Feb. 21, 1967 R. J. SCHLECHT 3,305,045

BOAT LADDER

Filed Nov. 2, 1964

FIG. 2

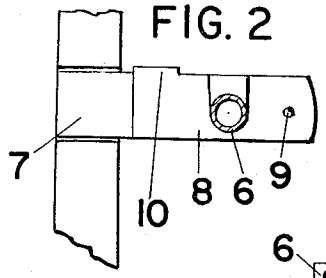


FIG. 1

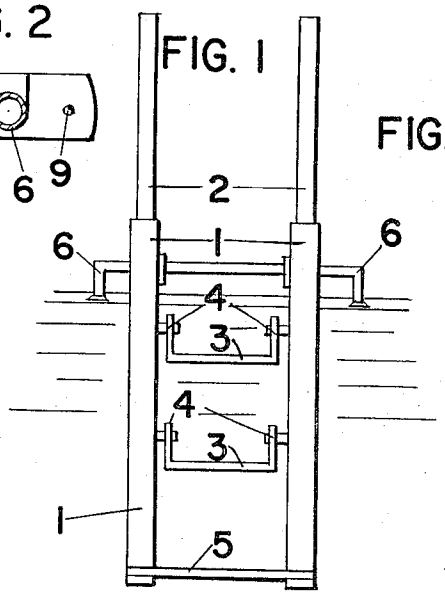


FIG. 3

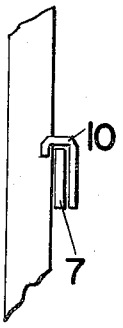


FIG. 4

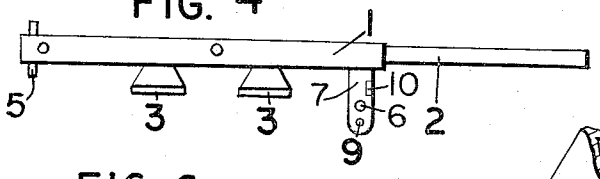


FIG. 6

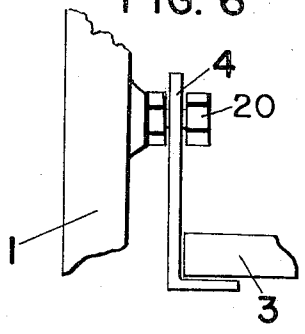
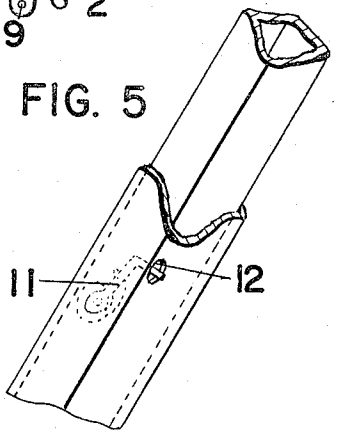


FIG. 5



INVENTOR.

BY

Dr. Raymond Joseph Schlecht

United States Patent Office 3,305,045
Patented Feb. 21, 1967

3,305,045

BOAT LADDER

Raymond Joseph Schlecht, 6329 E. Tecumseh, Tulsa, Okla. 74115

Filed Nov. 2, 1964, Ser. No. 408,126
3 Claims. (Cl. 182—97)

This invention is an improvement in a boat ladder, more particularly, a ladder easily carried in and attachable to small boats as generally used in water skiing, swimming and skin diving.

It is the object of the invention to aid a person in the water to board the boat in a safe manner, minimizing the danger of tipping the boat, and also lessening the chances of injury to the swimmer as he attempts to board.

A further object of the invention is to provide a telescoping arrangement of the handles of the ladder to allow more leverage to be applied, lessening the effort needed by the boat's attendant to aid the swimmer in boarding, and also reducing the length when the ladder is not in use, making it more easily carried or stored.

A still further object of the invention is to provide a snaplocking device to easily and securely attach and lock the ladder to the boat yet permit pivoting about a given axis.

Yet a still further object of the invention is to provide safe, self-leveling steps, regardless of the angle of the ladder, enabling the swimmer to easily climb the ladder into the boat.

A still further object of the invention is to provide a strong, rigid ladder structure. Since the ladder will be nearly vertical when the swimmer first mounts the bottom step, this rigidity is increased by fastening the bottom step solidly to each upright, and not in a self-leveling manner as are the other steps.

Referring to the drawings:

In FIGURE 1 is a view of the ladder including upright **1**, attached to the pivot bar **6**, on a boat, with the telescoping handles **2**, in an extended position. **3** is a view of the self-leveling steps, arranged on pivotal hangers **4**. The numeral **5** represents rigidly mounted bottom step.

FIG. 2 is a view of a section of the ladder upright, showing the pivot arm **7**, and locking arrangement **8**, being secured by pin **9**, allowing a hinge-type locking arrangement.

FIG. 3 is an end view of the pivot arm **7**, bent-over end of the locking device **10**.

FIG. 4 is a view of the ladder as it has been pivoted to a horizontal position, **2** is the handle in an extended position, **7** is the pivot arm with locking device **8**. **3** is the self-leveling steps and **5** is the rigid bottom step.

FIG. 5 is a close view of the telescoping handles with the spring loaded locking pin **11**, in positioning hole **12**, which holds the handles in either the extended or shortened position until released. The locking pin, as shown here, is an L-shaped member which is pivotal about an eyelet shaft attached to the interior of the telescoping handle **2**. The pivotal motion is normally outward through an opening, not shown, in the telescoping handle **2** and, because of the spring tending to normally bias the locking pin **11** outwardly, the pin will snap outwardly when aligned with positioning hole **12** of the ladder sides or rails.

FIG. 6 is a detailed drawing showing the method of construction to allow the step **3** to be self-leveling. This is accomplished by reason of the fact that step hanger **4** is rotatably supported about the shaft of bolt or pin **20** and hence will rotate to the various relative positions such as shown in FIGURES 1 and 4.

The ladder is first attached by pivot arm **7** to a suitable

fulcrum means or pivot bar **6** on the boat, and locked in place by the snap-locking device **8**. This is accomplished by virtue of a U-shaped opening in pivot arm **7** to accommodate pivot bar **6** which is rigidly attached to the boat. Thereafter, snap locking device **8** is rotated about pin **9**. A U-shaped opening in device **8** supports pivot bar **6** along the lower half thereof. Further rotative movement of the snap locking device in a clockwise direction (when viewing FIGURE 2) is caused until the bent-over end of locking device **10** is snapped and retained over the pivot arm **7**, the end view of which is shown in FIGURE 3. The ladder hangs in a near vertical position where it can be easily reached by the swimmer, and where the extended handles **2** are in such a position to allow them to be pivoted about the bar **6** by the boat attendant as he applies leverage to aid the boarding person. After the swimmer has grasped the sides of the ladder in a conventional manner, and is standing on the rigid bottom step **5** the boat attendant pulls the extended handles **2** down and into the boat, pivoting the ladder about the mounting bar **6**, and lifting the swimmer upwards. While the attendant holds the ladder at a convenient angle, the person boarding can walk up the remaining self-leveling steps **3**, and into the boat.

Normally, a person attempting to board a boat will cause it to tilt, and anyone attempting to help him adds to the unbalance and the danger of overturning. The use of this ladder allows the boat attendant to help the swimmer aboard and yet stay well back from the swimmer's side of the boat. This helps maintain an even keel, and reduces the danger of overturning.

As many changes could be made in carrying out the above construction without departing from the scope of the invention, it is intended that all matter contained in the above description, or shown in the accompanying drawing shall be interpreted as illustrated, and not in a limiting sense.

Therefore, I claim:

1. A boat ladder comprising:
- a pair of parallel spaced ladder rails;
- at least one self-leveling swing type step rotatably supported between said rails;
- a pivot arm attached to said rails and extending substantially perpendicular therefrom;
- fulcrum means to pivotally support said pivot arm to a boat whereby said ladder is pivotal from a substantially vertical position to a substantially horizontal position;
- an extension handle telescopically extendable from said ladder rails to increase the leverage arm from said fulcrum; and
- releasable latch means to lock each of said handles with respect to its rail at a desired position.

2. A boat ladder according to claim **1** wherein said ladder rails include at least one rigidly mounted bottom step.

3. A boat ladder according to claim **1** including rotatable clamp means to pivotally retain said pivot arm to said fulcrum means.

References Cited by the Examiner

UNITED STATES PATENTS

1,419,834	6/1922	Fellows	182—1
2,187,633	1/1940	Smith	182—106 X
3,136,384	6/1964	Sweeney	182—106

FOREIGN PATENTS

620,310	3/1949	Great Britain.

REINALDO P. MACHADO, *Primary Examiner.*