Aug. 14, 1945. J. M. HARTMAN 2,382,149

HEEL SUPPORT FOR WATER SKIS

Filed Feb. 21, 1944

Fig. 1.

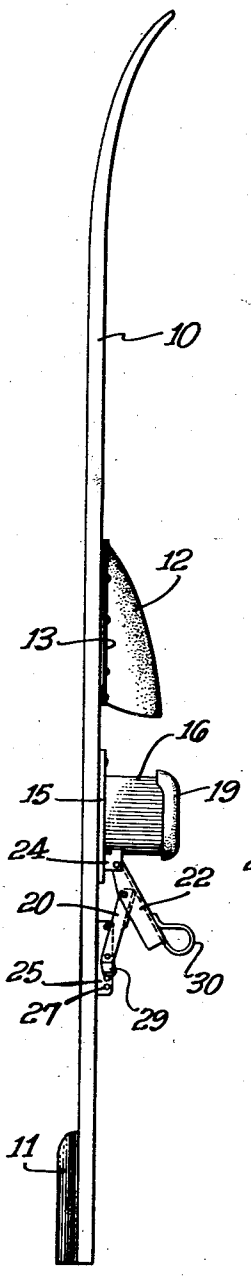


Fig. 2.

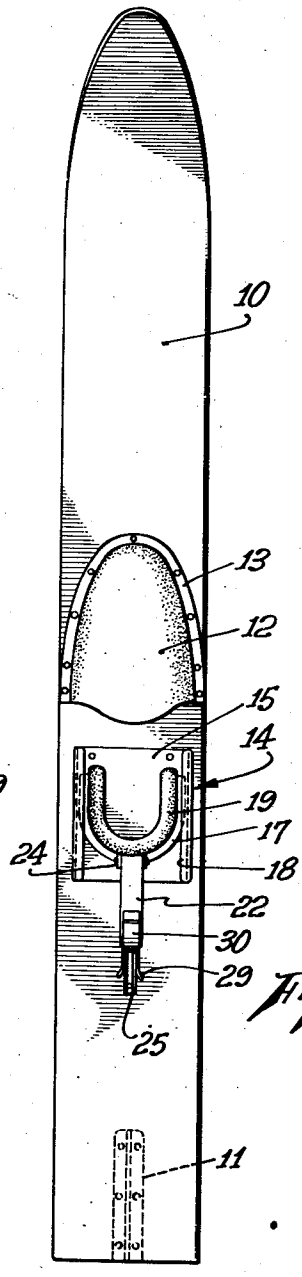


Fig. 3.

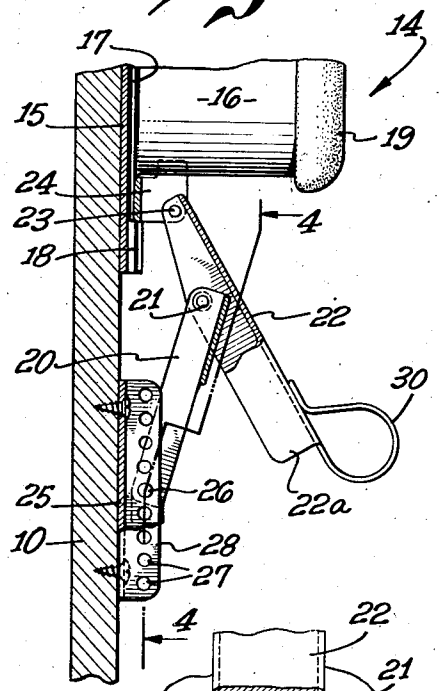
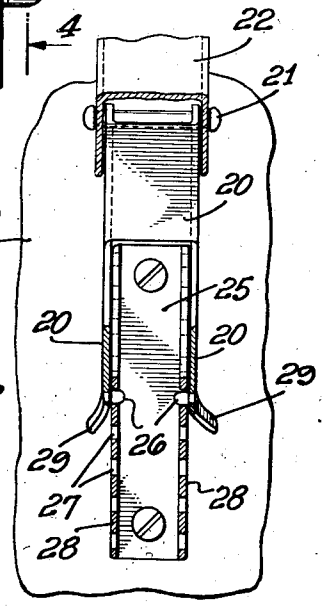


Fig. 4.



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HEEL SUPPORT FOR WATER SKIS

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7 Claims. (Cl. 9—21)

This invention has to do with developments in water skis of the type used by a rider behind a tow boat, and is particularly concerned with improvements in the foot or heel supporting parts of the ski that considerably enhance its practicability and convenience in use.

The ski rider will of course on occasions fall or be thrown into the water, at which time his feet are removed from the skis. Ordinarily it is desirable to be able to remount the skis without support by the tow boat or other assistance. The facility with which the skis may be remounted in the water depends largely upon the ease with which the rider's feet may be replaced and properly supported in the foot attachment assembly carried by the skis. Accordingly, one of the major objectives of the invention is to provide an improved foot attachment, and particularly with reference to the heel support, whereby such support may very easily and quickly be moved to a released position and then applied in properly fitted relation to the rider's foot.

The general type of heel support contemplated by the invention is one comprising a supporting member movable longitudinally of the ski to and from the heel-engaging position. The invention aims to provide a quick-operating shifting device permitting initially a close or accurate adjustment of the heel supporting member to the rider's foot, and thereafter quick and easy shifting of the support so that when in the water, the rider may by a simple manipulation release and then reapply the support to its heel-engaging position.

While the invention contemplates the use of different specific forms of heel support shifting mechanisms, it is preferred to use a toggle-type device by reason of its quick making and breaking action. Accordingly, the toggle device may comprise a pair of pivotally interconnected links at the rear of the heel support, a forward link of the toggle being connected to the heel support and the rear toggle link attached to a suitable anchor or mounting secured to the ski. A suitable handle, preferably formed as an extension of one of the toggle links, is accessibly positioned for operation to shift the heel support. A further important feature and object is the provision of an adjustable connection between the toggle and anchor member, permitting the effective toggle throw and movement of the supporting member in a heel-engaging direction, to be predetermined and fitted to the rider's foot.

All the various features and objects of the invention will be understood to better advantage from the following detailed description of a typical and illustrative embodiment of the invention, reference being had throughout the description to the accompanying drawing in which:

Fig. 1 is a view showing the ski in side elevation;

Fig. 2 is a top plan view of the ski;

Fig. 3 is a fragmentary enlarged view showing portions of the heel support adjusting device in section; and

Fig. 4 is an enlarged sectional view on broken line 4—4 of Fig. 3.

It will be understood that the body 10 of the ski may have any suitable pattern or specific shape and form. Merely as illustrative, it is shown as a conventional single piece ski of regular shape carrying at the rear a rudder blade or fin 11. In connection with the foot attachment parts, a suitable type and form of forward or toe section may be used. Typically this section of the foot attachment is shown to comprise a flexible piece 12 fastened to the surface of the ski at 13 and shaped to receive and support the rider's foot against movement away from the heel section.

The invention is more particularly concerned with the adjustable heel supporting device, generally indicated at 14, which in its preferred form comprises a base plate 15 attached to the surface of the ski and carrying the curved heel supporting member 16 which is slidable longitudinally of the ski on the plate 15 and is guided in such movement by flanges 17 integral with the support 16 and received within ways formed by the turned sides 18 of the plate. The member 16 may be suitably padded, as by a rubber cushion 19 extending inside and downwardly about its top edge, substantially as illustrated.

The heel supporting member 16 is actuated in a sliding movement on plate 15 by a toggle linkage more particularly shown in Fig. 3 to comprise a link 20 pivotally connected at 21 to a second link 22 intermediate its ends, link 22 in turn being pivotally connected at 23 to a clevice 24 on the rear of the member 16. Link 20 is connected to an anchor piece 25 in a manner permitting adjustment of the point of connection longitudinally of the ski, to thereby permit adjustment, in the extended position of the toggle, of the position of member 16 with relation to the forward section 12 of the foot attachment, and thus in properly fitted relation to the rider's foot. It is contemplated that such adjustable connection between link 20 and the anchor piece 25 may take any of various specific forms. Typi-

cally, link 20 is shown to be channel-shaped, at least throughout a portion of its length, and to carry a pair of projections 26, see Fig. 4, insertable within any opposed pair of openings 27 in the upstanding side portions 28 of the anchor piece, the projections 26 being retained within the openings by the resiliency of the side portion of the links carrying the projections. The ends of the side portions may be turned outwardly at 29 to facilitate spreading apart of the sides and withdrawal of the projections 26 from the openings in making readjustments.

Link 22 may also be channel shaped so that upon downward swinging movement from the position of Fig. 3 to extend the toggle, the channel will fit telescopically over the link 20 and the sides 22*a* of link 22 will be brought into overlapping relation with the sides of link 20 to prevent their spreading apart and removal of projections 26 from the openings 27. In this manner, the connection between the toggle links and anchor piece is locked against accidental release in the extended position of the toggle. Link 22 is provided with an easily accessible handle, such as the looped portion 30, to facilitate quick release or advancement of the heel supporting member 16.

From the foregoing it will be understood that the connection between link 20 and the anchor piece 25 initially may be adjusted to apply the heel support 16 in proper fitted engagement with the rider's foot in the advanced position of the toggle. Upon removal of the ski in the water, the support 16 may be quickly and easily released to permit insertion of the foot in the section 12, and again advanced against the heel, quickly and easily by manipulating the toggle link 22 as described.

I claim:

1. In combination with a water ski, a base plate applied to the top surface of the ski, a heel support reciprocally slidable longitudinally of the ski on said plate, adjustable means for limiting the movement of said support in a heel engaging direction to any of selected positions, and means operable independently of the operation of adjusting the first mentioned means for moving the support to and away from the selected heel engaging position.

2. In combination with a water ski, a base plate applied to the top surface of the ski, a heel support reciprocally slidable longitudinally of the ski on said plate, an anchor member attached to the ski at the rear of said support, a toggle comprising a forward link attached to said support and a rear link pivotally connected to said forward link, a projection carried by said rear link and selectively receivable within any one of a series of spaced openings in said anchor member to selectively adjust the displacement by the toggle of said support in a heel engaging direction.

3. In combination with a water ski, a base plate applied to the top surface of the ski, a heel support reciprocally slidable longitudinally of the ski on said plate, an anchor member attached to the ski at the rear of said support, a toggle comprising a forward link attached to said support and a channel-shaped rear link pivotally connected to said forward link, a pair of projections carried by said rear link and receivable within any of a series of pairs of spaced openings in said anchor member to selectively adjust the displacement by the toggle of said support in a heel-engaging direction, and a channel-shaped handle extension on said forward link and adapted to fit over said rear link to maintain said projections in said openings.

4. In combination with a water ski, a heel support reciprocally movable longitudinally of the ski in heel engaging and releasing directions, adjustable means for limiting the movement of said support in a heel engaging direction to any of selected positions, and releasable holding means operable independently of said adjustable means for holding the support in a selected heel engaging position, said support being freely reciprocable by pressure applied to the support itself when said holding means is released.

5. In combination with a water ski, a heel support reciprocally movable longitudinally of the ski in heel engaging and releasing directions, adjustable means at the rear of said support for limiting the movement of said support in a heel engaging direction to any of selected positions, and releasable holding means comprising and operable by a vertically swinging handle for holding the support in a selected heel engaging position, said support being freely reciprocable by pressure applied to the support itself when said holding means is released.

6. In combination with a water ski, a heel support reciprocally movable longitudinally of the ski in heel engaging and releasing directions, means adjustable longitudinally of the ski, said support being movable longitudinally of the ski relative to said adjustable means, and holding means connected to said adjustable means normally at a fixed location longitudinally of the ski and connected also to said support, said holding means being operable to releasably hold the support in its heel engaging position and to advance the support from released position to heel engaging position a distance determined by the adjustment of said adjustable means.

7. In combination with a water ski, a heel support reciprocally movable longitudinally of the ski in heel engaging and releasing directions, adjustable means spaced rearwardly from said support for controlling the heel engaging position of the support, and means connected to said adjustable means and to the rear of the support and operable to releasably hold the support in its heel engaging position and to advance the support from released position to heel engaging position a distance determined by the adjustment of said adjustable means.

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