May 2, 1933. W. E. PARNELL 1,907,213

SKATE VISE

Filed Dec. 17, 1929

Fig. 3

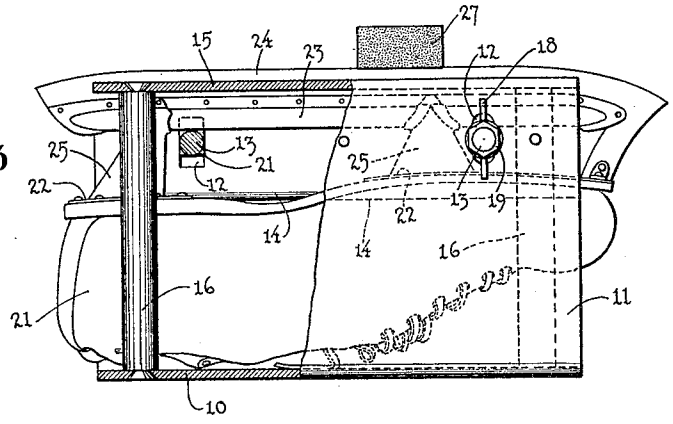


Fig. 2

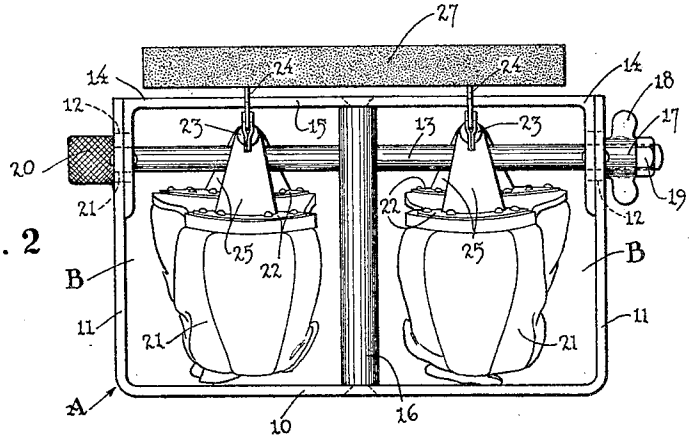
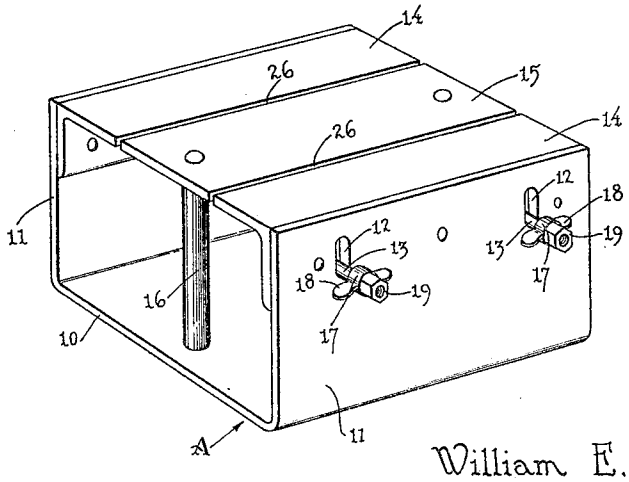


Fig. 1



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UNITED STATES PATENT OFFICE

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SKATE VISE

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My invention relates to improvements in vises in which skates may be conveniently quickly, and accurately ground, an object of the invention being to provide a simple, durable, compact, portable and inexpensive vise including dual jaw structures adapted to receive a pair of skates with or without attached shoes and, further, including clamping devices common to the two jaw structures for simultaneously actuating the jaws thereof.

Another object of the invention is to provide such a vise structure in which a single member is common to the two jaw structures and constitutes one of the jaw elements of each of the two structures.

A further object is to provide a vise of the present character, wherein the clamping devices serve as skate supports and also as manipulating means for simultaneously adjusting a pair of skates to the jaw structures of the vise.

With the foregoing and other objects in view, which will appear in the following description, the invention resides in the novel combination and arrangement of parts and in the details of construction hereinafter described and claimed.

In the drawing, Fig. 1 is a perspective view of a vise embodying my invention; Fig. 2 is an end elevational view of the device shown in Fig. 1, a pair of skates being shown as applied thereto and a grinding stone being illustrated in grinding position upon the running surfaces of the skate blades, and Fig. 3 is a side elevational view illustrating the assembly shown in Fig. 2, a portion of the vise being shown in section.

The illustrated embodiment of my invention includes a channel-like body A of comparatively heavy gauge metal rolled or bent into shape, said body consisting of a base 10 and flanges or wings 11 turned upwardly from said base. These wings, at the upper marginal portions thereof, are formed with opposed vertical slots 12 to receive clamping bolts 13, as will more fully hereinafter appear. Outer jaw members 14 of angle iron are provided, one for each wing 11, each angle member 14 having one of its legs secured to its respective wing along the upper inner margin thereof by suitable means as by riveting or welding. The other leg of each angle member 14 extends inwardly of the body A, its upper surface lying flush with the upper edge of its respective wing and with the upper surface of the corresponding leg of the other jaw member. Interposed between the jaw members is an abutment plate 15, the upper surface thereof being in the same plane as the upper surfaces of said outer jaw members 14. This plate 15 is supported medially longitudinally thereof from its underside by means of posts 16 upstanding from the base 10 on a line medially longitudinal of said base. And said plate constitutes dual jaw members, the respective portions thereof adjoining the adjacent outer jaw members 14 complementing said outer jaw members respectively.

Clamping bolts 13, removably inserted through the opposed slots 12 in the wings 11, are fitted at the corresponding ends thereof with nuts 17, each nut having finger pieces 18 thereon and also being formed with a shouldered portion 19 for the application of a wrench thereto. The other ends of said bolts are formed with heads 20 designed to form finger holds and are shouldered as at 21 (Fig. 3) to fit the slots 12 in the wing 11 against which the heads 20 abut.

The depending legs of the angle jaw members 14 are apertured or otherwise suitably cut away to permit of the insertion of the bolts 13 through the opposed slots 12 and to allow the free play of said bolts in said slots. And too, these jaw members may be formed simply by turning inwardly the upper marginal portions of the wings 11.

The posts 16 are arranged to avoid interference with the bolts 13. In this connection, it will be understood that any suitable equivalent for the posts may be employed, such for example, as a channel iron standing on edge, or a member in the form of an I in cross section. In either of the suggested equivalents, the upright web, of course, would be apertured so as freely to receive the bolts 13 and not interfere with the lateral movement thereof in the slots 12.

Within the body A and at either side of an upright plane passing through the posts 16 is a skate compartment B into which a skate is inserted endwise in inverted position. In the event that a shoe is attached to the skate, as shown at 21 in the drawing, there is ample room in its respective compartment B for the accommodation of the shoe.

The usual skate comprises shoe plates 22, a runner 23 including a blade portion 24 and posts 25 between the runner and shoe plates.

With a pair of skates inserted into the two compartments B of the body A, as above explained, the bolts 13 having been previously removed, the user, reinserts said bolts in the slots 12 in the wings 11, passing the same through the spaces between the runners 23 of the skates and the shoe plates 22 and at the same time seeing that the blade portion 24 of each skate has found entry to its respective slot 26 (Fig. 1) between the abutment plate 15 and the adjacent outer jaw member 14. At this stage of the operation, the skates hang supported on the bolts 13 with the blades 24 thereof having entry into the slots 26 between their respective jaw structures. After starting the nuts 17 on the bolts 13, the user, grasping one of the bolts at 13 at both ends thereof, lifts the same as high as it may be moved, or in other words, until the bolts 13 reach the tops of their slots 12 in the wings 11, or until some parts of the skates, such for example as the barrel portions 23 (Fig. 3) impinge against the undersides of the plates 15 and jaw members 14. The nut 17 of this particular bolt 13 is then tightened by hand. This process is repeated as to the second bolt 13, whereupon the skate runners are lightly clamped between the jaw structures of the device, it being understood, of course, that upon the initial tightening of nuts 17, the wings 11 are drawn together causing the blade of each of the skates to be gripped between the abutment plate 15 and its respective outer jaw member 14. A gauge-block (not shown) is then placed upon the upper bed-like surface of the device adjacent the portions of the blades 24 projecting through the slots 26 above such surface, a mallet of wood or rubber being used at such time to tap the blades downward and thus accurately bring the running surfaces thereof into a common plane. The nuts 17 are then set firmly with a wrench to produce a final clamping action by the dual jaw structures, whereupon a grinding motion is imparted to a sharpening stone 27 or other suitable instrument disposed in riding position upon the two of the skate blades. When the blades 24 have become properly sharpened, the nuts 17 are removed from the bolts 13 and said bolts withdrawn from the device, thus freeing the skates for removal from the vise.

As will be understood from the foregoing description, my improved device is particularly simple, durable and economical in construction. Due to the form and material of the body A, the wings 11 operate automatically to open the dual jaw structures and yieldingly hinge along the lower corners of the body, under the action of the clamping bolts 13, in bringing said jaw structures into skate gripping relation. The vise is relatively small and comparatively light, yet it amply accommodates a pair of skates even with shoes attached. The application of skates to the device may be accomplished quickly and easily, the clamping bolts 13 in addition to the vise closing function thereof, having other important and useful functions. They support the skates with the blades 24 thereof having entry to the slots 26 in the first rough adjustment of the skates to the device; they constitute means for manipulating the skates in the subsequent step of adjustment, wherein the user elevates and secures the bolts 13 in elevated position by hand; they assist in securing an accurate setting of the blades, while the mallet is being used, by aiding the jaw structures in preventing the undue depression of the blades, and they finally materially assist the jaw structures in resisting the movement of the skates in the device, as pressure is being applied to the grinding instrument. The adjacent edges of the plate 15 and jaw members 14, between which the blades of the skates enter, are square with the bed-like upper surface of the device, or in other words, are truly perpendicular so that the grinding stone will cut the running surfaces of the blades squarely and with fine accuracy. The device is thus highly useful even in the hands of a novice, who may accomplish the grinding of skates with dispatch and with precision.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A vise for skates comprising a channel-like body including a base and wings turned upwardly therefrom and formed with opposed apertures in the upper portions thereof, outer jaw members of angle iron, one for each wing, one leg of each angle member being secured to its respective wing along the upper inner margin thereof, the other leg extending inwardly in the horizontal plane of the corresponding leg of the opposing jaw member, an abutment plate constituting dual inner jaw members, said plate being interposed between the horizontally disposed legs of the outer jaw members and in the plane thereof, posts extending upwardly from and

longitudinally medially of the base for supporting said plate longitudinally medially thereof, the adjacent edges of said plate and outer jaw members being normally spaced apart to form a pair of slots for the edgewise reception of the blades of a pair of skates placed within said body, bolts removably inserted through the opposed apertures in said wings and laterally movable therein, and clamping nuts on the bolts adapted, in cooperation therewith, to draw the wings toward each other and simultaneously clamp the members of the jaw structures against their respective skate blades, said bolts providing supports for the skates for holding them in position roughly within the vise structure and for manipulating and holding them during their initial adjustment therein and for further holding them during the final adjustment and during the actual grinding of the skates in the vise.

2. A skate vise comprising a base, spaced uprights at the edges of said base, a pair of angle bars secured to said uprights through one of the legs of each thereof with the other of the legs thereof lying in a common plane and facing one another, the facing edges of said angle legs constituting vise jaws, a plate carried by said base and disposed in the same plane as the denoted legs of said angles and cooperating therewith to form complemental vise jaws and means for drawing said angle bars toward said plate to clamp a pair of skates disposed therebetween.

In testimony whereof I affix my signature to this specification.

WILLIAM E. PARNELL.