

No. 762,070.

PATENTED JUNE 7, 1904.

C. C. LONGARD.
VISE.

APPLICATION FILED AUG. 17, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 2.

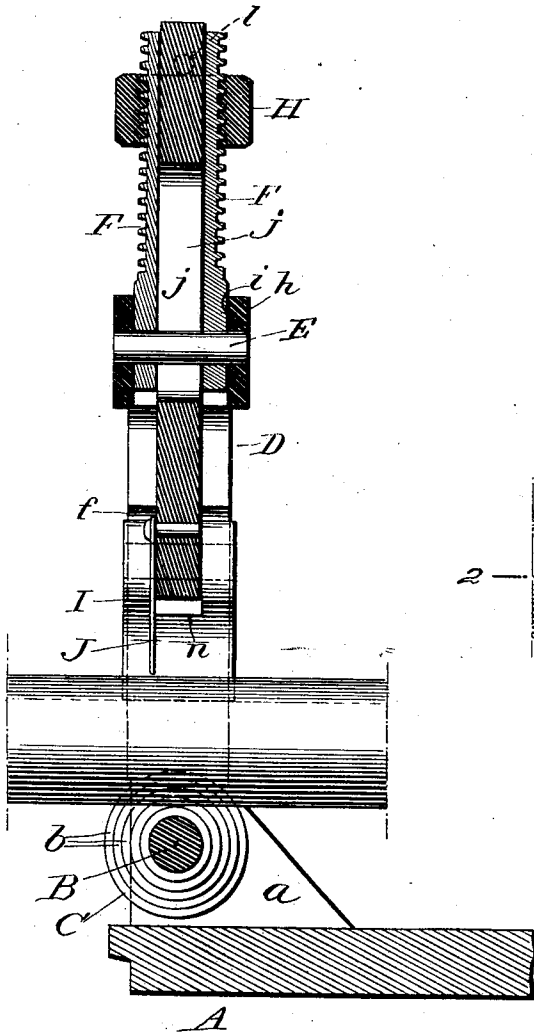
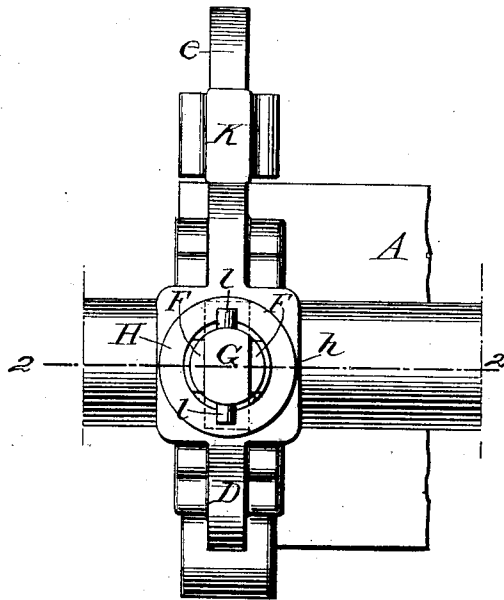


Fig. 3.



Witnesses
James J. Sheehy Jr.
W. C. Stealy

Inventor
C. C. Longard.
By *James J. Sheehy* Attorney

UNITED STATES PATENT OFFICE.

CLARENCE C. LONGARD, OF HALIFAX, CANADA.

WISE.

SPECIFICATION forming part of Letters Patent No. 762,070, dated June 7, 1904.

Application filed August 17, 1903. Serial No. 169,823. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE C. LONGARD, a citizen of Canada, residing at Halifax, in the Province of Nova Scotia and Dominion of Canada, have invented new and useful Improvements in Vises, of which the following is a specification.

My invention pertains to vises, more particularly vises for pipes and other round work; and it has for its object to provide a vise which is adapted to be quickly and easily adjusted and manipulated to clamp work of various sizes and yet may be depended on to securely hold the work.

With the foregoing in mind the novelty, utility, and practical advantages of the invention will be fully understood from the following description and claims, when taken in connection with the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation of the vise constituting the preferred embodiment of my invention; Fig. 2, a vertical central section of the same, taken in the plane indicated by the line 2 2 of Fig. 3; Fig. 3, a plan view; and Fig. 4, a detail section taken in the plane of the line 4 4, Fig. 1.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which—

A is the base of my improved vise, which has standards *a* at one end.

B is a shaft mounted in the standards, and C is a rotatable gripping-jaw mounted on the shaft between the standards. This jaw is preferably, although not essentially, of circular form in cross-section and is stepped—*i. e.*, reduced step by step toward its center—to seat round work and form a plurality of edges for engaging the same. The jaw is mounted to rotate in order that new gripping edges may be presented to the work when desired, and it is preferably of circular form in cross-section, as before stated, to afford a large amount of wearing-surface. In the present and preferred embodiment of my invention the said jaw is formed of a plurality of sections or disks *b*, this in order that when one section or disk is worn or otherwise impaired it may be removed and replaced with a new section. I desire it

understood, however, that the jaw may be formed of one, two, or more pieces without involving a departure from the scope of my invention.

D is the swinging bail-shaped frame of my improved vise. This frame has one of its legs hinged at *c* to a lug *d* on one standard B, and its other leg is adapted to rest above the other standard B and is provided with an outwardly-extending cam-shaped projection *e*. On the inner sides of the legs of the frame downwardly-converging cams *f* and guide-ribs *g* are provided, Fig. 4, while the crown-bar *h* of said frame is provided with a vertically-disposed opening *i*.

E is a pin mounted in opposite walls of and extending across the opening *i* in the crown-bar *h* of the frame D. F F are bars loosely mounted on and extending upwardly from said pin and having threads on their outer sides.

G is a bar movable vertically in the opening *i* and between the bars F and having a vertical slot *j*, receiving the pin E, and also having abutments *k l*, and H is a nut interposed between the said abutments *k l* and surrounding and engaging the threads of the bars F. In virtue of this construction it will be observed that when the nut H is turned in one direction the bar G will be moved downwardly in the frame D, while when the nut is turned in the opposite direction the said bar will be raised, also that the raising and lowering of the bar requires but little effort.

I I are jaws pivotally connected at *m* to the lower portion of the bar G and having bifurcations *n*, receiving the guide-ribs *g* of frame D, and rounded portions *p*, engaging the cams *f* thereof, and also having gripping edges *q*. These jaws are by preference removable from the bar G in order to permit of their edges *q* being readily sharpened when necessary.

J is a spring connected to the bar G and having legs which tend to press the jaws I outwardly.

K is a lever fulcrumed at *r* on a lug *s* of the base A and carrying an antifriction-roller *t*, arranged to engage the cam-shaped projection *e* of the swinging frame D.

In the practical operation of my improved vise the frame D is swung to the right, as

shown by dotted lines in Fig. 1, to permit of a piece of work being laterally placed on the jaw C and is then returned to the position shown by full lines in said figure. The nut H is then turned downwardly to lower the bar G and move the edges of the jaw I into engagement with the work, after which the lever K is swung up into the position shown by full lines in Fig. 1, when the work will be very

securely clamped and held between the jaws I and the jaws C. It will be apparent that during the downward movement of the jaws I the cams *f*, engaging the rounded portions *p* thereof, will move the jaws inwardly, with the result that their gripping edges *q* will take a strong hold on the work to be held, also that on the upward movement of the bar G the spring J will press the jaws outwardly and hold them in close contact with the cams *f*.

I have entered into a detailed description of the construction and relative arrangement of the parts embraced in the present and preferred embodiment of my invention in order to impart a full, clear, and exact understanding of the same. I do not desire, however, to be understood as confining myself to such specific construction and relative arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my invention as claimed.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a vise, the combination of a base, a jaw carried thereby, a movable frame connected with the base, threaded bars carried by said frame, a bar movable in the movable frame, between the threaded bars thereon, and having abutments, a nut surrounding the threaded bars, and interposed between the abutments of the movable bar, one or more jaws carried by the movable bar, and means for pressing the movable frame toward the jaw carried by the base.

2. In a vise, the combination of a base, a jaw carried thereby, a movable frame connected with the base, and having downwardly-converging cams, threaded bars carried by said frame, a bar movable in the movable frame, between the threaded frame, means for pressing said jaws against said cams, and means for pressing the movable frame toward the jaw carried by the base.

3. In a vise, the combination of a base, a jaw carried thereby, a bail-shaped, swinging frame, having one of its legs hinged on the base, and also having a projection on its other leg, threaded bars carried by and extending from the crown-bar of said frame, a bar movable in the swinging frame; between the threaded bars thereon, and having abutments, a nut surrounding the threaded bars, and interposed between the abutments of the movable bar, one or more jaws carried by the

base, and arranged to engage the projection on the swinging frame.

4. In a vise, the combination of a base, a jaw carried thereby, a bail-shaped, swinging frame, having one of its legs hinged on the base, and a projection on its other leg, and also having downwardly-converging cams on its legs, threaded bars carried by and extending from the crown-bar of said frame, a bar movable in the swinging frame, between the threaded bar, and having abutments, a nut surrounding the threaded bars, and interposed between the abutments of the movable bar, jaws carried by and movable on the movable bar, and engaging the cams of the swinging frame, means for pressing said jaws against the cams, and a lever fulcrumed on the base, and arranged to engage the projection on the swinging frame.

5. In a vise, the combination of a base, a jaw carried thereby, a frame on the base, threaded bars carried by said frame, a bar movable in the frame, between the threaded bars thereon, and having abutments, a nut surrounding the threaded bars, and interposed between the abutments of the movable bar, and one or more jaws carried by the movable bar.

6. In a vise, the combination of a base, a jaw rotatably mounted in the base, and stepped lengthwise in opposite directions toward its center, a frame on the base, and means carried by the frame for holding a piece of work against the central portion of the rotatable jaw.

7. In a vise, the combination of a base, a swinging, bail-shaped frame having one of its legs hinged to the base, and its other leg provided with a projection, and also having downwardly-converging cams on its legs, and a vertically-disposed opening in its crown-bar, a pin extending across said opening, threaded bars connected to said pin and extending upwardly from the crown-bar, a bar movable in said opening of the frame, between the threaded bars, and having a slot, receiving the pin, and also having abutments, a nut surrounding the threaded bars, and interposed between the abutments of the movable bar, spring-pressed jaws pivoted on the movable bar, and engaging the cams on the frame, a lever fulcrumed on the base, and arranged to engage the projection on the frame, and a jaw carried by the base.

8. In a vise, the combination of a base, a swinging, bail-shaped frame having one of its legs hinged to the base, and its other leg provided with a projection, and also having downwardly-converging cams on its legs, and a vertically-disposed opening in its crown-bar, a pin extending across said opening, threaded bars connected to said pin and extending upwardly from the crown-bar, a bar movable in said opening of the frame, between the threaded bars, and having a slot, receiving the pin,

and also having abutments, a nut surrounding the threaded bars, and interposed between the abutments of the movable bar, spring-pressed jaws pivoted on the movable bar, and engaging the cams on the frame, a lever fulcrumed on the base, and arranged to engage the projection on the frame, and a jaw rotatably mounted in the base, and stepped toward its center.

9. In a vise, the combination of a base, a jaw rotatably mounted in the base, and stepped lengthwise in opposite directions toward its center, a movable frame connected with the base, and having downwardly-converging cams, movable jaws engaging said cams and disposed at opposite sides of the vertical plane of the center of the rotatable jaw, means for adjusting said jaws in the frame and toward the jaw in the base, and means for pressing the movable frame toward the latter jaw.

10. A vise comprising a base, and a jaw rotatably mounted in the base, and stepped lengthwise and in opposite directions toward its center.

11. A vise comprising a base and a jaw carried by the base, and stepped toward its center; said jaw being made up of separate, removable disks.

12. A vise comprising a base, and a rotatable jaw mounted in the base, and stepped toward its center; said jaw being made up of a plurality of removable disks.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CLARENCE C. LONGARD.

Witnesses:

EDMUND P. ALLISON,
JOHN T. ROSS.