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Aug. 25, 1925. 1,550,751

C. F. SINKLER

PORTABLE VISE

Filed Sept. 28, 1923

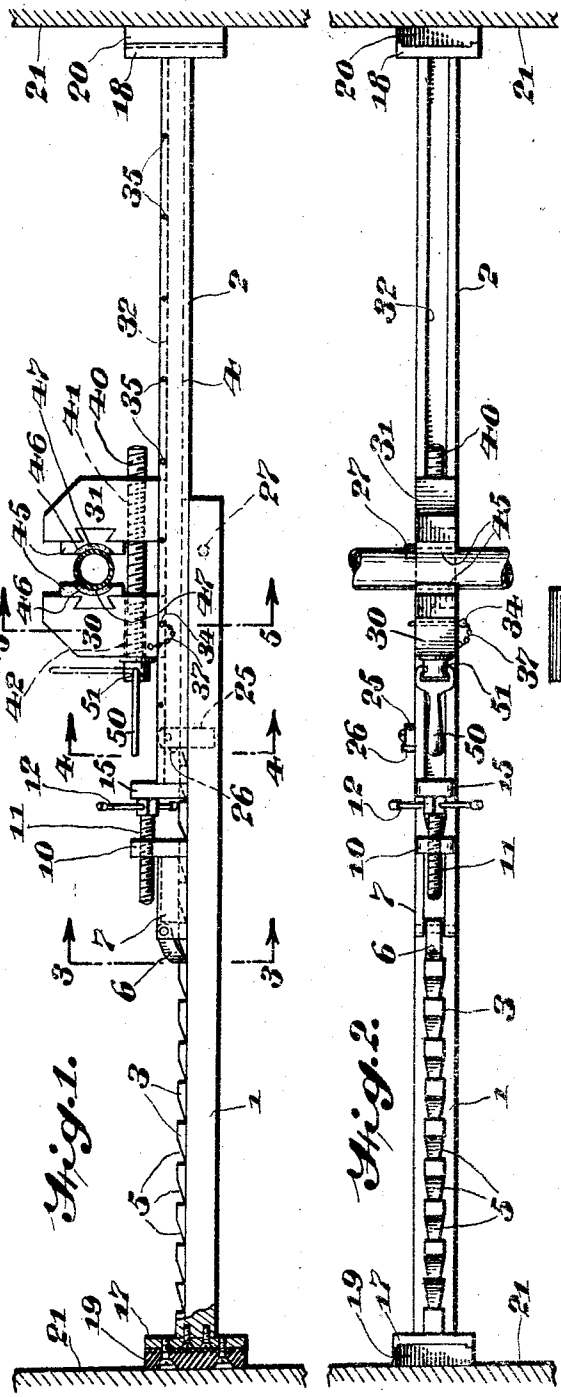


Fig. 1.

Fig. 2.

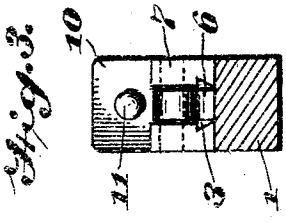


Fig. 3.

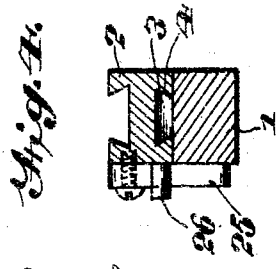


Fig. 4.

Fig. 5.

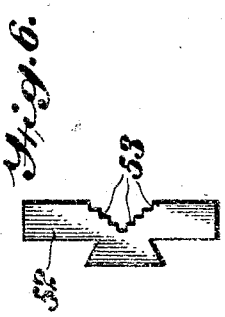


Fig. 6.

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Patented Aug. 25, 1925. 1,550,751

UNITED STATES PATENT OFFICE.

CHARLES F. SINKLER, OF PHILADELPHIA, PENNSYLVANIA.

PORTABLE VISE.

Application filed September 28, 1923. Serial No. 665,299.

To all whom it may concern:

Be it known that I, CHARLES F. SINKLER, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented an Improvement in Portable Vises, of which the following is a specification.

My invention relates to portable vises, and it has for its general object to provide a vise structure which is adapted to be readily transported from one place to another and to be quickly set up in position to be used by any person desiring to use the same.

A further object of the invention is to provide a novel construction of vise of such character that it may be secured readily between the opposite sides of a door or other like frame or between any two posts or abutments separated a suitable distance from each other.

A further object is to provide a novel construction of vise of a character which particularly adapts it for use by plumbers for cutting pipes for use in the installations of the sanitary or plumbing systems of a number of houses of a building operation. The said vise may be carried from house to house by an operator or mechanic and quickly secured in position between the opposing parallel sides of door frames ready for use for holding pipes to be cut to such lengths as may be desired.

Other objects and advantages of the invention will be pointed out in the detailed description thereof which follows or will be apparent from such description.

In order that the invention may be readily understood and its practical advantages fully appreciated reference may be had to the accompanying drawing in which I have illustrated one form of embodiment thereof. However, it will be understood that various changes in the details of construction may be made within the scope of the claims without departing from the invention.

In the drawing:

Fig. 1 is a view in side elevation of a vise structure embodying my invention and showing portions of abutments such as the opposite sides of the door frame between and upon which the said structure is supported;

Fig. 2 is a top plan view of the structure shown in Fig. 1;

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a like view taken on the line 4—4 of Fig. 1;

Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 1; and

Fig. 6 is a view in edge elevation of one member of a gripping or clamping jaw of slightly modified construction.

Referring to the drawing, 1 and 2 designate bars which are slidably connected together. In order to connect the said bars the bar 1 is provided with an undercut tongue 3 which is adapted to fit and slide in an under-cut groove 4 in the bottom side of the member 2. The tongue 3 is provided with notches 5 at intervals with which a pawl 6 is adapted to engage. The said pawl is pivotally connected to the outer end of a follower 7 which is slidably mounted upon the tongue 3 by means of an under-cut groove in the under side thereof. At its inner or forward end the follower 7 is provided with a transversely extending block or plate 10 with which a screw threaded bolt 11 is adjustably engaged. The inner or forward end of the screw-threaded bolt 11 is provided with a head having an opening therethrough through which a crank-pin 12 extends. The said pin is slidable in the said opening and is employed for the purpose of turning the screw bolt 11. The inner or headed end of the screw bolt 11 is adapted to contact with a transversely extending plate or block 15 which is secured to the inner end of the bar 2.

As already stated, the bars 1 and 2 are slidably connected together. The device as a whole may be extended or shortened by sliding the said bars outwardly or inwardly with respect to each other. The opposite ends of the bars are provided with terminal or head portions 17 and 18 which are respectively provided with suitable pad-like portions 19 and 20 of a suitable non-metallic material which may be placed in contact with and forced against a surface without scratching the same. These pad portions 19 and 20 are adapted to contact with opposing surfaces of the opposite sides of a door frame or other like frame structure. Portions of the opposite sides of the door frame are shown at 21.

In the attaching of the vise to a door frame or in the attaching of it to any two members separated from each other the

proper distance, it is placed between the said members and the parts extended by hand until the terminal head portions are brought into contact with the opposing surfaces of the abutment supports. The follower 7 is then moved forward into proper position with respect to the inner end of the member 2 and the pawl 6 is placed in engagement with one of the notches 5 with the inner end of the screw bolt 11 as near as may be practically possible to the inner surface of the plate or block 15. The screw bolt 11 is then turned by means of the crank pin 12 so as to back it out or cause it to move toward the said plate or block 15 to force the outer ends of the bars 1 and 2 firmly against the abutments 21 so as to thereby firmly secure the vise in position for use.

For the purpose of preventing accidental separation of the bars 1 and 2 from each other I have provided the pivoted stop 25 which is pivotally connected to the bar 2 and normally extends across the bar 1. Pivotal movement of the pivoted stop 25 toward the left (having reference to Fig. 1 of the drawing) is prevented by means of a projection 26 upon the said bar 2. The bar 1 is provided with a stop projection 27 adjacent its outer end with which the lower end portion of the stop 25 is adapted to contact in order to prevent separation of the bars 1 and 2. Should it be desired to separate these bars such separation may be effected by turning the pivoted stop 25 into position parallel with the bars 1 and 2. When in such position the bars may be readily separated by sliding them outwardly with respect to each other.

The gripping jaws 30 and 31 of the vise structure are slidably supported upon the upper side of the bar 2. Slidable connection between the said jaws and the said bar is effected by means of an under-cut slot 32 in the upper side of the bar 2 and tongues 33 of corresponding shape in cross section upon the lower ends of the said jaws.

When the jaw 30 has been adjusted into the position desired upon the bar 2 it may be retained in such position by means of a pin 34 which extends through holes 35 at intervals adjacent the upper edge of the bar 2 and through a hole 36 extending transversely through the tongue 33 of the said jaw. The pin 34 is attached to the bar 2 by means of a short chain 37. The jaws 30 and 31 are adapted to be adjusted toward and from each other by means of a screw threaded bolt 40 which engages a screw threaded opening 41 in the jaw 31. The opening 42 through the jaw 31 is not screw threaded so that the screw bolt 40 turns therein without in any way affecting the said jaw 30. The jaws 30 and 31 are provided with removable gripping blocks 45 which are provided with curvilinear seats, as indicated at 46, which seats are lined with a lining or bearing of suitable material 47, such as fiber or Babbitt metal. Such lining is employed to prevent scratching of the cylindrical surface of a pipe 48 which may be held between the bearing blocks of the jaws 30 and 31, which pipe may be nickel plated or painted.

Rotation of the screw bolt 40 to effect preliminary movement of the jaw 31 toward the jaw 30 may be effected by hand, but the final turning or movement thereof to cause the jaws 30 and 31 to clamp firmly against the opposite sides of a pipe may be effected by the crank handle 50 which has pivotal connection with the inner end of the said bolt 40, as indicated at 51. Likewise, for the purpose of releasing the gripping action of the jaws 30 and 31 preliminary turning of the screw threaded bolt may be effected by the crank handle 50, but after once loosened the further turning of the said bolt may be effected directly by the fingers.

If it is immaterial whether the pipes or other objects which are to be held are scratched or not a gripping block 52, having notched gripping and holding angularly related surfaces 53, may be employed as is shown in Fig. 6 of the drawing.

It will be seen that by my invention I have provided a construction of vise which is adapted to be readily set up in the different houses of a building operation or between any two abutment supports which are located in properly spaced relation with respect to each other. By the employment of a portable vise such as that embodied in my invention a great deal of the time of workmen is saved, because in the present practice heavy vises are employed with the result that in case of a building operation a vise is located at some point and the workmen make trips to and from the same from various parts of the operation for the purpose of cutting pipes as may be necessary.

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

1. In a portable vise, in combination, elongated members having slidable connection with each other, a follower having slidable connection with one of said members, means for preventing movement of said follower in one direction, and adjustable means carried by said follower for engaging the inner end of the other of said members for forcing the latter outwardly.

2. In a portable vise, the combination of bars having interlocked slidable connection with each other, the said bars being adapted to be adjusted inwardly and outwardly with respect to each other, a follower having slidable connection with one of said bars, a pawl having pivotal connection with the outer end of said follower and adapted to engage

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TOOLS
4 269-97

at intervals the bar upon which said follower is carried, and an adjustable device carried by said follower which is adapted to engage the inner end of the other of said bars whereby the said bars may be forced outwardly with respect to each other.

3. In a portable vise, in combination, bars having their inner end portions slidably connected together, the outer ends thereof terminating in heads which are adapted to engage oppositely disposed abutments, one of the said bars being provided with notches at intervals in its upper edge, a follower carried by said last-mentioned bar, said follower being provided with a pawl pivoted to its outer end. which pawl is adapted to engage any one of the said notches, and the said pawl being provided with an adjustable device at its inner end which is adapted to engage the inner opposing end of the said other bar, substantially as and for the purpose described.

4. In a portable vise, in combination, bars having slidable connection with each other, one of which bars is provided with a transversely extending block upon its inner end, a follower having adjustable connection with the other of said bars, means for holding the said follower in adjusted position, and adjustable means upon the said follower for engaging the said block and exerting pressure thereupon to force the said bars outwardly with respect to each other.

5. In a portable vise, the combination of bars having slidable connection with each other, gripping jaws adjustably mounted upon one of the said bars, a follower slidably mounted upon the other of said bars, means for retaining the said follower in a position to which it may be adjusted, and adjustable means carried by said follower for engaging the inner end of the bar upon which the said gripping jaws are mounted for forcing the said bars outwardly with respect to each other.

6. In a portable vise, in combination, bars having slidable connection with each other, one of the said bars being provided adjacent its inner end with a pivoted stop which extends transversely of the said bars, and the other of said bars being provided with a stop projection adjacent its end, the said stop being adapted to permit or prevent disconnection of the said bars as may be desired.

In testimony that I claim the foregoing as my invention. I have hereunto signed my name this 20th day of September, 1923.

CHARLES F. SINKLER.