and 19, in which spherical, cylindrical or other bodies having non-parallel sides, may be rigidly held.

At the end of the plate opposite to the jaw 11, I provide a lug or extension 20 integral with the plate and undercut to constitute a guide for the side of the rear end of the slide, and also serving to support one end of a transverse bar or bearing member 21. The opposite end of the bearing member 21 is secured to the end of the strip or cleat 12. A rod 22 has threaded engagement with the bearing member 21 and its inner end is rotatably mounted in a lug or projection 23 on the slide. Suitable pins 23ª hold the rod against longitudinal movement in respect to the lug, and a suitable handle 24 serves for the rotation of the rod. By rotating the rod, the latter, as well as the slide, may be moved longitudinally and the jaws moved toward or from each other.

The side edge of the plate over which the jaw 17 moves, is cut away to form a beveled face 25 for a distance equal to the length of the jaw 17 and at the end opposite to the jaw 11. This permits the parts to be disassembled when the jaws are moved apart to the limiting position, and the screws holding the bearing member 21 and the cleat 12 in position are removed.

The member 16 cannot be lifted directly upward, as its beveled face engages beneath the face 14, as indicated in Fig. 2, and the member 16 cannot be moved laterally as the jaw 17 engages with the side of the base. By cutting away the base to form the beveled

face 15, the member 16 may be tilted to lower the jaw 17 and thus permit the separation of the members.

In connection with this vise, I preferably provide auxiliary jaws which may be detachably secured to the jaws 11 and 17. To facilitate the attachment of these auxiliary jaws, the jaws 11 and 17 are provided with parallel grooves 26 and 27, and threaded apertures 28 and 29 in their upper faces. If it is desired to hold a piece of work of greater width than the distance between the jaws 11 and 17, I may employ two jaws 30 and 31. These auxiliary jaws have ridges or flanges 32 and 33 along their under surface and adapted for engagement in the grooves 26 and 27 of the main jaws. Screw bolts 34 are adapted to enter the threaded openings 28 and 29, to lock the auxiliary jaws in position.

If it is desired to hold a long rod or pipe in order to drill a transverse opening therethrough intermediate its ends, I employ two auxiliary jaws 35 and 36. These jaws have flanges 32^a and 33^a, similar to the flanges 32 and 33 and adapted to enter the grooves in the upper faces of the jaws 17 and 11. These auxiliary jaws, save for their flanges, are disposed entirely above the plane of the upper surface of the jaws 11 and 17, and their opposed faces are provided with longitudinal grooves 37 and 38, within which a pipe or rod may be rigidly held.

In using either pair of auxiliary jaws, the flanges serve to resist any tendency of the auxiliary jaws to spread apart, and thus relieve the screw bolts 34 of the main lateral thrust.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A device of the class described, comprising a base having a jaw extending outwardly therefrom at one edge and adjacent one end and having a groove extending longitudinally along said base in the upper surface thereof, a slide mounted within said groove and a jaw carried by said slide and adapted to coöperate with the first-mentioned jaw, the under surface of both of said jaws being in the plane of the under surface of the base.

2. A device of the class described, comprising a base having a jaw at one side thereof with its under surface in the plane of the under surface of the base, and having its upper surface above the plane of the upper surface of the base, a slide mounted upon said base, a detachable plate for holding said slide in engagement with the base, but permitting its longitudinal movement, and a jaw carried by said slide and having a portion thereof in engagement with the side of the base and having its under surface in the plane of the under surface of the first-mentioned jaw.

3. A device of the class described, comprising a base having a jaw extending outwardly from one side edge, a slide movable longitudinally of said base, means for preventing movement other than said longitudinal movement, and a jaw carried by said slide and adapted to coöperate with the first-mentioned jaw, the under surface of both of said jaws being in the plane of the under surface of the base.

4. A device of the class described, comprising a base having a jaw extending outwardly therefrom at one edge and having its under surface in the plane of the under surface of the base, a slide movable lengthwise of said base and having a jaw, the under surface of which is in the plane of the under surface of the base and of the first-mentioned jaw, a transverse member secured to said base and extending across said slide, and a screw bolt movable through said member and having engagement with said second-mentioned jaw for moving the latter and said slide lengthwise of the base.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARON JOHNSON.

Witnesses:
C. W. SMITH,
CHARLES MOLANDER.