

J. R. LONG.

BENCH VISE.

APPLICATION FILED JULY 6, 1909. RENEWED MAR. 24, 1910.

958,659.

Patented May 17, 1910.

2 SHEETS—SHEET 1.

FIG. 1.

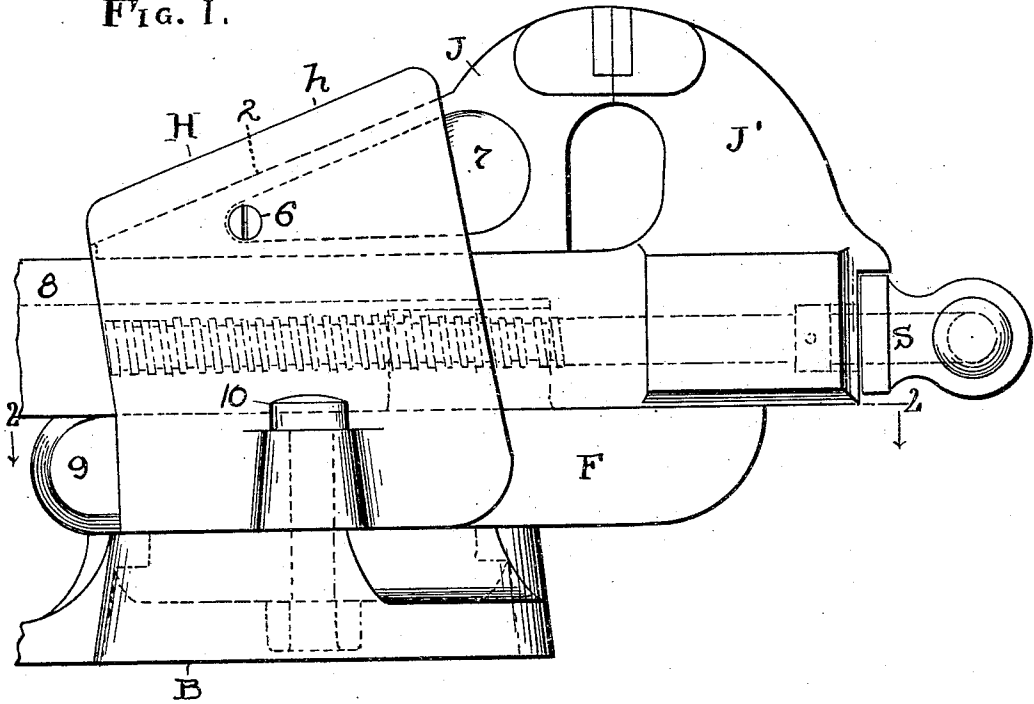
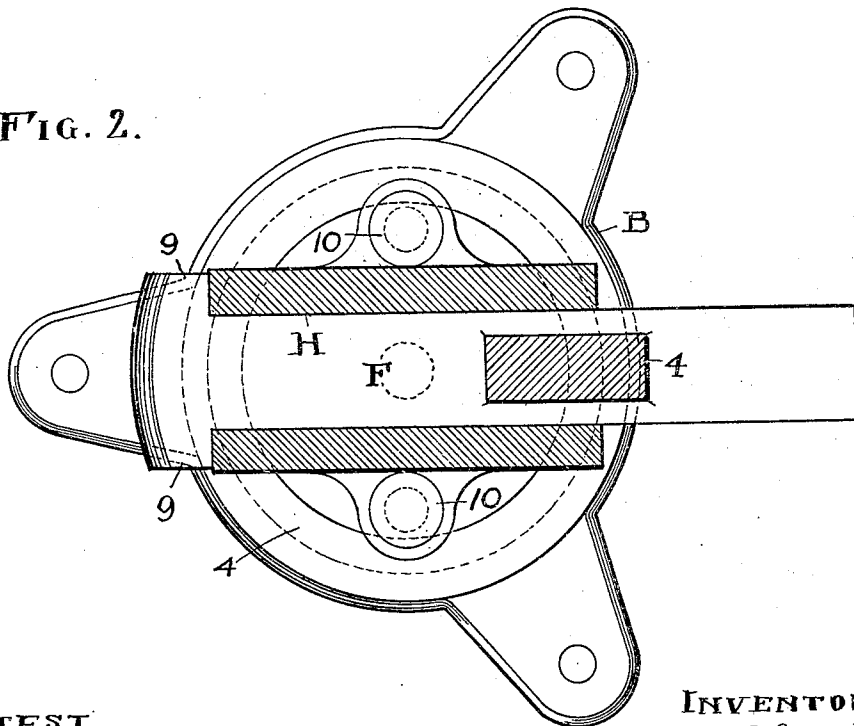


FIG. 2.



ATTEST
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2 SHEETS—SHEET 2.

FIG. 3.

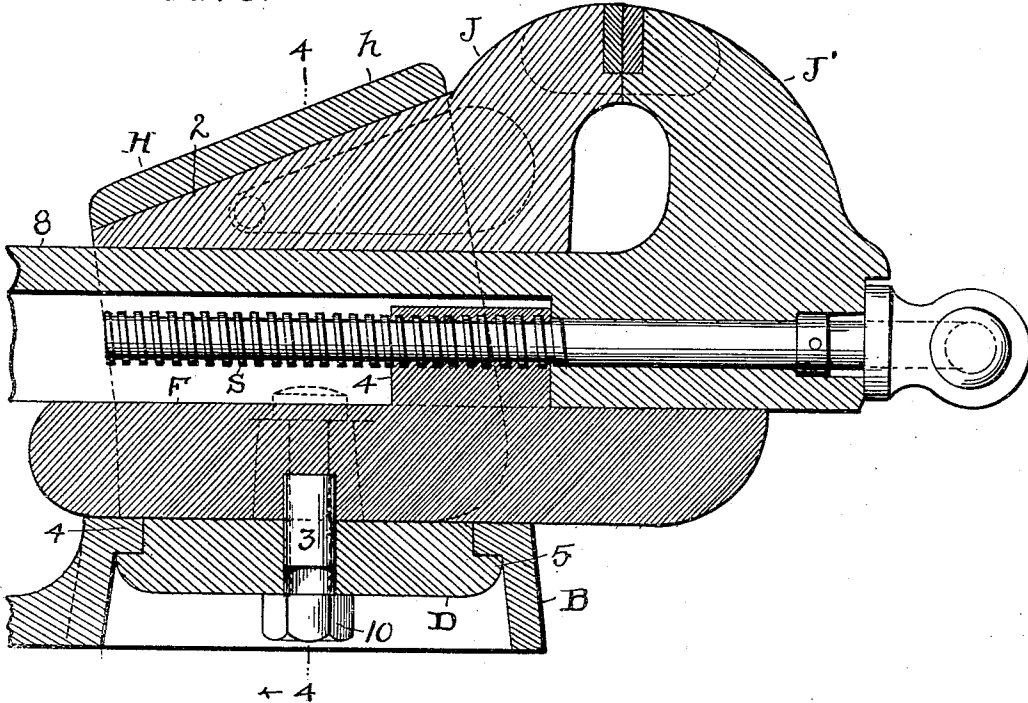
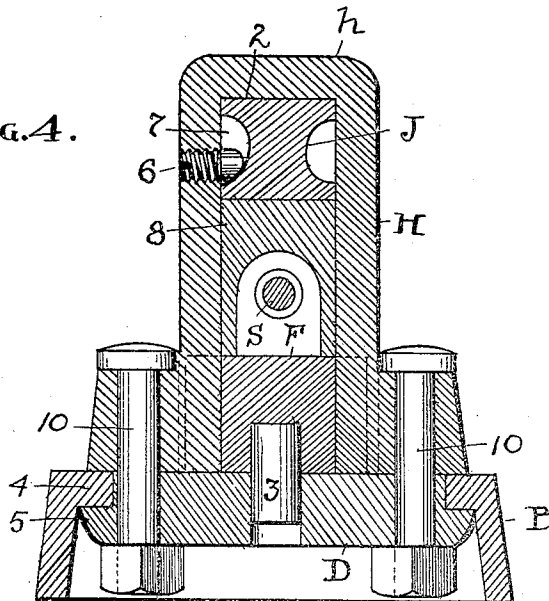


FIG. 4.



ATTEST

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UNITED STATES PATENT OFFICE.

JOHN R. LONG, OF AKRON, OHIO.

BENCH-VISE.

958,659.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed July 6, 1909, Serial No. 505,954. Renewed March 24, 1910. Serial No. 551,313.

To all whom it may concern:

Be it known that I, JOHN R. LONG, citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Bench-Vises, of which the following is a specification.

In the accompanying drawings, Figure 1 is a side elevation of the vise, and Fig. 2 is a plan view on section line 2—2, Fig. 1. Fig. 3 is a central sectional elevation of the vise lengthwise, and Fig. 4 is a cross section line 4—4, Fig. 3.

As thus shown B is the base of the vise adapted to be fixed to a bench or other firm foundation, and H is a hood rotatably supported on top of said base and adapted to be locked thereon by means of a disk or plate D which is recessed about its edge to come even at its top with the top of base B and is secured to hood H by bolts 10 engaged through the base flange of the hood and through disk D, so that when the vise is tightened and the hood raised thereby the flange 5 on the edge of said disk will grip the flange 4 of the base and lock the disk against rotation, which will also lock the hood in like manner. This friction locking of the said parts together occurs through the action or effect of the wedging jaw J particularly. To this end hood H has a forwardly and upwardly flared top portion *h* extending in a straight line front to rear and running down at the rear to near the arm 8 of front jaw J'. Then as the shank 2 of jaw J is made to fit this space it is given wedge shape, fitting along its top edge in the top of the hood and at its bottom upon arm 8. A detaining screw 6 through the side of the hood is engaged in a recess 7 lengthwise in the side of shank 2 and confines the jaws slidably as to the hood. The arm 8 of outer jaw J' extends through hood H and is engaged operatively with friction bar F by means of an integral nut or projection 4 on its top in which the operating screw S is engaged. A pivot pin 3 anchors bar F with disk D, and said bar forms the immediate support for the outer jaw and for screw S.

This vise as thus constructed, is deemed a material improvement over any of my previous designs. The locking force created by the action of tapering shank 2 when the jaws are clamped is also greater and causes the parts to become as rigid as one piece of iron.

The friction bar F is forged from steel, and said bar and vise nut 4 are in one piece. This is another feature of great strength and durability and is unknown in other makes so far as I know.

It will be noticed that when the jaws are clamped the inner wedging jaw J is forced into the hood and this in turn causes the hood to rise, bringing friction plate D in contact with base B, and at the same time forcing the friction bar downward on top of the base and preventing further rotation. When the jaws are released the parts are disengaged. The shoulders 9 on the rear end of the friction bar are intended to pull forward on the hood while at the same instant the tapering shank is being forced inward. The hood bolts are bound just sufficiently tight to allow for easy rotation when the jaws are released, so that no movement of the hood or tapering shank really is perceptible when the jaws are forced together. The screw 6 in the side of the hood prevents the tapering shank 2 from escaping from its position when the jaws are opened and works in the small end of the concavity in the side of the shank as shown. The small pivot 3 in the bottom of the friction bar anchors the bar in its position while the screw is being worked backward.

What I claim is:

1. A vise having a stationary jaw provided with a tapering shank and a hood deepest at its front and tapering toward its rear in which said shank is engaged, in combination with a base, a frictionally engaged part adapted to lock said hood against rotation on said base and a movable jaw having an extension projecting beneath said stationary jaw.

2. A vise with a jaw having a tapered shank and a tapered hood in which said shank is engaged, a base and a member therein frictionally connecting said base and hood and a movable jaw having a portion extending beneath said tapered shank and a support for said movable jaw on said base.

3. A bench vise having a stationary jaw provided with a rearwardly tapering shank, a hood having an inclined top extending forward and engaged over the said tapering shank, in combination with a base and a friction plate in engagement therewith about its edge and adapted to be frictionally engaged with said hood, a friction bar having shoulders at its rear end engaged against the

hood and swiveled upon the base and an outer jaw having an arm extending between said friction bar and said stationary jaw, and a screw engaged with said friction bar and adapted to clamp said jaws.

4. In a vise the combination of a fixed base and a hood having a flaring top portion and horizontally rotatable on said base, a friction bar confined within the sides of said hood and having an integral screw support on its top, a screw through said support and a pair of jaws confined within said hood, the inner of said jaws having a shank tapered on top to the flare of said hood.

5. In a vise, a base and a hood mounted thereon having a flaring top portion, in combination with a pair of jaws in said hood, one of said jaws provided with a wedge shaped shank engaged in said flaring portion of the hood and the other jaw having an arm extending through the hood beneath said shank, and means to operate said jaws and to rotate the parts on said base.

6. A vise having a fixed base and a hood rotatably mounted thereon having a flaring top, a disk under the base and a friction bar over the base, in combination with two jaws mounted upon said bar in said hood and means to lock the same with said hood and upon said bar and base, one of said jaws having a tapered shank in the flaring portion of the hood and the other jaw having a straight arm on which said shank rests.

7. A bench vise having a stationary jaw with a rearward tapering shank, a hood having an inclined top portion front to rear in which said shank is engaged, a base having a flange, a friction plate engaged within the base against said flange and bolts connecting the hood with said plate, in combination with a friction bar having a top projection forming a vise nut and having side shoulders on its rear end engaging the hood, and an anchor pivot in the bottom and center of said friction plate engaged with said friction bar, and a movable jaw having an arm between said friction bar and said stationary jaw.

8. In a device substantially as described, a set of clamping jaws having shanks with straight meeting edges and slidably mounted in relation to each other, one of said shanks tapered rearward on its top and having a recess lengthwise in its side, and a hood inclosing said shanks flared at its top to conform to the taper of said shank and provided with a projection on its inside extending into said recess, whereby said parts are operatively connected.

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

JOHN R. LONG.

Witnesses:

EARLE MACDONALD,
JAMES P. ROGERS.