

[54] **PORTABLE SKI WORKBENCH**

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[22] Filed: **Oct. 10, 1972**

[21] Appl. No.: **296,197**

[52] U.S. Cl. **269/88, 269/270, 269/296, 269/321 W, 269/321 ME**

[51] Int. Cl. **B25b 1/20**

[58] **Field of Search** ... 51/240 R; 144/286 R, 286 A, 144/287, 288 R, 288 C; 269/86, 88, 95, 134, 156, 164, 257, 265, 266, 296, 297, 298, 299, 300, 301, 315, 318, 319, 321 W

[56] **References Cited**

UNITED STATES PATENTS

1,335,721 4/1920 Bergstrom 144/288 R
1,497,107 6/1924 Lasell 269/164 X

2,312,165 2/1943 Huebner 144/288 R
2,473,643 6/1949 Froblom 269/265 X
2,476,721 7/1949 Garner 144/288 R
3,322,456 5/1967 Strakhal 269/266 X

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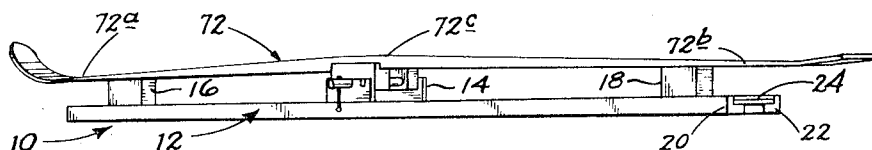
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[57]

ABSTRACT

A portable ski workbench including in combination a base comprising a pair of parallel spaced rails joined adjacent their ends to form a track, a pair of longitudinally spaced ski support members slidably mounted on the track, and a ski holding device secured to the track intermediate the support members. Use of the workbench enables a skier to work on his equipment at locations where no shop facilities are available.

11 Claims, 4 Drawing Figures



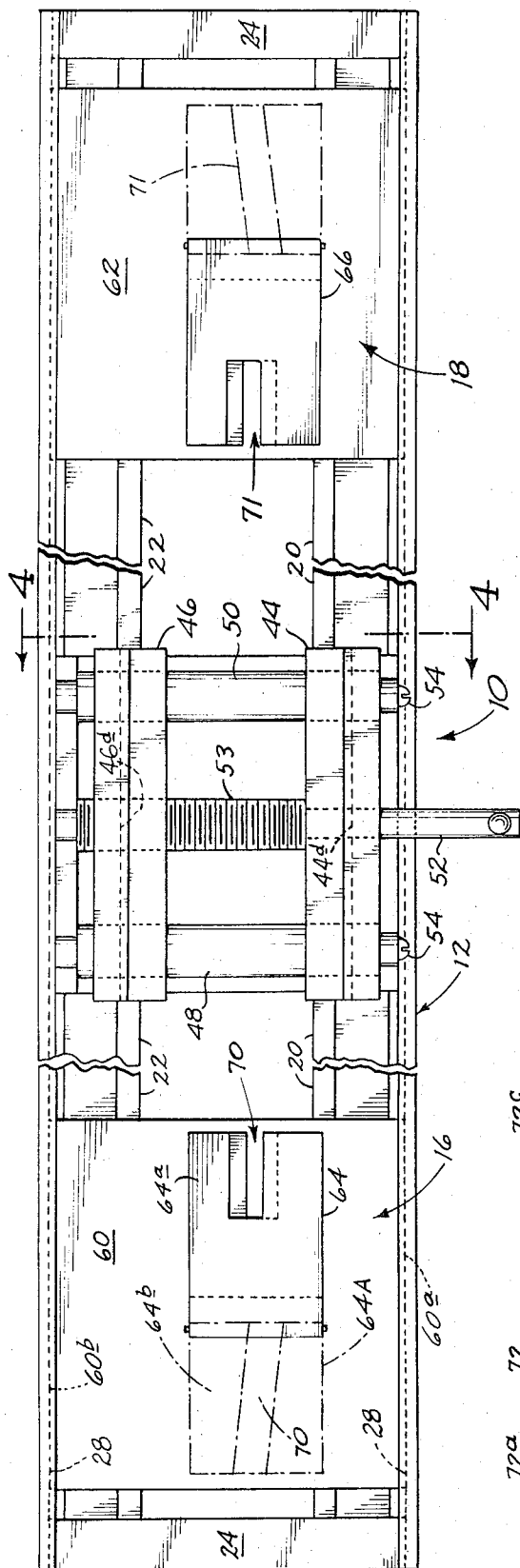


Fig. 1.

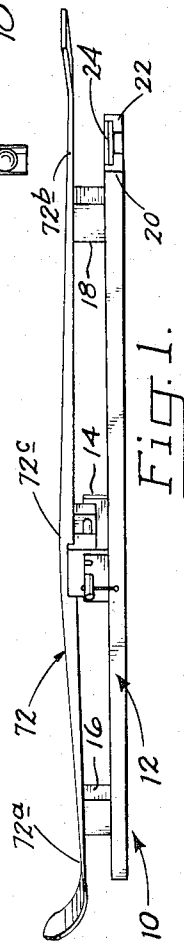


Fig. 2.

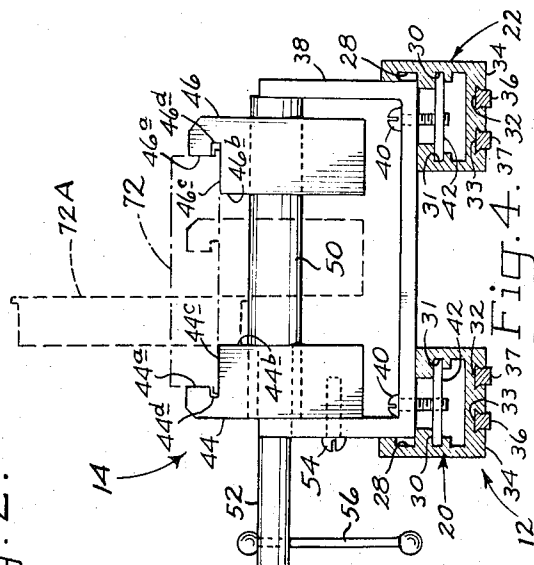


Fig. 3.

PORTABLE SKI WORKBENCH

BACKGROUND AND SUMMARY OF THE INVENTION

Ski racers, and other serious skiers interested in obtaining maximum performance from their equipment, often need to "tune" their skis by, for example, adjusting the bindings, sharpening the edges or flat-filing the bottoms of the skis. For best results, these procedures should be performed with the ski held firmly by a vise or other suitable fixture. Often, however, it is necessary for a skier to do this work at locations where no shop facilities are available. Thus, a need exists for a convenient portable workbench which can be taken to a skiing site, and which will hold a ski firmly in the correct position while it is being worked on.

It is, therefore, a general object of the present invention to provide a workbench for holding a ski securely for work on the top, bottom or either side without marring or otherwise damaging it.

A more specific object of the invention is to provide such a workbench which is compact, lightweight, and easily portable.

Still another object is to provide a portable workbench which can be placed on any convenient supporting surface and used without clamping it to the surface, and without marring or otherwise damaging the surface.

A further object of the invention is to provide such a workbench which can be quickly and easily adjusted to hold any ski.

Accordingly, a lightweight, portable workbench is provided including in combination a base comprising a pair of parallel spaced opposing rails joined to form a track, a pair of longitudinally spaced ski support members slidably mounted on the track, and ski holding means releasably secured to the track intermediate the support members. In a preferred embodiment, the ski holding means comprises a vise having jaws specifically configured to grip a ski by its opposing upstanding surfaces without applying pressure to the ski's protruding metal edges.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other objects and advantages of the novel workbench of the invention will become more apparent as the description which follows is read in conjunction with the accompanying drawings, wherein:

FIG. 1 is a perspective view of the novel workbench of the invention, shown holding a ski in position for work on the top of the ski;

FIG. 2 is a foreshortened detailed plan view of a preferred embodiment of the invention;

FIG. 3 is a fragmentary side elevation of the workbench of FIG. 2; and

FIG. 4 is an end view, partially in cross-section, taken along line 4-4 of FIG. 2.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, and in particular to FIG. 1, the novel workbench of the invention, indicated generally at 10, includes an elongate base 12, clamping means or vise 14, and a pair of longitudinally spaced ski support members 16, 18. Base 12 comprises a track formed by connecting parallel spaced, opposing rails 20, 22 adjacent their ends by a pair of cross-tie strips

24 (one shown in FIG. 1). Vise 14 is releasably clamped to the track intermediate the support members, about midway between the ends of the track.

Support members 16, 18 are slidably mounted on the track for movement toward and away from the vise, and thus may be positioned to accommodate skis of different lengths. As will be more fully explained, each ski support member includes a hinged support block positionable at either of two support heights, a lower height for use with a ski held upright in the vise (as in FIG. 1), and an upper height used when a ski is held in an inverted position. Each support block also includes a slotted portion or channel for supporting a ski on edge.

Referring now to FIGS. 2-4, base 12 comprises a pair of identical, spaced, opposing rails 20, 22, suitably connected adjacent their ends by cross-tie strips 24, to form a rigid track structure. The track structure illustrated in the drawings has an overall length of about 5 feet, and a width of about 6 inches. In the preferred embodiment illustrated, rails 20, 22 are cut from lengths of an aluminum alloy extrusion having the cross-section shown in FIG. 4. Other suitable materials may be used; however, aluminum provides a strong, lightweight, corrosion-resistant structure.

As shown in FIG. 4, each rail includes an upper interior slot 28 and a pair of opposing central interior slots 30, 31 each extending the length of the rail. In addition, each rail includes a pair of spaced exterior slots 32, 33 extending the length of bottom surface 34. Slots 32, 33 are configured to retain resilient insert strips 36, 37 which, as shown in FIGS. 3 and 4, protrude beyond bottom surfaces 34 to serve as mounting members for the base. Insert strips 36, 37 are preferably formed from an elastomer having a highly frictional surface, such as neoprene.

Mounted on the track formed by rails 20, 22 is a vise 14 of generally conventional construction, except as hereinafter explained. Vise 14 includes a U-shaped mounting portion or carrier 38, releasably secured to the rails by clamping screws 40 and clamping strips 42 in the manner shown. Clamping strips 42 are slidably received within opposing slots 30, 31 of the rails. Thus, vise 14 may be re-located along the track by loosening screws 40, sliding the carrier to a new location, and re-tightening the screws.

Vise 14 further includes a pair of opposing jaw members or jaws 44, 46 supported within carrier 38 on rods 48, 50 and drive screw 52. Jaw 44 is secured to carrier 38 by screws 54, and thus is held stationary. Jaw 46 engages threaded portion 53 of drive screw 52 for movement toward and away from jaw 44 by turning drive handle 56.

As best shown in FIG. 4, jaws 44, 46 each include a pair of offset clamping surfaces including upper clamping surfaces 44a, 46a and lower clamping surfaces 44b, 46b. Surfaces 44a, 44b and 46a, 46b are joined by support surfaces 44c, 46c and relief slots 44d, 46d, respectively. To prevent damage to a ski held in the vise, jaws 44, 46 are preferably formed from a high-density polymeric material, such as polyethylene.

Referring now to FIGS. 2 and 3, support members 16, 18 include mounting portions or plates 60, 62 and supporting portions or blocks 64, 66, respectively. Plates 60, 62 are formed from a suitable material, such as high density polyethylene, which provides good rigidity, strength, and slidability. Blocks 64, 66 are pref-

erably of a high-density polymer such as polyethylene.

Support member 18 is an essentially identical, but mirror image replica of member 16. Therefore, the support members will be more fully described with reference to member 16 alone, it being understood that each feature and function attributed to member 16 is also possessed by member 18.

As shown in FIGS. 2 and 3, mounting plate 60 of support member 16 extends between rails 20, 22 with lateral edge portions 60a, 60b slidably received opposing slots 28 which are provided in the rails. Thus, member 16 may be moved to any desired location between cross-tie 24 and vise 14 by sliding plate 60 along the track. Plate 62 is similarly mounted for movement.

Block 64 is attached to plate 60 by a hinge 68, and thus may be swung between a first position, shown in solid outline, and a second position shown in dot-dash outline. As shown in FIG. 3, block 64 has a nonsquare rectangular profile. Thus, disposed in the first position, block 64 provides a generally horizontal supporting surface 64a having a support height X. After being swung into the second position 64A, a supporting surface 64b having a greater support height Y is provided. Thus, block 64 is discretely positionable between a first position having a given lower support height and a second position having a greater height.

Block 64 also includes a support slot or channel 70 opening into surface 64b for supporting a ski on edge. As shown in the drawings, channel 70 is disposed at a slight angle, preferably at about 4°, to the longitudinal axis of the track. As will be appreciated, the angular alignment of channel 70 compensates for the curvature or camber built into a ski. Block 66 includes a similar angularly aligned channel 71, disposed to provide an included angle of about 172° between it and channel 70.

An important feature of the novel workbench of the invention is the configuration of jaws 44, 46 in vise 14. As is generally known, most modern skis are equipped with metal edges. These generally consist of metal strips secured to the bottoms of the skis along either edge. Normally, the strips protrude slightly beyond the sides of the skis. With a ski 72 held in an upright (base-down) position between jaws 44, 46 as shown in dash-dot outline in FIG. 4, the metal edge strips are received with clearance within relief slots 44d, 46d, allowing upper clamping surfaces 44a, 46a to engage the opposite sides of the ski without applying pressure to the edges. Damage to these edges is thereby avoided. It should also be noted that the height of upper clamping surfaces 44a, 46a is limited to about 75 percent of the thickness of a typical ski. The importance of this construction will be more fully explained later.

Support surfaces 44c, 46c are included in jaws 44, 46 to provide firm support for the central portion of a ski and reduce the amount of clamping pressure needed to retain the ski in position during work on its top or base.

Still referring to FIG. 4, ski 72 is shown in an on-edge position in dashed outline at 72A, resting on rods 48, 50 of the vise, and held between lower clamping surfaces 44b, 46b of the jaws. Such a position is used for working on the then upper side or edge of the ski.

Another important feature of the invention is the configuration of supporting blocks 64, 66. As is well known, skis are normally formed with a chamber ex-

tending the greater part of their length. Thus, referring to FIGS. 1 and 3, the tip and heel portions 72a, 72b, respectively, of a ski 72 held upright in vise 14 will be lower, i.e., closer to the track, than the center portion 72a held in the vise. To compensate for this, support height X of surface 64a is lower than the support height of surfaces 44c, 46c of the vise. With a ski inverted for work on its base, the tip and heel portions are elevated with respect to the center portion. Therefore, for supporting a ski in an inverted position, blocks 64, 66 are swung into an upright position providing a support height Y greater than that of surfaces 44c, 46c.

To use the novel ski workbench for "tuning" a ski, the base 12 of the bench is first placed on any convenient supporting surface, such as a table, counter or a pair of chairs. The resilient elastomer strips 36, 37 prevent damage to the surface by the rails. But more important, the strips grip the supporting surface and prevent the workbench from slipping or sliding, thus eliminating any need to clamp the workbench to the surface.

For work on the top of a ski, support members 16, 18 are moved inward along the track toward vise 14. The ski is then clamped between the jaws of the vise, with its base resting on support surfaces 44c, 46c. Next, with blocks 64, 66 in the lower support position, members 16, 18 are moved outward along the track until the supporting surfaces of blocks 64, 66 make contact with the base of the ski. Support members 16, 18 are properly positioned when the supporting surfaces of the blocks fully contact the base of the ski without bending the ski upwards against its natural camber.

For work on the bottom or base of the ski, support members 16, 18 are initially moved outward on the track toward cross-tie strips 24. Then, with the ski held in an inverted position in vise 14, members 16, 18, with blocks 64, 66 in their upright positions, are moved along the track until the supporting surfaces of the blocks firmly contact the downwardly facing top of the ski. In such a position, the top side of the ski (which now faces the track) rests on surfaces 44c, 46c, with the ski's edges disposed above and clearing the tops of the jaws. The limited heights (mentioned earlier) of surfaces 44a, 46a afford such clearance for the edges.

Work on an edge of the ski is also performed with blocks 64, 66 in an upright position. The ski is supported on edge in channels 70, 71 of the blocks, and held by lower clamping surfaces 44b, 46c of the jaws, with the top surface of the ski abutting surface 44b.

It should be noted that vise 14 may be moved, if desired, to any location along the length of the track between support members 16 and 18. Removal of screws 54 allows jaws 44, 46, support rods 48, 50 and drive screw 52 to be removed from carrier 38 as a unit, providing ready access to clamping screws 40.

There is thus provided a lightweight, portable ski workbench which can be easily adjusted to hold a ski securely in position for work on the top, bottom or either side without damaging the ski in any way.

Although a preferred embodiment has been described herein, it is understood that variations and modifications are possible without departing from the spirit of the invention. It will be readily appreciated that, for example, the dimensions and general configuration of the novel workbench may be varied substantially. In addition, other modifications may occur to ordinarily skilled workers. For example, hinge means may

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be provided in the base of the workbench to allow it to be folded compactly for transportation or storage. Such modifications are deemed within the scope of the invention as claimed.

I claim:

1. A portable ski workbench including in combination

an elongate, substantially planar mounting base comprising means defining an elongate track,

ski clamping means mounted on the track adjacent one side of the base and intermediate its ends for holding a ski fixedly in place adjacent and overlying said one side of the base, with a ski, when so held, occupying any one of several positions, including one position with the base of the ski confronting the track, another position with the top of the ski confronting the track, and a third position with an edge of the ski confronting the track, said clamping means comprising a pair of opposing jaw members each including a pair of parallel, offset clamping surfaces, and

a pair of longitudinally spaced support members mounted on said track adjacent said one side of the base, on opposite sides of said clamping means, each independently adjustable to different locations along the track, said support members each including a pair of independently selectable support surfaces, with each surface in operative position presenting a different support height with respect to said one side of the base.

2. The workbench of claim 1, wherein the support members are slidably mounted on said track.

3. The workbench of claim 1, wherein each support member includes means for receiving the marginal portion of a ski under circumstances of the ski being held in the workbench in a position with its edge confronting said track, said receiving means comprising a channel formed in at least one of said support surfaces, with said channel in operative position comprising a base portion disposed substantially parallel to said one side of the mounting base, and a pair of upstanding sidewalls disposed at an acute angle to the longitudinal axis of the track.

4. The workbench of claim 1 which further includes means mounting said clamping means for adjustment to different locations along said track.

5. The workbench of claim 1, which further includes high-friction resilient members mounted on the side of said base opposite said one side for supporting the workbench on a surface external to said workbench.

6. A portable ski workbench comprising in combination

an elongate, substantially planar mounting base comprising a pair of elongate, spaced-apart rails defining a track,

ski holding means mounted on the track adjacent one side of the base and intermediate its ends for holding a ski fixedly in position adjacent and overlying said one side of the base, with a ski when so held occupying any one of several positions, including one position with the base of the ski confronting the track, another position with the top of the ski confronting the track, and a third position with an

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edge of the ski confronting the track, said holding means comprising carrier means releasably secured to the rails and carrying a pair of opposing jaw members, each jaw member including a pair of parallel, offset clamping surfaces disposed substantially parallel to the longitudinal axis of the track and normal to said one side of the base, each jaw member further including a support surface intermediate and substantially normal to said clamping surfaces and substantially parallel to said one side of the base, and

a pair of independently positionable ski support members slidably mounted on said track on opposite sides of said holding means, said support members each including a pair of independently selectable support surfaces, with each in operative position presenting a different support height with respect to said one side of the base, and

base support means comprising a member of a high-friction resilient material mounted on the side of said base opposite said one side for supporting the workbench on a surface external to the workbench.

7. The workbench of claim 6, wherein each support member includes means for receiving the marginal portion of a ski under circumstances of the ski being held in the workbench in a position with its edge confronting the track, said receiving means comprising a channel formed in at least one of said support surfaces, with said channel in operative position comprising a base portion disposed substantially parallel to said one side of the mounting base, and a pair of upstanding sidewalls disposed at an acute angle to the longitudinal axis of the track.

8. The workbench of claim 6, wherein said jaw members each include means for accommodating the protruding edge portions of a ski when a ski is held by said members with its base confronting the track, said accommodating means comprising an elongate slot intermediate said member's support surface and one of said pair of clamping surfaces.

9. The workbench of claim 6, wherein each support member includes a carrier plate extending between said rails, and an elongate support block hingedly attached along one edge to said plate, said block being thereby swingable from a first position presenting a first support surface at a first support height to a second position presenting a second support surface at a second support height.

10. The workbench of claim 9, wherein each of said support blocks includes a channel formed in at least one of said support surfaces, with said channel in operative position comprising a base portion disposed substantially parallel to said one side of the mounting base, and a pair of upstanding sidewalls disposed at an acute angle to the longitudinal axis of the track.

11. The workbench of claim 9, wherein said first support height is less than the height with respect to said one side of the base of the jaw members' support surfaces, and said second support height is greater than the height of the jaw members' support surfaces.

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