E. J. MILES.

VISE.

APPLICATION FILED OCT. 22, 1918

1,311,986.

Patented Aug. 5, 1919.

Fig. 1

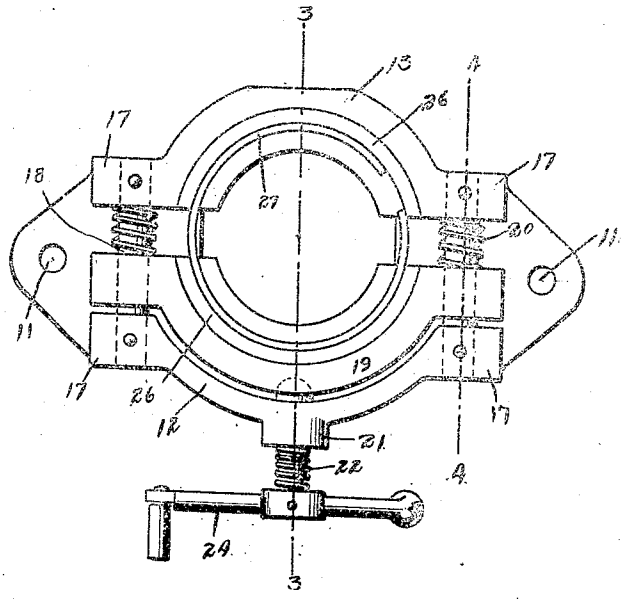


Fig. 2.

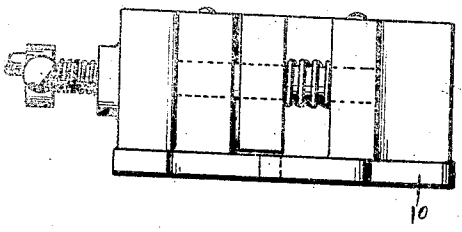


Fig. 3.

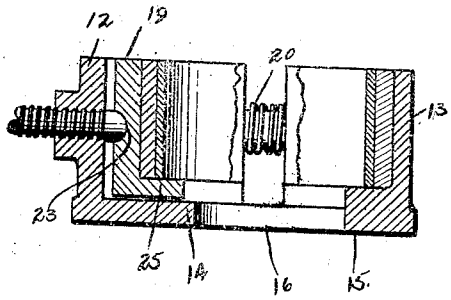
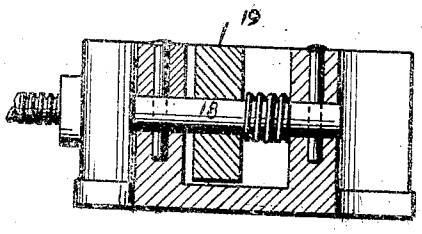


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD J. MILES, OF NEWTON, IOWA.

VISE.

1,311,986. Specification of Letters Patent. Patented Aug. 5, 1919.

Application filed October 22, 1918. Serial No. 259,272.

To all whom it may concern:

Be it known that I, EDWARD J. MILES, a citizen of the United States, and resident of Newton, in the county of Jasper and State of Iowa, have invented a certain new and useful Vise, of which the following is a specification.

It is the object of my invention to provide a vise of very simple, and inexpensive construction.

More particularly it is my object to provide a vise of the type which can be used for holding a piston either in upright or inverted position so that in one of said positions the connecting rod may be extended downwardly from the vise with the piston extended upwardly from the vise so as to permit proper access to the piston rings.

Still a further object is to provide such a device so constructed and arranged as to be readily adapted for use in firmly holding pistons of different maximum diameters.

With these and other objects in view my invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which:

Figure 1 shows a top or plan view of my improved vise.

Fig. 2 shows a side elevation of the same.

Fig. 3 shows a vertical, sectional view taken on the line 3—3 of Fig. 1; and

Fig. 4 shows a vertical, sectional view taken on the line 4—4 of Fig. 1.

My improved device comprises a base indicated in the accompanying drawings by the reference character 10 and having at its ends bolt holes 11 to receive bolts or the like for securing the base to a table or support. The base has on opposite sides upwardly extending curved flanges 12 and 13. At the lower part of each flange 13 is a portion of the base forming an inwardly extending shelf. The shelf at the lower part of the flange 12 is numbered 14 and is lower than the shelf 15 at the lower part of the flange 13.

Between the shelves 14 and 15 is a central opening 16 to permit the connecting rod on a piston to extend through the vise.

At the ends of the flanges 12 and 13 are lateral extensions 17.

Fixed in the extensions 17 are transverse rods 18. Resting above the shelf 14 is a curved yoke 19 having its ends slidably mounted on the rods 18, as shown in Figs. 1 and 4.

On each rod 18 between the yoke 19 and the extension 17 of the flange 13 is a coil spring 20.

Formed on the flange 12 is an internally screw-threaded bearing 21 into which is screwed a rod 22. The inner end of the rod 22 is received in a recess 23 in the yoke 19, as illustrated in Figs. 1 and 2.

On the upper end of the rod 22 is a suitable handle 24. It will be seen that by manipulating the handle 24 the screw 22 may be operated for forcing the yoke 19 toward the flange 13 against the pressure of the springs 20.

At the lower edge of the yoke 19 is an inwardly extending shelf 25, the upper surface of which is level with the upper surface of the shelf 15.

In the actual use of my device I preferably place on the inner surfaces of the flange 13 and yoke 19 segments 26 of Babbitt metal which rest on the shelves 25 and 15.

For adapting my piston vise to be used with pistons of different external diameters, I provide broken rings 27 which fit inside the Babbit metal segments, as illustrated in Fig. 1. As many of the rings 27 may be employed as desired to make the vise fit the piston.

With a vise of this kind the piston may be placed in the vise either end up for holding the piston in convenient position for all the work that may have to be done on it.

The rings 27 should be somewhat resilient to permit their being sprung to some extent.

It will be noted that one feature of applicant's device is the arrangement of the shelf portions 14 and 15. The upper surface of the shelf portion 15 is higher than the upper face or portion of the shelf portion 14.

This structure is necessary in order to furnish a suitable support for the slidably mounted gripping member 19, and also in order to permit the shelf member 25 on the gripping member 19 to have its upper surface flush or level with the upper surface of the shelf portion 15, so that the shelf portion 15 and the shelf member 25 may properly support the split ring 27.

Some changes may be made in the construction and arrangement of the parts of my improved device without departing from the essential features and purposes of my invention, and it is my intention to cover by my application any modified forms of structure or use of mechanical equivalents which may be included within the scope of my claims.

I claim as my invention:

1. A vise comprising a base having a central opening, and having opposite upwardly extending curved flanges, and having at the lower parts of said flanges inwardly extending shelf portions, the shelf portion on one side of the opening being lower than the shelf portion on the other side of said opening, a gripping member above the lower shelf portion slidably mounted, provided at its lower part with an inwardly extending shelf, the upper surface of which is level with the higher shelf portion, and means for adjusting said gripping member.

2. A vise comprising a base having a central opening, and having opposite upwardly extending curved flanges, and having at the lower parts of said flanges inwardly extending shelf portions, the shelf portion on one side of the opening being lower than the shelf portion on the other side of said opening, a gripping member above the lower shelf portion slidably mounted, provided at its lower part with an inwardly extending shelf, the upper surface of which is level with the higher shelf portion, means for adjusting said gripping member, and a split ring supported on the higher shelf portion and on the shelf member of the gripping member.

Des Moines, Iowa, May 31, 1918.

EDWARD J. MILES.