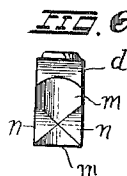
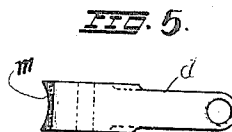
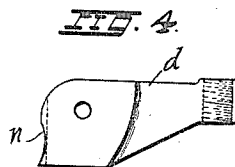
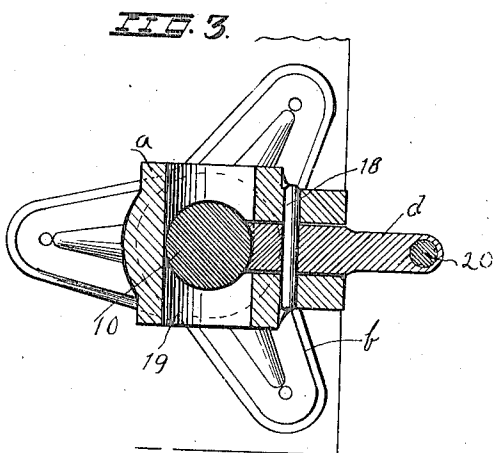
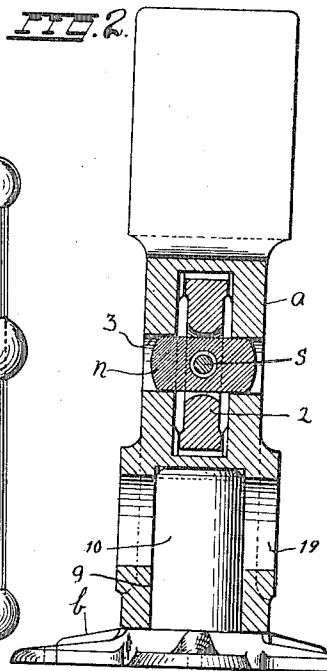
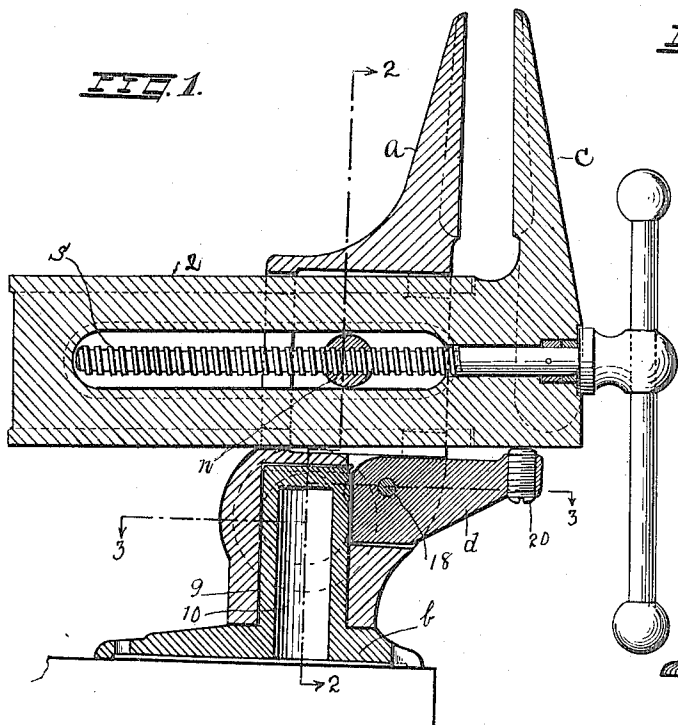


J. R. LONG.
 VISE.
 APPLICATION FILED JAN. 31, 1916.

1,196,560.

Patented Aug. 29, 1916.
 2 SHEETS—SHEET 1.



WITNESS
George Wicker

INVENTOR
J. R. LONG.

BY *Fisher & Wason*

ATTORNEYS

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2 SHEETS—SHEET 2.

FIG. 7.

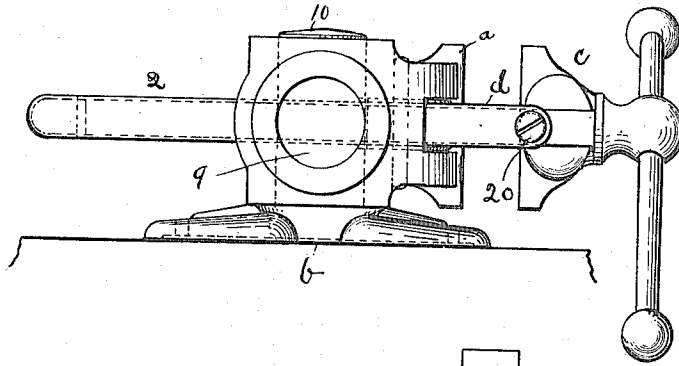


FIG. 8.

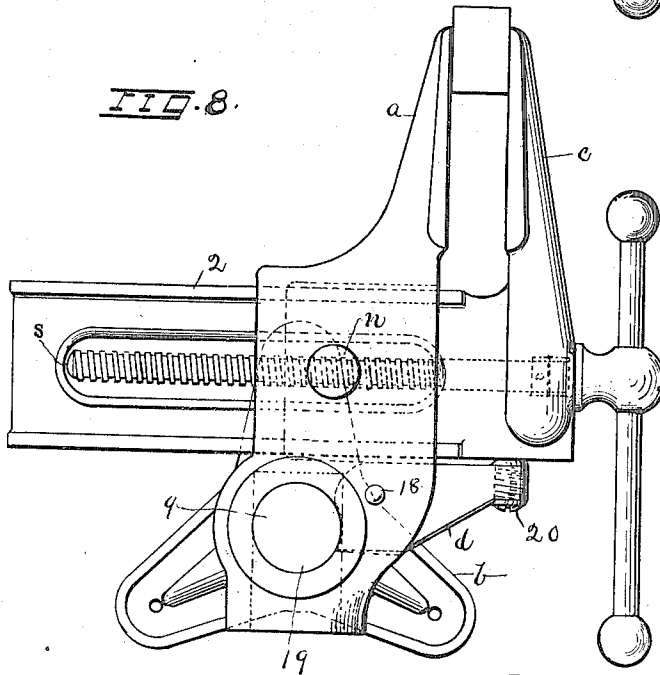
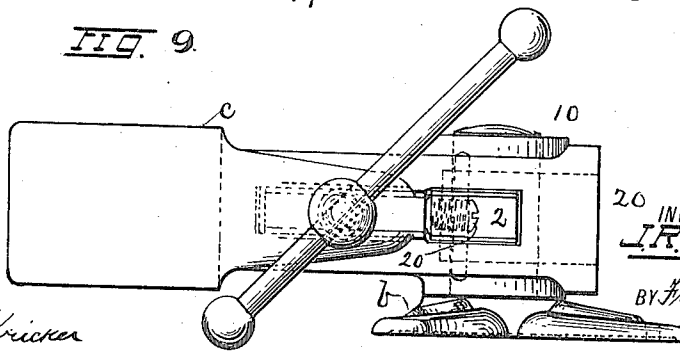


FIG. 9.



WITNESS.
Geo. E. Wicker

INVENTOR
J. R. LONG.

BY *Fisher & Moore*

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN R. LONG, OF ORRVILLE, OHIO.

WISE.

1,196,560.

Specification of Letters Patent.

Patented Aug. 29, 1916.

Application filed January 31, 1916. Serial No. 75,238.

To all whom it may concern:

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

This invention consists in an improvement in vises of the type patented by me on the 29th of January, 1901, No. 667,151, and adapted for use by carpenters, and other artisans as will hereinafter more fully appear.

Figure 1 is a longitudinal vertical section; Fig. 2 is a transverse vertical section on line 2—2, Fig. 1; Fig. 3 is a sectional plan view on line 3—3, Fig. 1; Figs. 4, 5 and 6, detail side, top and end views of the locking dog; Fig. 7 a side elevation of the vise showing the jaws in a horizontal position; Fig. 8 a top plan view of the same; and Fig. 9 an end elevation of the same.

As thus shown the vise comprises the so-called fixed or stationary jaw *a*, the base *b* on which said jaw is mounted, the movable or outer jaw *c*, the actuating screw *s* and the dog *d*. In the broader sense these elements are present in the above patent, but the construction in the said patent has been found defective and insufficient in certain important particulars which the present invention is calculated to remedy, so that a materially improved and practical vise is the result. For example, in the present construction I provide a round or cylindrical shaped nut *n* instead of a square nut as formerly for the operating screw *s*. In the said patent the nut is shown as square and engaged in a practically square or flat sided longitudinal opening in the shank 2 of the outer jaw through a square or four sided hole in the body of the fixed jaw. In the old construction this hole had to be cored and hence was difficult to get in the right place for the nut without a great deal of filing and fitting, and which consumed much valuable time and labor. Then again, it was necessary to provide play for the nut so that it could rock more or less in relation to the movements of the front or outer jaw, but this was objectionable as it caused too much looseness in the parts. Now, instead of the square nut I employ the cylindrical shape shown, and this provides a nut which can rock in its close fitting bore or bearing 3 transversely through the body of the fixed jaw *a* and

which is drilled to the desired size to receive said nut and by being drilled can be located exactly in the right position for the nut. However, while the nut is thus made to occupy a drilled hole of its own size, the longitudinal slot or opening 4 centrally in the shank 5 of the front jaw is made slightly larger than the nut in cross section, say one inch across to seven-eighths of an inch of the nut, or thereabout, and this will give about one-sixteenth of an inch play to shank 5, top and bottom, and provide for the raising of the front jaw in respect to the fixed jaw relatively as shown in somewhat exaggerated measure in Fig. 1, and which movement is necessary to the practical operation of the vise.

Another improvement herein over the patent above mentioned lies in the dog *d*. In the said patent the dog has a mere tooth-like extremity adapted to engage the post 10 on the base, but in my present construction the dog has a compound engaging surface 8 adapted to both the vertical and the horizontal positions of the vise and with equal engaging surface in both positions. It will be noticed that the fixed jaw has a socket or bore 9 in its bottom adapted to seat somewhat snugly and rotatably on the fixed post 10 on base *b*, and another socket or bore at right angles to the socket 9 and both alike adapted to receive the post 10 according to the position desired for the jaws. The shape of the said compound engaging face of the dog is shown in Figs. 4, 5 and 6, and has transversely curved portions or surfaces *m* and *n* at right angles to each other adapted in Fig. 4 to engage the post 10 with the jaws in horizontal position and in Fig. 5 with the jaws vertical. Thus, in Fig. 6, the upper and lower subdivisions or quarters *m* of said face comprise the vertical engaging portion and the side subdivisions or quarters *n* constitute the horizontal engaging portion of the jaw upon said post, as also indicated in Fig. 4. In this way a dog is provided which will grip said post positively in either position of the jaw and hold it fast until released, and this is very important in the operation of a device of this kind and remedies an inherent defect in the old dog. In the development of the said dog as thus described it will be understood that the said surfaces *m* and *n* are produced at the same time that the sockets are reamed, and this is accomplished by placing the dog in position

on its pivot pin 18 and reaming the said surfaces and socket together or in the same operation, and thus the said surfaces are turned on exact lines to grip the said post 5 evenly and fully in both positions.

Again: In the former construction of the dog there was no provision made for adjusting or variably determining the position of the outer jaw in respect to the rear or 10 fixed one, and it is desirable to have the said jaws so related that the top of the jaws will come into contact or approach contact before the bottom. Otherwise there is danger of the jaws actually standing apart at the 15 top and coming together at the bottom, which is exceedingly objectionable. By means of the adjusting screw 20 in the outer end of the dog the most delicate adjustments can be effected, and the said screw may be 20 of hardened steel while the dog is of soft steel. It will be observed that the said fixed jaw has a hub with the sockets or openings 9 and 19 at right angles to each other and adapted to seat the jaws on post 10 in 25 vertical or horizontal position, and the dog *d* is pivoted in an opening through said hub at 18 in such relation to said sockets 9 and 19 as to work equally with both, the said dog having two sub-divided curved surfaces on 30 its seating face 8 adapted one to each position. In both cases the sub-triangular subdivisions of each surface *m* and *n* are at the middle of said face where the bearing is *nil* in both cases. This enables the dog to be 35 effectually used in whichever position the vise may be placed.

What I claim is:

1. A vise as described having a fixed jaw provided with a hub and a base having a 40 post on which said hub is rotatably seated, an outer jaw in said fixed jaw and a dog pivoted in said hub adapted to engage said post and provided with an adjustable screw in its 45 outer end in engagement with the bottom of said outer jaw and adapted to fix the working position of said jaw.

2. In a vise as described, a fixed jaw and

a removable jaw having an angular shank projecting through the same provided with an opening lengthwise between its ends and 50 said fixed jaw having a round hole drilled through the same in registry with said opening, a cylindrical nut rotatably fitted in said hole through said opening and an operating 55 screw extended through said outer jaw into the lengthwise opening therein and threaded through said nut, the said opening being larger than said nut to afford limited play of the jaw shank and corresponding rotation 60 of said nut.

3. In a vise as described, a base having a cylindrical post, a fixed inner jaw having a hub rotatably seated on said post and an 65 outer jaw slidably mounted therein and a dog pivoted in said hub and having an engaging surface curved to conform to the side of said post and the outer end of said dog provided with means to make adjustable working contact with said outer jaw.

4. A vise as described having a fixed 70 jaw with a hub having sockets at right angles to each other and a base having a post adapted to seat either of said sockets rotarily thereon, an outer jaw in said fixed jaw and a dog pivoted in said hub and oper- 75 atively engaged by said outer jaw having curved engaging surfaces crossing each other at right angles, and either surface adapted to bear against said post according to the socket used therewith. 80

5. A vise as described having a base with a post, a jaw having sockets at right angles to each other adapted to seat rotatably on 85 said post through either socket and a dog pivoted in said jaw and having multiple curved surfaces with a common center adapted to engage and lock on said post in either position of the said jaw thereon.

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

JOHN R. LONG.

Witnesses:

F. C. HARROLD,
GEO. E. KRICKER.