Aug. 15, 1967 L. S. HERMANNS 3,336,040

HOLDING AND CONVEYING DEVICE

Filed Sept. 7, 1965

Fig.1

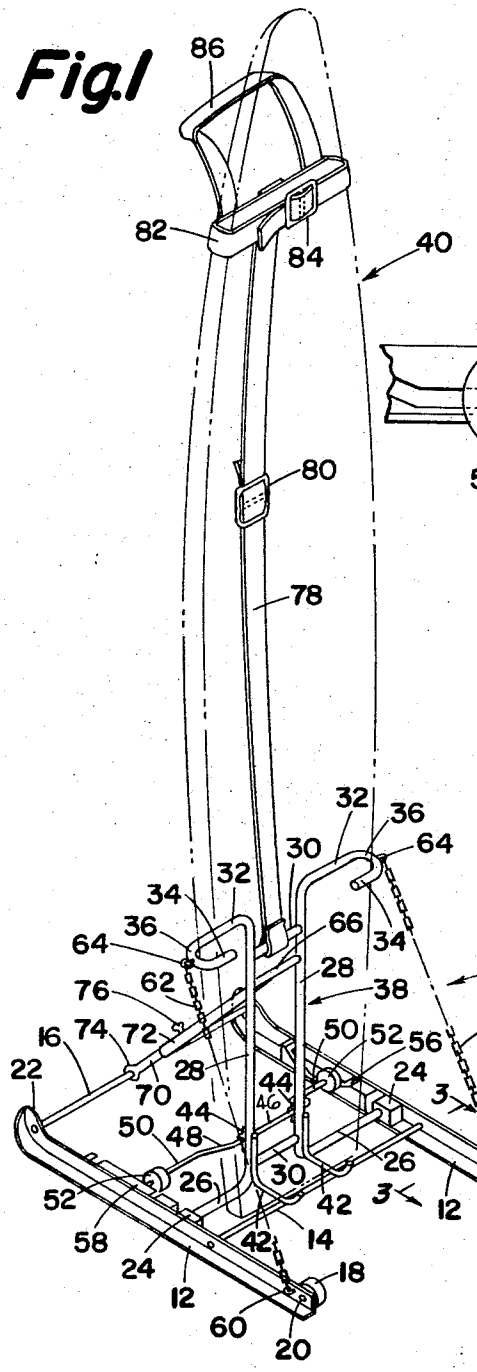


Fig.2

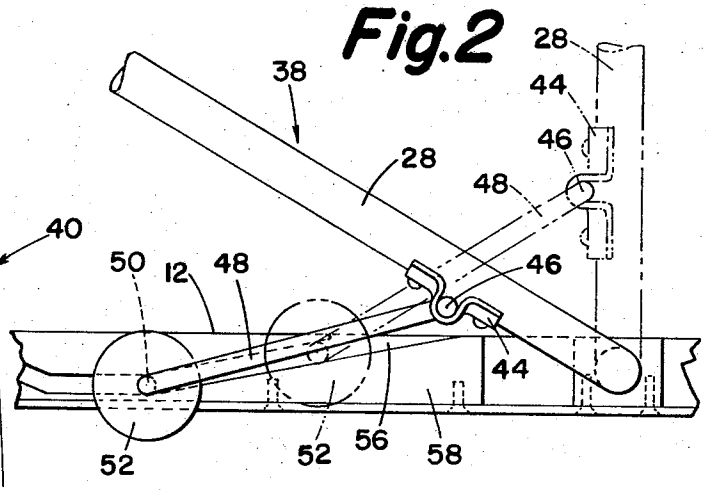


Fig.5

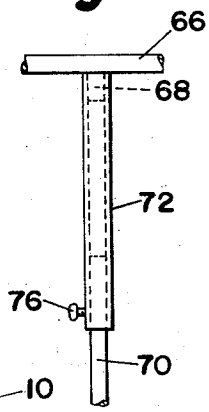


Fig.3

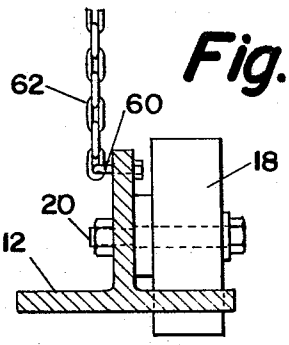
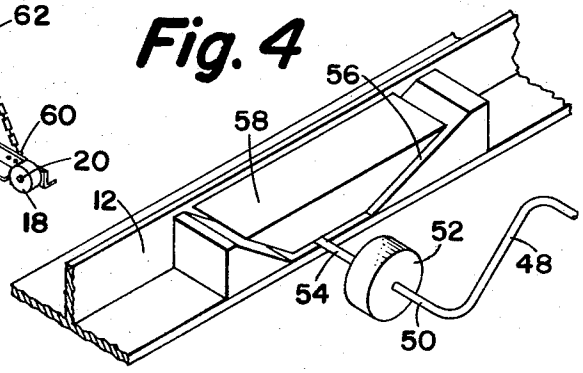


Fig. 4



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United States Patent Office 3,336,040 Patented Aug. 15, 1967

3,336,040

HOLDING AND CONVEYING DEVICE

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Filed Sept. 7, 1965, Ser. No. 485,512
7 Claims. (Cl. 280—43.1)

ABSTRACT OF THE DISCLOSURE

A movable support for an elongated article such as a surfboard wherein the support comprises a pair of skids having rollers thereon, and a brace means pivotally mounted on the skids to pivot from a substantially horizontal to a vertical position. The brace means prevents the article from toppling over in any direction, and has rollers which move with it so that they underlie the skids and act as the sole roller support for the device when the brace is in the horizontal position, and move to a nonoperative position above the skids when the brace means is in the vertical position. The brace means is open at one end to permit slidable removal of the article.

This invention relates to a holding and conveying device, and it particularly relates to a device of this type that may be particularly adapted for holding and conveying surf boards and the like.

Surf boarding, as a water sport, has achieved wide popularity in recent years and promises to have even increased popularity in the future. This sport utilizes a long, generally oval-shaped, flat board of wood, fibre glass, plastic, or the like, about nine feet in length, upon which the user stands or lies as the board is picked up and carried toward the shore by the breaking waves of the surf.

These surf boards, being large and bulky, are difficult to handle and move along the ground, are difficult to store, and are difficult to convey by automobile or the like. Nevertheless, despite their bulk, they are quite thin and relatively fragile and may be easily damaged if not properly handled prior to use in the water. Since such surf boards are relatively expensive and can become useless for their purpose when subjected to seemingly slight damage, it is important to provide a means for handling, conveying and storing them when not in the water.

It is one object of the present invention to overcome the problems of handling, storing and conveying surf boards and similar articles by providing a device that can easily be used for all three functions.

Another object of the present invention is to provide a holding, conveying and storing device of the aforesaid type which is relatively simple and inexpensive in construction but which is, nevertheless, sturdy and not easily damaged.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following description when read in conjunction with the accompanying drawings wherein:

FIG. 1 is a perspective view of a holder embodying the present invention, the holder being shown in the vertical position to engage a surf board.

FIG. 2 is an enlarged, fragmentary, side elevational view of one of the skids and its associate members.

FIG. 3 is an enlarged, fragmentary, sectional view taken on line 3—3 of FIG. 1.

FIG. 4 is an enlarged, fragmentary, perspective view showing the relationship between the adjustable rollers and the cam means.

FIG. 5 is an enlarged, fragmentary, elevational view showing the brace bar assembly.

Referring now in greater detail to the various figures of

the drawing wherein similar reference characters refer to similar parts, there is shown a holder, generally designated **10**, comprising a pair of laterally-spaced, parallel skids **12**, constructed of polished wood, aluminum, fiberglass, plastic, or any other desirable material. These skids **12** each have a T-shaped cross-section, as best shown in FIG. 3, and are held in spaced relationship by a pair of spacer rods **14** and **16**.

At what may be called the rear end of each skid **12**, its inner horizontal flange stops short to permit the provision of a wheel or roller **18** rotatably mounted on a pin **20** which projects laterally from the corresponding vertival flange of the skid. The front ends of the skids **12** are upturned, as at **22**, and these upturned ends support the spacer or tie rod **16**.

Intermediate their ends, the skids **12** are respectively provided with bearing blocks **24**, in each of which is journaled a corresponding end of an offset portion **26** of a tubular support rod **28**. These support rods **28**, which are laterally spaced from each other by spacer or tie rods **30**, are each provided at their free ends with lateral arms **32**. Each arm **32** is provided with a reverse bend **34** integrally connected thereto by an elbow portion **36**. The entire assembly constituted by members **26, 28, 30, 32, 34** and **36** comprises a support means, generally designated **38**, for supporting a surf board, such as shown in dotted outline at **40**, or a similar article.

Each of the rods **28** of the assembly **38** is provided with a bracket or hook **42**. Each bracket or hook **42** has a longer arm connected to the corresponding rod **28**, a bridge portion, and a shorter arm extending transversely from the bridge portion. These brackets **42** act as stops whereby, when they abut the rod **14** (as shown) they limit further pivotal movement of the assembly **38** around the pivots formed by the rotatable positioning of the portions **26** in their respective bearing blocks **24**.

Each rod **28** is provided, adjacent its lower end, with a bearing **44**. These bearings **44** are on the reverse side of their respective rods **28** from the corresponding brackets **42**, and rotatably support a shaft **46** extending therethrough. The shaft **46** has similar offset portions **48** on opposite sides thereof, and these offset portions **48** are each integral with a straight end portion **50**. Each end portion **50** serves as a shaft to support a rotatable wheel or roller **52** intermediate their ends. The free end **54** of each portion **50**, beyond the corresponding roller **52**, extends into a cam slot **56** in a corresponding cam block **58** mounted on the corresponding skid **12** (as best shown in FIG. 4).

Each cam slot **56** consists of two oppositely-inclined portions connected by a straight central portion. The shaft end **54** acts as a follower and rides in the cam slot **56** as the support assembly **38** is pivoted from the vertical position shown in FIG. 1 into a substantially horizontal position or from the horizontal position to the vertical position.

As the support assembly moves from the vertical to the horizontal position, the roller shaft portions **48** swing down, and the followers **54**, as they ride through the right inclined portion of the cam slots **56** (as viewed in FIGS. 2 and 4) guide the rollers **52** from a position upwardly of their corresponding skids **12** to a position where they project below (as shown in FIG. 2). In this position, where the follower **54** is in the straight central portion of the cam slot, the support assembly **38** is slightly inclined (as shown in FIG. 2). If the support assembly **38** is then moved into the substantially full horizontal position, the followers **54** ride through their upwardly inclined slot portions (shown at the left in FIGS. 2 and 4) and the rollers **52** are again lifted above the lower levels of their respective skids **12**.

An eyelet **60** is provided at the end of each skid **12**, adjacent the respective rollers **18**, and to each of these eyelets is connected one end of a chain **62**. Each elbow portion **36** of the support assembly is also provided with an eyelet **64**. Each eyelet **64** is adapted to releasably be secured to a corresponding chain **62** when the support assembly is in the vertical position (as in FIG. 1). These chains **62** prevent the support assembly from falling forward while the brackets **42** simultaneously prevent it from falling backward. When it is desired to pivot the support assembly to the horizontal position, the chains **62** are first released from the eyelets **64**. Then when the support assembly is in the lower inclined position (as in FIG. 2) or in the full horizontal position, the chains **62** can be wrapped around it and around the surf board or the like supported thereby to secure the assembly in such position.

Between the rods **28** is an additional cross-bar **66** on which is provided a small boss **68**. A pair of tubular, telescopic members **70** and **72** are provided, the lower tube **70** being pivoted to the tie rod **16** at **74**. The upper tube **72** is slidable on lower tube **70** and is adapted to be held in longitudinally adjusted position relative thereto by a set screw **76**.

In operation, when the support assembly is moved to the vertical position, the lower tube **70** is pivoted to the correct angle and the upper tube is slid to the position shown in FIG. 5 where it telescopically embraces the boss **68**. This provides a rigid bracing means in addition to the action of the chains **62**.

If desired, either the chains **62** may be used without the telescopic bracing means or the bracing means may be used without the chains, although it is preferred to use both in conjunction with each other to provide maximum rigidity.

The upper tie rod **30** of the support assembly **38** is connected to one end of a strap **78** having a turnbuckle or the like **80** for adjustment of its length. At the free end of the strap **78** is provided a laterally extending strap **82** having a buckle **84**. A strap handle **86** is connected to the lateral strap **82**. The straps **78** and **82** are used to enwrap the surf board **40** when it is inserted between the elbows **36** of the support assembly (as shown).

In practice, to secure the surf board **40** to the holding and conveying device **10**, the support assembly **38** is raised to the upright position, with the chains **62** in place, as shown in FIG. 1. The lower end of the surf board is then inserted between the elbows **36**, with its bottom resting on the brackets **42**. The strap **80**, adjusted to the required length, is then stretched along the board and the lateral strap **82** is secured around the upper portion of the board. This is the position illustrated in FIG. 1. The chains **62** are then disengaged from the eyelets **64** and wrapped around the lower board position and support assembly and secured in place, after which the support assembly is lowered to the desired position.

If it is desired to haul the unit over a hard surface such as a concrete or macadam road, the support assembly **38** is moved into the lower inclined position, such as shown in full line in FIG. 2. In this position, the rollers **52** are below the level of the skids **12** and, in conjunction with the rollers **18**, provide a roller support for the unit. It should here be noted that the central straight portion of the cam slots **56** is sufficiently long so that even when the support assembly **38** is moved to a lower angle than that shown in FIG. 2, the rollers **52** will still remain in their lowermost supporting positions. This permits persons of varying height to pull the device by means of the handle **86** while the rollers are in operative position.

The unit may also be mounted on an automobile or other vehicle. In such case, the support assembly **38** is preferably in the fully horizontal position so that the rollers **52** cannot scratch or mar the vehicle, and the skids are lashed or otherwise secured to the vehicle.

When on the beach, when the surf board is not being used, it can be stored by merely inserting it into the holding device **10** in the vertical position, as shown in FIG. 1. In this storage position it is not necessary to use the straps since adequate support is provided by the support assembly **38**.

If desired, although less preferable, fixed wheels or rollers can be substituted for the adjustable rollers **52**. In such case, a standard type adjustable brake would be used in conjunction with the fixed roller to keep it from rolling when such rolling is not desired.

Although the device has been described in conjunction with a surf board, and although it is peculiarly adapted for very effective handling and conveying of a surf board, it is to be understood that it may also be used to support and convey other types of articles as well.

Obviously, many modifications of the present invention are possible in the light of the above teachings. It is, therefore, to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

The invention claimed is:

1. A holding and conveying device comprising a base member, a brace assembly hingedly connected to said base member for pivotal movement from a substantially parallel position to a substantially perpendicular position relative to the plane of said base member, said brace assembly having a support means adjacent its hinged connection to engage one end of an elongated article, an edge-engaging means on said brace assembly for engaging the edges of said elongated article and preventing toppling of said article, said edge-engaging means being spaced from said support means longitudinally of said brace assembly and being constructed and arranged to permit slidable movement of said article toward and from said support means, a shaft means on said brace assembly, a roller means mounted on said shaft means, and said shaft means and roller means being movable with said brace assembly during the pivotal movement thereof to a position wherein said roller underlies said base member to serve as a roller support thereof when said brace assembly is in said substantially parallel position, and to a position wherein said roller means overlies said base member when said brace assembly moves toward said substantially perpendicular position.

2. The device of claim **1** wherein said brace assembly comprises a pair of spaced, parallel rods, each having a lateral lower portion pivotally connected to said base member and a lateral upper portion, each lateral upper portion having an elbow portion connecting it to a reversely extending free end, said elbow portions comprising said edge-engaging means.

3. The device of claim **2** wherein each parallel rod is provided with a hook means extending laterally therefrom and substantially perpendicular to the corresponding lateral lower portion, these hook means comprising said support means and also serving as stop means to limit pivotal movement of said support assembly, said hook means being arranged to abut said base member upon pivotal movement of said brace assembly to said substantially perpendicular position.

4. The device of claim **1** wherein a strap means is connected to said brace assembly, said strap means being constructed and arranged to releasably engage an article to be supported.

5. The device of claim **1** wherein said roller means comprises a pair of rollers mounted on said shaft means, each roller of the pair having a cam follower in operative connection therewith, a cam block for each cam follower on said base member, a cam slot in each cam block, each cam follower being slidable in a corresponding cam slot, said cam slots being so contoured that, when said brace assembly is pivotally moved, each follower will move its corresponding roller into a position relative to said base member which is predetermined by the contour of the cam slot.

6. The device of claim 1 wherein said brace assembly is provided with stop means to limit its pivotal movement beyond a predetermined position, and with retaining means to releasably maintain it in said predetermined position.

7. In combination, a holding and conveying device and a surf board, said holding and conveying device comprising a base member, a brace assembly hingedly connected to said base member for pivotal movement from a substantially parallel position to a substantially perpendicular position relative to the plane of said base member, said brace assembly having a support means adjacent its hinged connection to engage one end of an elongated article, an edge-engaging means on said brace assembly for engaging the edges of said elongated article and preventing toppling of said article, said edge-engaging means being spaced from said support means longitudinally of said brace assembly and being constructed and arranged to permit slidable movement of said article toward and from said support means, a shaft means on said brace assembly, a roller means mounted on said shaft means, and said shaft means and roller means being movable with said brace assembly during the pivotal

movement thereof to a position wherein said roller underlies said base member to serve as a roller support thereof when said brace assembly is in said substantially parallel position and to a position wherein said roller means overlies said base member when said brace assembly moves toward said substantially perpendicular position.

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