United States Patent [19]

Rachocki

[11] 3,858,683

[45] Jan. 7, 1975

[54] **BOARDING LADDER**

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[73] Assignee: **Zurn Industries, Inc.**, Erie, Pa.

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[52] **U.S. Cl.** **182/156**, 182/46, 182/206

[51] **Int. Cl.** **E06c 1/36**

[58] **Field of Search** 182/206, 46, 156

[56] **References Cited**

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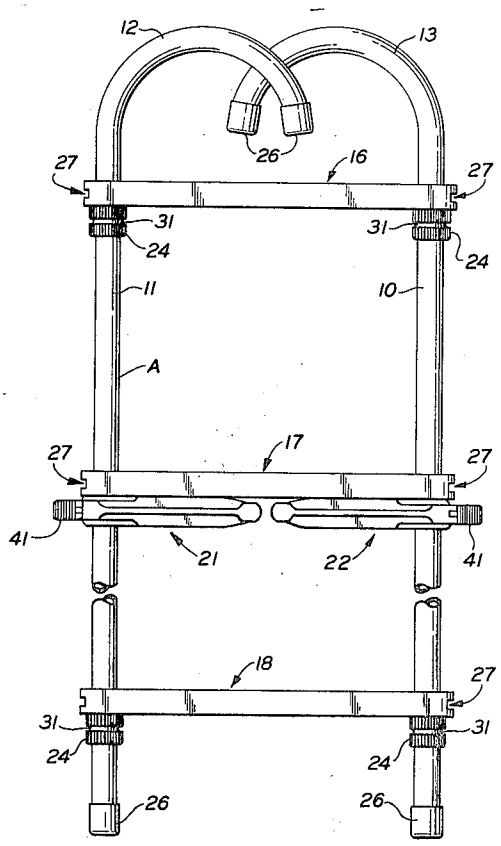
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Primary Examiner—Reinaldo P. Machado

[57] **ABSTRACT**

A boarding ladder for a boat. The boarding ladder has side members that terminate at the top ends in hooks for extending over the top edge of the side of a boat. The side members extend through holes in the steps of the ladder and are supported on the side members so that the side members may be rotated to bring the hooks into alignment with each other to fold the ladder. Two standoffs are provided. The standoffs are each clamped to a boss on one of the steps. The standoffs extend perpendicular to one side of the ladder when the ladder is unfolded. The standoffs will engage the side of the boat and hold the ladder vertical when someone is boarding the boat.

10 Claims, 8 Drawing Figures



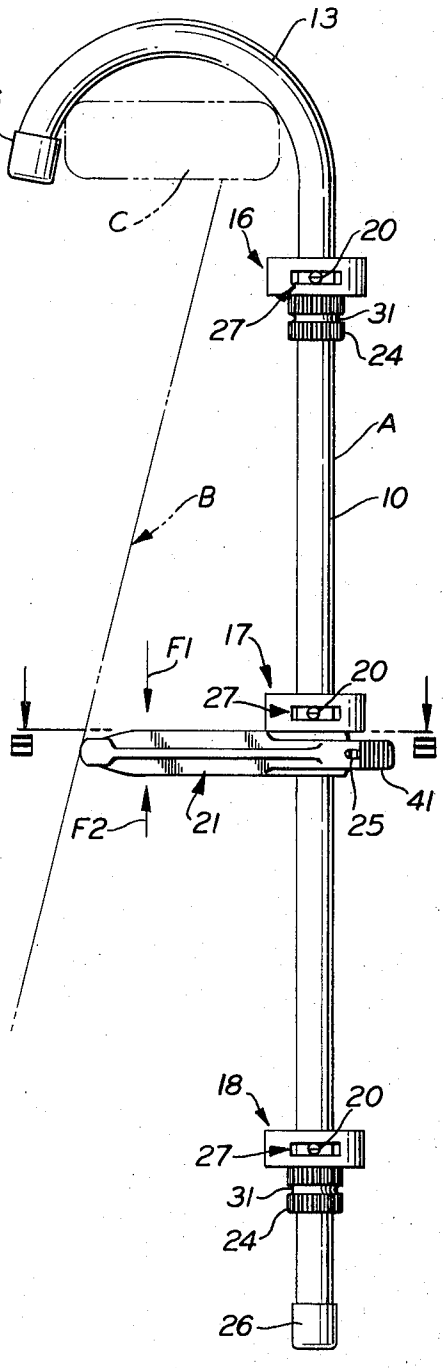

13
26
C
16
20
27
31
24
A
B
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F1
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F2
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25
41
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Fig 2

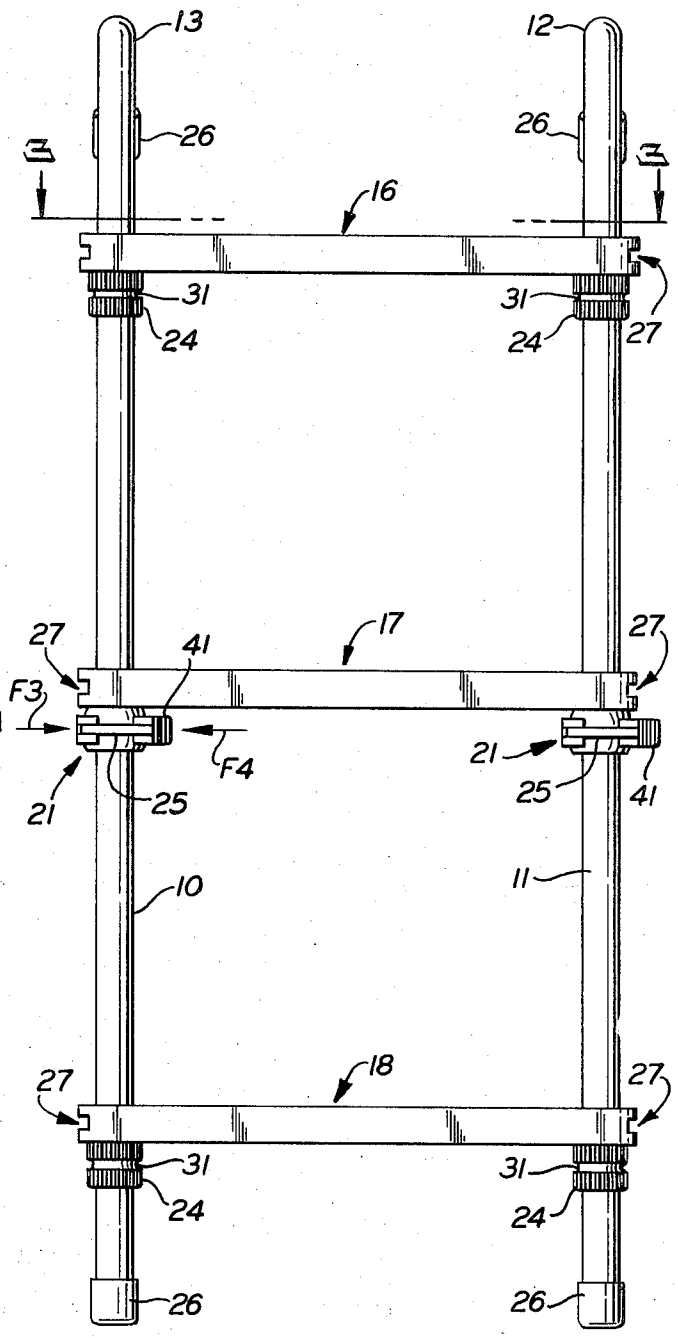

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F3
F4
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Fig 1

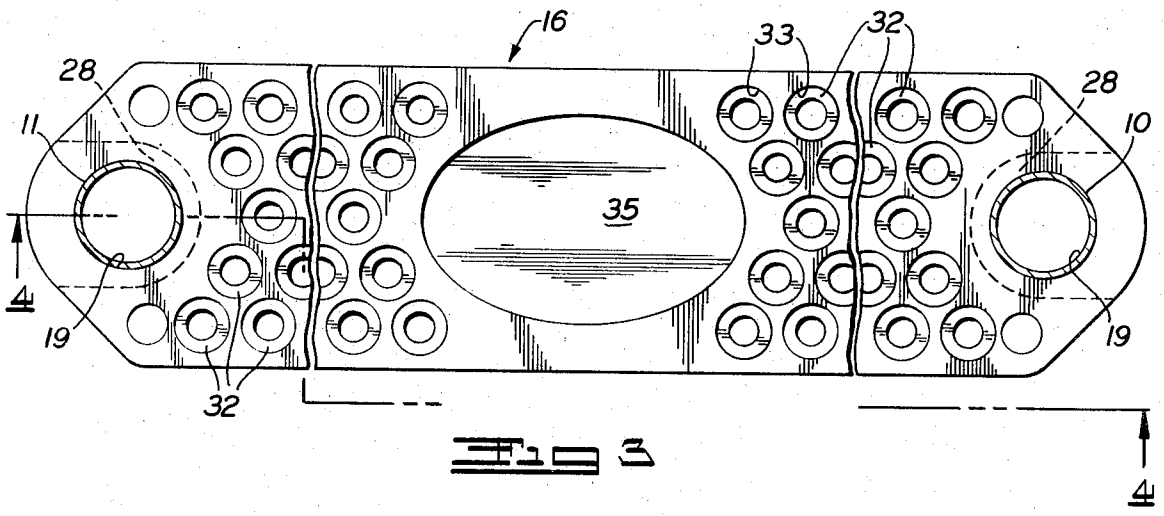


Fig 3

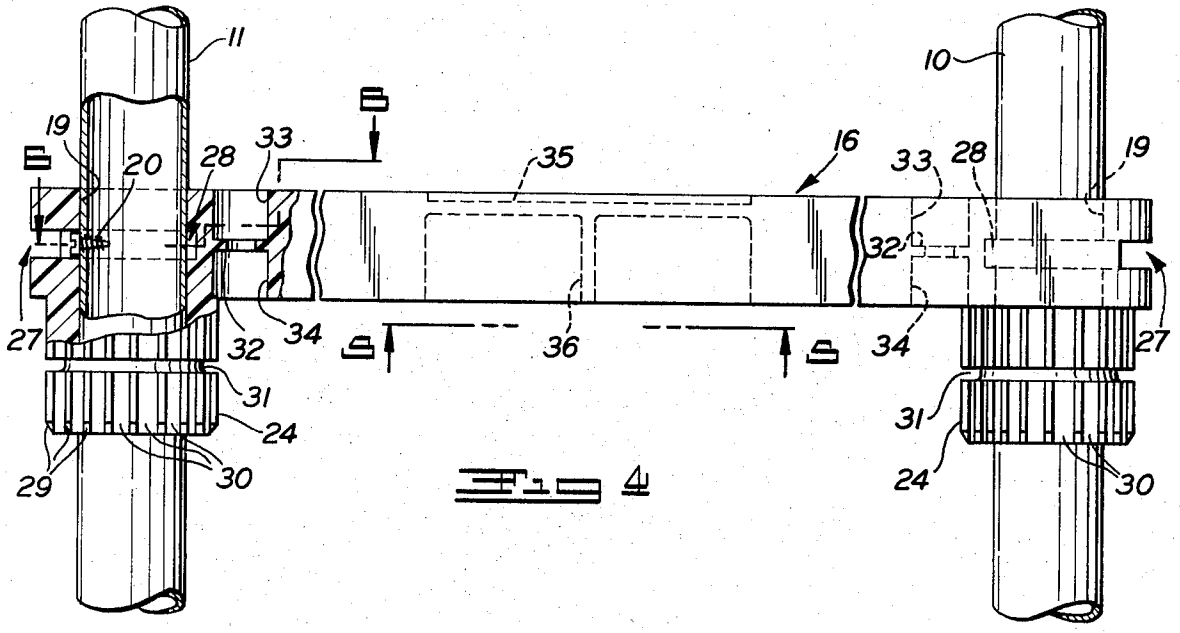


Fig 4

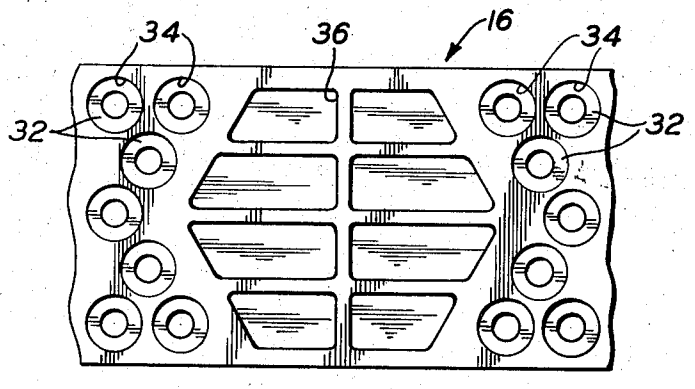


Fig 5

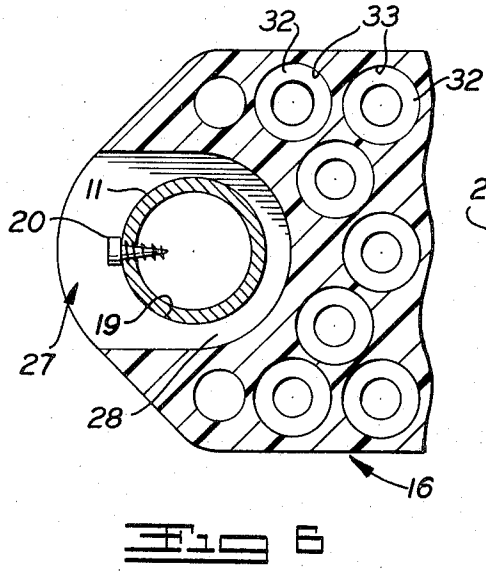


Fig 6

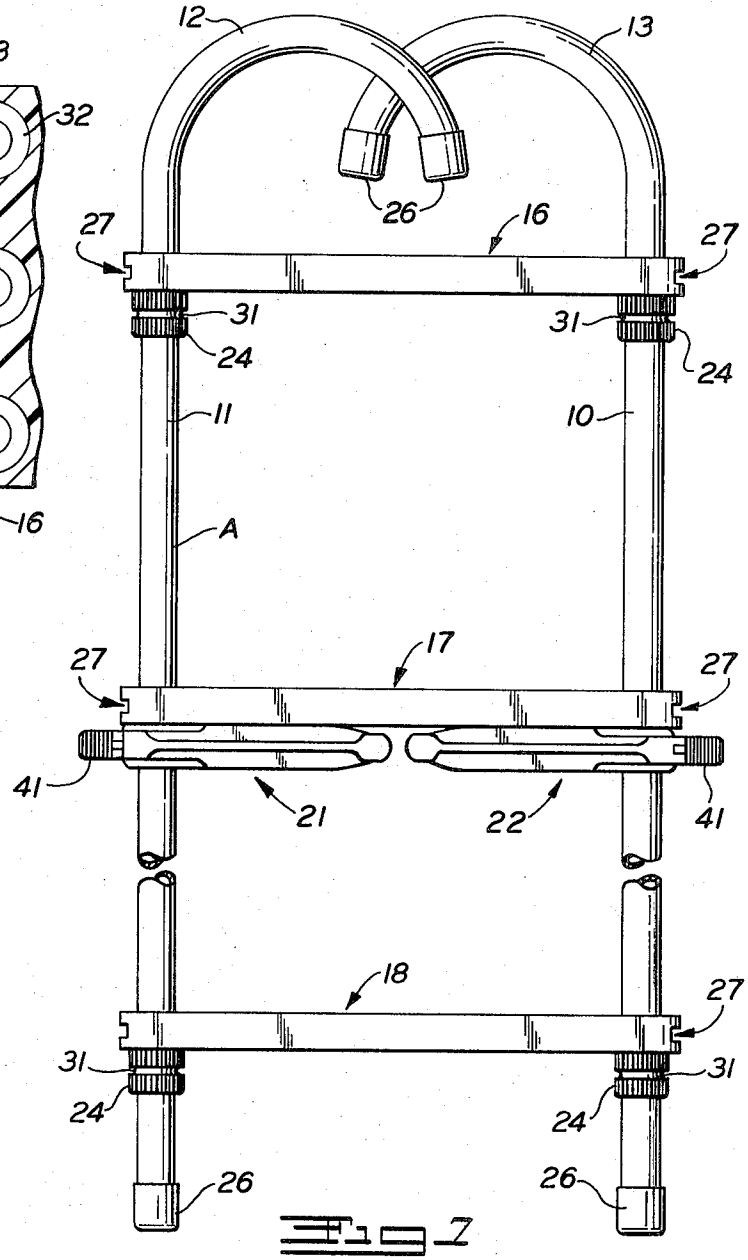


Fig 7

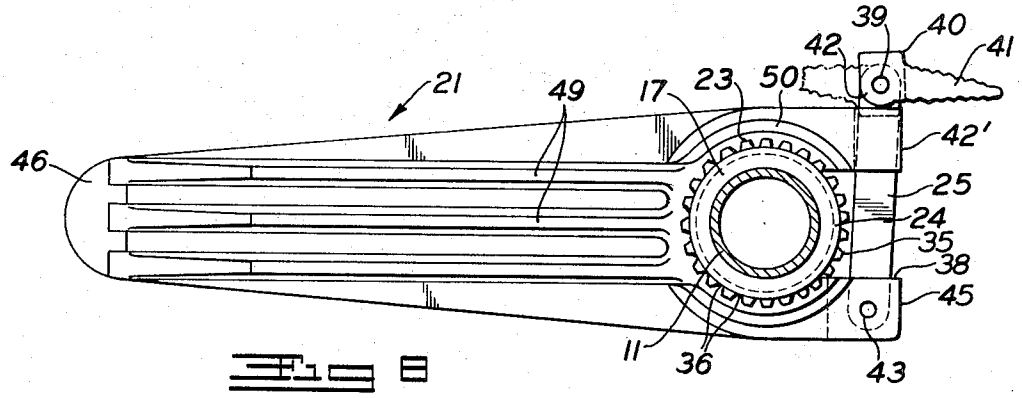


Fig 8

BOARDING LADDER

OBJECTS OF THE INVENTION

It is an object of the invention to provide an improved boarding ladder for boats.

It is another object of the invention to provide a boat boarding ladder in combination with a standoff.

Another object of the invention is to provide a boat boarding ladder that is simple in construction, economical to manufacture, and simple and efficient to use.

With the above and other objects in view, the present invention consists of the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportions, and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

GENERAL DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front view of the ladder according to the invention, showing the standoff member in position for use.

FIG. 2 is a side view of the ladder shown in FIG. 1, showing the ladder supported on a boat shown in phantom.

FIG. 3 is a cross sectional view taken on line 3—3 of FIG. 1.

FIG. 4 is a view partly in cross section showing an enlarged view of a step taken on line 4—4 of FIG. 3.

FIG. 5 is an enlarged view taken at line 5—5 of FIG. 4.

FIG. 6 is a longitudinal cross sectional view taken on line 6—6 of FIG. 4.

FIG. 7 is a view of the ladder showing both the side members and standoff folded.

FIG. 8 is an enlarged top view of one of the standoffs.

DETAILED DESCRIPTION OF THE DRAWINGS

Now with more particular reference to the drawings, the ladder shown generally at A is shown supported by a boat B shown in phantom. The ladder has two spaced side members **10** and **11** terminating at their upper ends in hooks **12** and **13** that are intended to extend over the gunwhale C of the boat. The side members **10** and **11** may be made of aluminum tubing, for example, and may have rubber cuplike tips **26** on the extreme ends of the hooks and at the lower ends of the side members to prevent damage to the boat.

The ladder is provided with vertically spaced steps **16, 17** and **18,** each having a hole **19** at each end. The ladder could have **2, 3, 4** or **5** steps. The holes **19** slidably receive the side members **10** and **11.** A slot **27** is formed at each end of each step. Each slot **27** receives the head of a sheetmetal type screw **20.** The head of screw **20** is received in the internal circumferential groove **28** so that the side members **10** and **11** can be rotated from folded position to unfolded position.

Each step **16, 17** and **18** has a downwardly extending boss **24** on it. The bosses **24** are integrally molded with steps **16, 17** and **18** and have a central hole which is a continuation of holes **19** in the steps. The outer periphery of the bosses **24** have axially extending circumferentially spaced grooves **29** that extend from the lower edge of the steps **16, 17** or **18** to the lower end of the boss and define ribs **30** between the grooves. An outer

circumferential slot **31** is formed in each of the bosses **24.** The steps may be made of molded plastic material, such as vinyl polyethylene or the like, depending on the designer's taste. The steps have the holes **32** molded in them and these holes are counterbored at **33** from the top and at **34** from the bottom, which allows water to drain down through the holes and provides a roughened top surface on the steps to prevent slipping of wet feet on the upper surface. The indented upper central part **35** is provided as an area for a trademark and the webs **36** are formed across the recess under the portion **35,** thus reinforcing the central part of the step.

The standoffs **21** and **22** each have a hole **23** that is defined by the axially extending slot **38.** These slots **38** define webs **36** that interfit in the grooves **29** in the bosses **24.** Link **25** is pinned at **43** to the end **42'** of the standoff at **37.** The second end of the link **25** is pinned at **39** to the end **40** of the link **25** and to a handle **41** which is integrally attached to the cam **42.** Thus when the handle **41** is rotated, the cam surface of cam **42** engages the outside surface of the end **42'** thereby compressing the two ends **42'** and **45** toward each other clamping the standoff to the boss. When it is desired to rotate the standoff **21** to folded position, the handles **41** may be rotated to unclamp the standoffs from bosses so that the standoffs can be swung from the position shown in FIGS. **1** and **2** to the folded position shown in FIG. **7.** The standoffs **21** and **22** are elongated and taper outwardly to the distal end **46.** The standoffs each have longitudinally extending webs **49** separated by spaced grooves which join boss **50,** through which hole **19** extends. The standoff disclosed herein has the outstanding feature that it will withstand thrust loads encountered in the use of the boarding ladder in all directions, as indicated by the arrows **F1, F2, F3,** and **F4** in FIGS. **1** and **2,** without collapsing, thus being an extremely safe boarding ladder.

The foregoing specification sets forth the invention in its preferred practical forms but the structure shown is capable of modification within a range of equivalents without departing from the invention which is to be understood is broadly novel as is commensurate with the appended claims.

What is claimed is:

1. A ladder for boarding a boat comprising spaced longitudinally extending side members, longitudinally spaced laterally extending steps rotatably supported on said side members,

a standoff,

means for supporting said standoff on one said step selectively in parallel position and in perpendicular position thereto,

said means supporting said step comprising a downwardly extending boss on said step,

a bore in said standoff receiving said boss,

and means for clamping said step in position on said boss.

2. The ladder recited in claim **1** wherein two said standoffs are provided, one on each side of said step.

3. The ladder recited in claim **2** wherein said steps and said standoffs are made of molded plastic material.

4. The ladder recited in claim **3** wherein said side members are rotatably received in bores in said steps.

5. In combination, a ladder and a standoff for boarding a boat comprising

two laterally spaced side members terminating at their upper ends in hooks for hooking over the side of a boat,

vertically spaced steps,

each said step having a hole in each end thereof,

each of said side members extending through a said hole in each of said steps,

means on said side members for holding said steps in position on said side members against sliding movement thereon,

a standoff,

said standoff having a hole extending through one end thereof,

a boss integrally attached to one said step and extending downwardly therefrom,

one said boss extending through said hole in said standoff,

and clamping means for clamping said standoff to said boss whereby said standoff extends generally perpendicular to said side members and perpendicular to said steps,

said clamping means being releasable whereby said standoff may be swung to a position parallel to said steps and perpendicular to said side members.

6. The combination recited in claim **5** wherein said bosses extend downwardly from said steps and have a bore in the center thereof aligned with a bore in said steps,

the outer periphery of said boss having axially extending circumferentially spaced grooves therein,

and said bore in said standoff having axially spaced longitudinally extending grooves therein defining ribs therebetween whereby said standoff may be restrained against swinging relative to said step.

7. The combination recited in claim **6** wherein said bosses have spaced axially extending grooves receiving said ribs on said standoff.

8. The combination recited in claim **7** wherein said side members terminate at the upper end in hooks for supporting said ladder on a side of a boat.

9. The combination recited in claim **7** wherein two said standoffs are provided.

10. In combination, a boat with a ladder and a standoff as recited in claim **5**,

said side members having means supporting said ladder on the side of said boat.

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