March 10, 1925. 1,529,251

W. C. HANSEN

VISE

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Fig. 1.

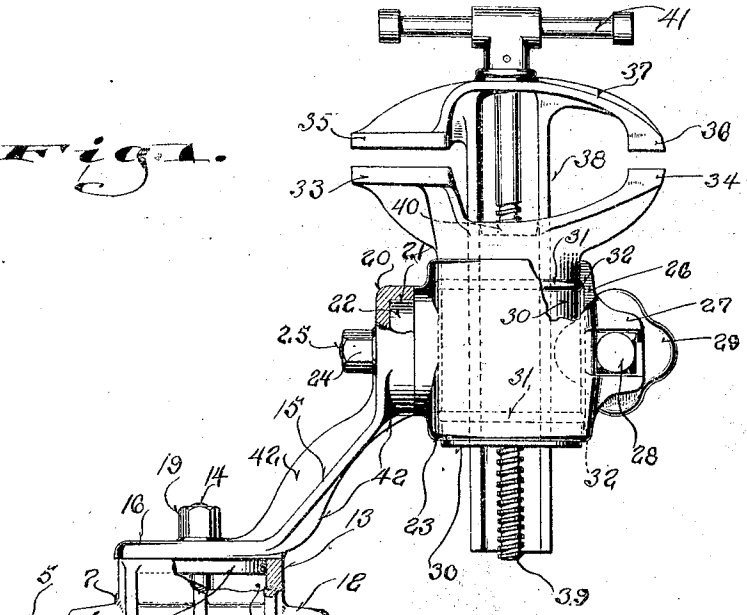
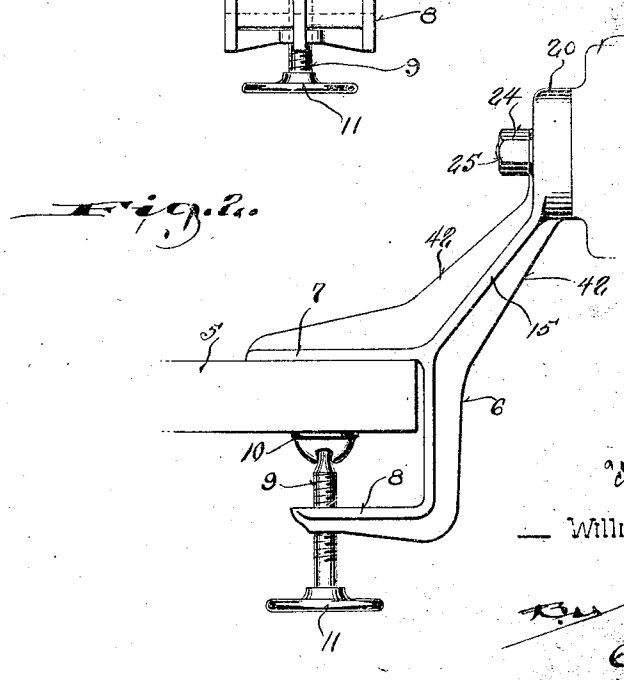


Fig. 2.



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UNITED STATES PATENT OFFICE.

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VISE.

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To all whom it may concern:

Be it known that I, WILLIAM C. HANSEN, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Vises, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to certain new and useful improvements in tools and refers more particularly to what may be termed a general utility vise.

The ordinary type of bench vise is often times objectionable as when it is desired to handle work of a peculiar shape or construction it is impossible to so secure the same in the vise as to facilitate working thereon, and it is, therefore, one object of this invention to provide a vise which is capable of substantially universal adjustment to permit the positioning of its working jaws in any position convenient for the working on material secured therebetween.

This invention has for another of its objects to provide an improved type of vise which is so mounted as to permit its adjustment on three different axes, or any one of them.

It is a further object of this invention to provide an improved, substantially universally adjustable vise which may be constructed at a minimum cost and which will perform its functions in a very desirable manner.

With the above and other objects in view which will appear as the description proceeds, my invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claims.

In the accompanying drawings, I have illustrated one complete example of the physical embodiment of my invention constructed according to the best mode I have so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a view partly in elevation and partly in section, illustrating a universal vise constructed in accordance with my invention; and

Figure 2 is a fragmentary view in elevation of a slightly modified construction of clamp for my improved device.

Referring now more particularly to the accompanying drawings, the numeral 5 designates a support, such as a bench or table, to which my improved device is secured by a C-clamp or other mounting 6. Mounting 6 has a bench or table engaging face 7 and an arm 8 parallel therewith carrying a clamp bolt 9, on the inner end of which is mounted a table engaging head 10 and on the other end of which is a hand wheel 11 for convenience in firmly securing the mounting to the support. If desired, the table engaging part of the mounting may be provided with apertured lugs or ears 12 through which suitable securing members (not shown) may be inserted to firmly fasten the mounting to the support independent of bolt 9.

The mounting, illustrated in Figure 1, has a centrally bored, upstanding boss 13 on its outer face, through which projects a stud 14 which provides a pivot for a bracket arm 15, the lower end 16 of which has a circular boss 17 rotatably mounted in the bore 18 of boss 13 to cooperate with stud 14 to swivellingly mount the bracket arm. The bracket arm is firmly secured in any position of adjustment, about the center of bolt 14 as an axis, by a lock nut 19 on the upper end thereof which is operable to clamp the periphery of end 16 against the top face of boss 13, as will be readily obvious.

In Figure 2, bracket arm 15 is illustrated as integral with the mounting proper, as often-times it is desirable to eliminate the adjustment about the center of the stud. The upper end 20 of the bracket arm is counter-bored, as at 21, to rotatably receive a boss 22 carried by a sleeve member 23, which is rotatable about the axis of bore 21 and adapted to be secured in any position of adjustment by a clamp nut 24 on the outer end of a stud 25, carried by the sleeve member and passed through the rear wall of the bracket member end 20.

Sleeve 23 is split, as at 26, and has registering ears or lugs 27 formed on the opposite sides thereof through which passes a bolt 28, carrying a hand wheel 29 for drawing the split ends together and to firmly clamp the barrel or shank 30 of the vise proper, to be later described, in any posi-

tion of adjustment. As clearly illustrated in Figure 1, shank 30 is rotatably mounted in the sleeve member and is held from longitudinal movement by one or more ribs 31 formed on the vise shank and engaging a shoulder 32 formed on the inner wall of the sleeve member.

Formed integral with shank or barrel 30 is a large and a small lower vise jaws 33 and 34, respectively, with which cooperate large and small movable jaws 35 and 36, respectively. The movable jaws 35 and 36 are carried by a cross head 37, from which extends a shank member 38, of substantially U-shaped cross-section, which is longitudinally slidably mounted in the barrel 30, the shank having a screw shaft 38 passed therethrough, which is in threaded engagement with a lug 40 carried by barrel 30 and projecting into the channel of shank 38. The upper end of the screw shaft is passed through cross head 37 and has a handle member 41 secured thereto to permit the easy rotation of shaft 39 to move the jaw members 33 and 35, and 34 and 36 toward and away from each other.

From the foregoing description taken in connection with the accompanying drawings, it will be readily obvious that I provide a vise which is adjustable on three different planes to thus facilitate the handling of work of any character or design or which may be supplied with a support mounting to permit its adjustment on but two planes. The various parts are insured sufficient rigidity by the formation of reinforcing ribs 42 and thus no sacrifice of strength results from the construction illustrated.

What I claim as my invention is:

1. A device of the character described, comprising a support, a bracket arm, a swivel connection between one end of the bracket arm and said support, a sleeve member, a swivel connection between the sleeve member and the other end of the bracket arm, and a vise carried by the sleeve member.

2. A device of the character described, comprising a support, a bracket arm, a swivel connection between one end of the bracket arm and said support, a sleeve member, a swivel connection between the sleeve member and the other end of the bracket arm, a vise carried by the sleeve member, and means permitting adjustment of the vise within the sleeve member.

3. A device of the character described, comprising an upwardly and outwardly projecting bracket arm adapted to be secured to a support, a vertical portion on the upper end of the bracket arm and having its outer face recessed, a sleeve member, a boss on the sleeve member rotatably mounted in the recess of said vertical portion, means operable to secure said boss against rotation in said recess, and a vise carried by the sleeve member.

4. A device of the character described, comprising a C-clamp adapted to be secured to a support, a recessed enlargement on the top face of said clamp, an upwardly and outwardly projecting bracket arm, a horizontal portion on the lower end thereof, a boss on the under face of said horizontal portion and rotatably mounted in the recess of said enlargement, means operable to secure said boss against rotation in said recess, a vertical portion on the upper end of the bracket arm and having its outer face recessed, a sleeve member, a boss on the sleeve member rotatably mounted in the recess of said vertical portion, means operable to secure said boss against rotation in said recess, and a vise carried by the sleeve member.

5. A device of the class described comprising a support, a sleeve member adjustable upon said support and adapted to receive therein a vise, and said sleeve member having an internal flange adapted to engage with an external rib carried by said vise to prevent the movement of the latter longitudinally of the former.

6. A device of the class described comprising a support, a split sleeve adjustable upon said support and adapted to receive therein the stationary jaw of a vise, means carried by the sleeve for locking the jaw therein, and a second means carried by the sleeve and coacting with a similar means carried by the jaw for preventing the movement of the latter longitudinally of the former.

7. A device of the class described comprising a support, a split sleeve adjustable upon said support and adapted to receive therein the stationary jaw of a vise, means for securing said sleeve about said jaw, and an internal flange carried by said sleeve and engageable with a rib carried by said jaw for preventing the longitudinal movement of the latter with respect to the former.

In testimony whereof I affix my signature.

WILLIAM C. HANSEN.