Nov. 8, 1966 B. L. GODBERSEN 3,284,052

BOAT LIFT APPARATUS

Filed July 15, 1964 2 Sheets-Sheet 1

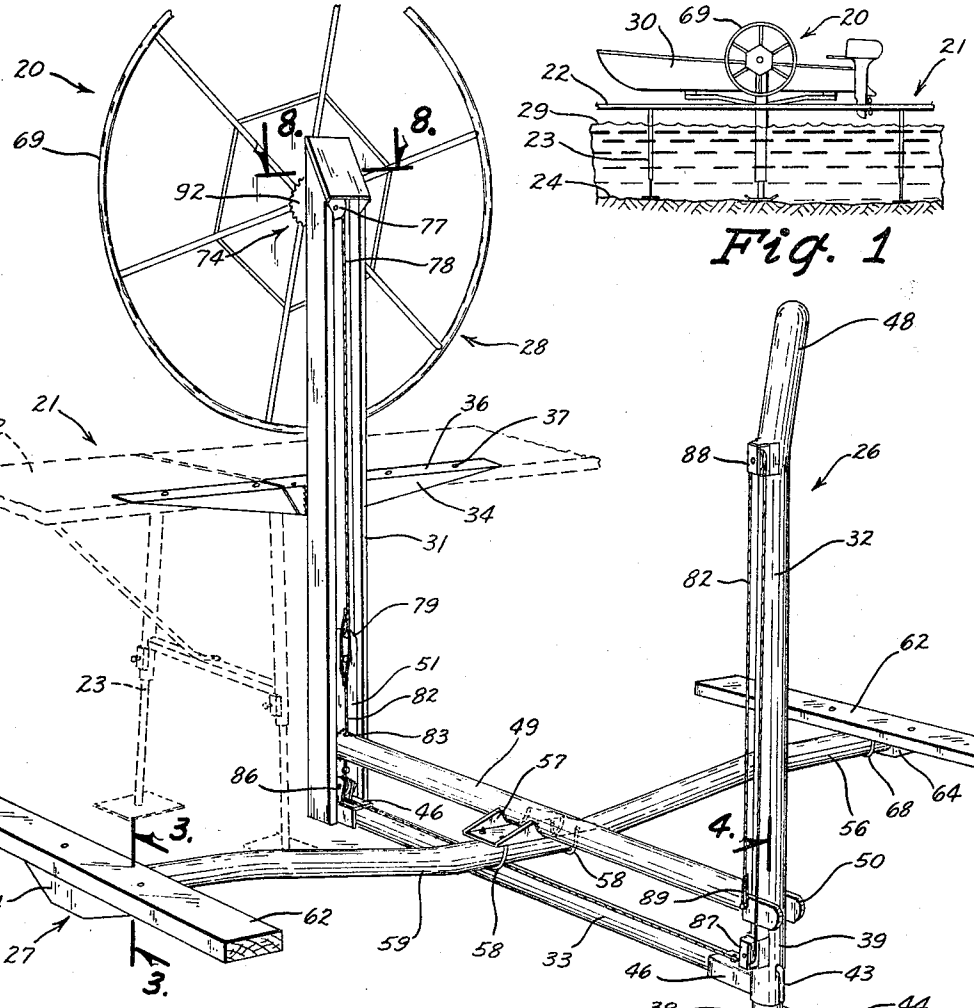



Fig. 2

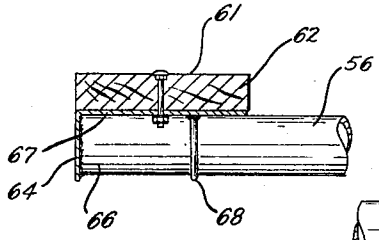



Fig. 3

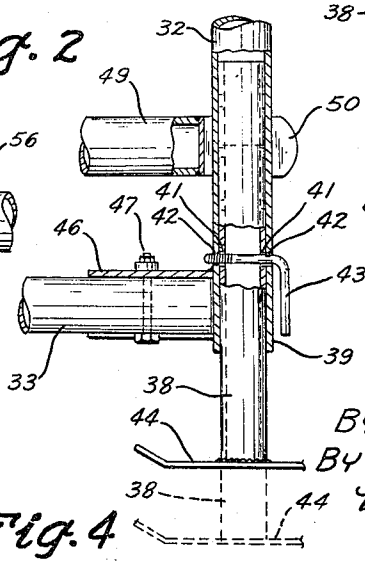



Fig. 4

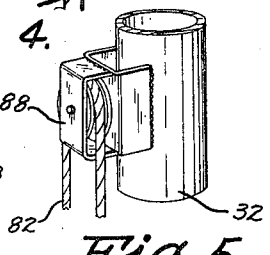



Fig. 5




Fig. 1

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BOAT LIFT APPARATUS

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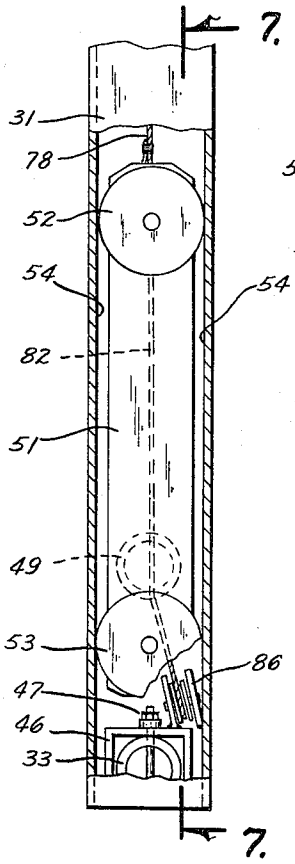



Fig. 6

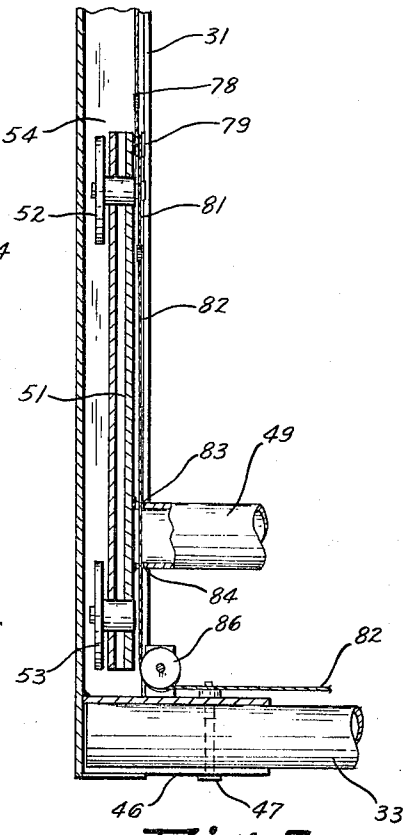



Fig. 7

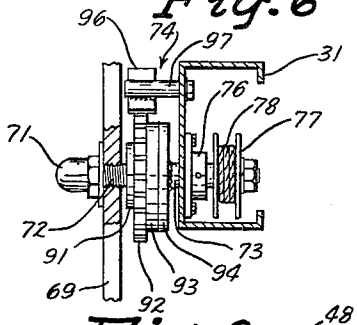



Fig. 8

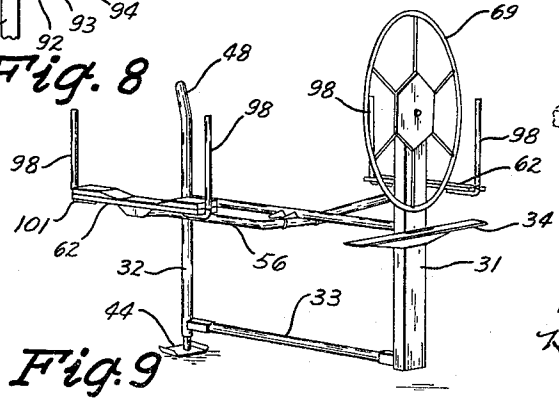



Fig. 9

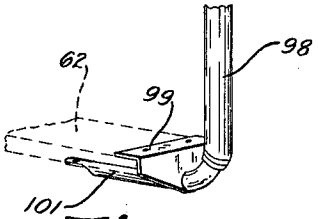



Fig. 10

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3,284,052

# BOAT LIFT APPARATUS

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2 Claims. (Cl. 254—148)

This invention relates generally to boat hoists, and in particularly to an apparatus of an extremely simple and uncomplicated structure for lifting and lowering a boat.

It is an object of this invention to provide an improved boat lift apparatus.

It is another object of this invention to provide an improvide boat lift apparatus having only two points of support.

It is still another object of this invention to provide a boat lift apparatus comprised of a pair of posts one of which is adapted to engage a portion of a boat dock, and the other adapted to engage the underwater surface of the ground.

Yet another object of this invention is to provide a boat lift apparatus including a pair of right angular disposed members one of which engages and cradles the underside of a boat, and the other of which is vertically movable to raise and lower the first member.

Another object of this invention is to provide a simple, but rugged and effective boat lift apparatus capable of attaining all the above mentioned objectives, and which is readily and easily fastened at one side to a boat dock for support thereby.

These objects and other features and advantages of this invention will become readily apparent upon reference to the following description when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a reduced pictorial view of the boat lift apparatus of this invention in use;

FIG. 2 is a perspective view of a preferred embodiment of the boat lift apparatus of this invention, a portion of a boat dock shown in phantom;

FIG. 3 is an enlarged, fragmentary sectional view taken along the line 3—3 in FIG. 2;

FIG. 4 is an enlarged sectional view taken along the line 4—4 in FIG. 2, and showing alternate positions of a leg and pad by dotted lines;

FIG. 5 is an enlarged detail view of a structure in FIG. 2;

FIG. 6 is an enlarged, elevational view of a side post and hoist unit portion of that boat lift apparatus;

FIG. 7 is a sectional view taken along the line 7—7 in FIG. 6;

FIG. 8 is an enlarged sectional view taken along the line 8—8 in FIG. 2;

FIG. 9 is a reduced fragmentary view of the boat lift of this invention, and showing guide posts useable therewith; and

FIG. 10 is an enlarged perspective view of a detail of a guide post of FIG. 9.

Referring now to the drawings, a preferred embodiment of the boat lift apparatus of this invention is indicated generally at **20** in FIGS. 1 and 2, and is shown in assembled relation to a boat dock indicated generally at **21**. The dock **21** is comprised basically of a platform **22** usually made up of a plurality of planks, and supported by a leg structure **23** resting on the bottom **24** of a lake or the like.

The boat lift apparatus **20** is comprised generally of a frame unit, a lift unit movably mounted on the frame unit, and a hoist unit, all indicated generally at **26**, **27** and **28**, respectively (FIG. 2). The hoist unit **28** is mounted on the frame unit **26** and operatively connected to the lift unit **27** for raising and lowering the lift unit **27**. As illustrated in FIG. 1, the lift unit **27** can be



raised above the surface **29** of the water for holding a small craft **30** out of the water.

The frame unit **26** (FIG. 2) includes an elongated, upstanding, channel-shaped post **31**, an upstanding tubular post **32**, and a transversely extended spacer bar **33** interconnected between the bases of the posts **31** and **32**. Intermediate the length of the post **31**, an elongated, right angular support bracket **34** is secured as by welding thereto, and has an upper horizontally disposed flange **36** adapted to be secured to the upper surface of the dock platform **22** by bolts **37**.

For adjusting the effective length of the post **32**, a leg extension **38** (FIGS. 2 and 4) is provided which is telescopically inserted into the lower tubular end **39** of the post **32**. Tranversely aligned vertically spaced pairs of apertures **41** (FIG. 4) are formed in the leg extension **38**, each pair of which are alignable with a pair of transversely aligned openings **42** (FIG. 4) formed in the leg end **39**. An L-shaped locking bolt **43** has an externally threaded end threadably insertable through an internally threaded aperture **41** aligned with an internally threaded opening **42**. A foot plate **44** is welded to the base of each extension **38**. Thus, irrespective of the engagement position of the post **31** with the dock **21**, the opposite post **32** can be adjusted as to length to engage the lake bottom **24**.

At the bottom of each post is a U-shaped receptacle **46** (FIG. 4) for receiving an end of the spacer bar **33**. A cap screw **47** is insertable through aligned openings (not shown) formed in the receptacle **46** and the spacer bar end. Referring to FIG. 2, it will be noted that the upper end **48** of the post **32** is bent outwardly to provide for the sloped sides of the boat **30**.

The lift unit **27** (FIG. 2) includes an elongated tubular cross bar **49** at one end of which is formed a yoke **50** and at the other end of which is formed a vertically disposed, shallow U-shaped plate **51** (FIGS. 2, 6 and 7). A pair of wheels **52** and **53** are rotatably mounted at the upper and lower ends of the plate **51**. As best illustrated in FIG. 6, the peripheral edges of the wheels **52** and **53** engage opposite inner wall surfaces **54** of the channel post **31**, whereby the plate **51** is guided in vertical movement, and is maintained in a vertical axis against wobbling movement therefrom by the engagement with the post **31**.

Disposed at right angles to the cross bar **49**, and adapted to engage the underside of the boat **30** is an elongated cradle bar **56** (FIG. 2). A cradle bracket **57** support the center of the cross bar **49**, and supports in turn the cradle bar **56** therebeneath by means of a pair of U-bolts **58**. The intermediate portion **59** of the cradle bar **56** is depressed slightly to provide for the upper surfaces **61** (FIG. 3) of a pair of redwood planks **62** being level with the upper surface **63** (FIGS. 4 and 7), of the cross bar **49**.

Each plank **62** (FIGS. 2 and 3) is bolted to an L-shaped end bracket the end **64** of which depends over an end **66** of the cradle bar **56**, and the top **67** of which extends over the end **66**. The brackets are in turn secured to the cradle bar ends **66** each by a U-bolt **68** (FIG. 3).

The hoist unit **28** includes a large hand wheel **69** (FIGS. 2 and 8) threadably mounted by an exposed nut **71** on the threaded end **72** of a shaft **73**.

The shaft **73** extends through a clutch device **74** (FIG. 8) and a bearing **76**, the latter secured within the upper end of the channel post **31**, for engagement with a first pulley unit **77**. This unit (FIG. 2) is rotatably mounted at the upper end of the post **31** and has one end of a cable **78** secured thereto. The cable depends to an engagement with a projection **79** (FIG. 7) secured to the upper end of the plate **51**.

Also secured to the projection **79** is one end **81** of a second cable **82** which is extended through vertically aligned apertures **83** and **84** (FIG. 7) formed in the cross bar **49** and trained about and beneath a second pulley unit **86** mounted in an offset manner to the top of an adjacent receptacle **46**. The cable **82** extends transversely above the spacer bar **33** and is trained beneath and about a third pulley unit **87** secured at the bottom end of the tubular post **32**. The cable **82** extends upwardly as best illustrated in FIG. 2 and is trained over a fourth pulley unit **88** (FIGS. 2 and 5) secured to the upper end of the post **32**. The free end **89** of the cable **82** is secured to the yoke **50** at the outer end of the cross bar **49**.

It may readily be appreciated that upon rotation of the first pulley unit **77** to reel in the first cable **78**, the attachment of that cable to the plate **51** and the attachment of the second cable **82** to the yoke **50** by the means of the pulley units provides for an even and equal upward pull on the cross bar **49** at each end thereof.

The clutch device **74** (FIG. 8) includes a washer **91**, a serrated wheel **92** secured to a laterally movable clutch disc **93**, and another disc **94** secured to the shaft **73**. Rotation of the wheel **69** in one direction threads it against the washer **91** and results in rotation of the shaft **73** by the frictionally engaged rotation of the clutch discs **93** and **94**. The serrated wheel **92** rotates against a pawl **96** (FIG. 8) secured to a latch bar **97** mounted on the post **31**. This prevents a release of the shaft **73** and locks it in place as reversed rotation of the serrated wheel **92** is prevented.

A reverse rotation of the hand wheel **69** effects a release of the clutch discs whereby the disc **94** and shaft **73** can rotate in an opposite direction to play out the cables **78** and **82**, permitting thereby a lowering of the lift frame **27**.

Referring to FIGS. 9 and 10, a plurality of upright boat guide posts **98** are secured each to an end of the planks **62**. At the base of each post **98**, a right angle flange **99** is secured to an arm **101**, with the flange **99** secured to the top side of the plank, and the arm **101** secured to the underside of the plank **62**.

Although a preferred embodiment of the invention has been disclosed herein, it is to be remembered that various modifications and alterations can be made thereto without departing from the true spirit and scope of the invention as defined in the appended claims.

I claim:

**1.** A boat lift apparatus comprising in combination:

frame means including a pair of interconnected, transversely spaced, upright posts, one of said posts engageable with a ground surface, said frame means including a flange member secured to the other post and extended laterally therefrom, said flange adapted for engagement to the platform of a conventional boat dock;

lift means including a longitudinally extended bar, a pair of transversely extended support means secured at opposite ends of said bar, and a cross bar secured to said longitudinal bar, the cross bar having opposite ends guidably engaged with said posts; and

hoist means for raising and lowering said lift means, said hoist means including a clutch unit mounted on one post, a first pulley unit also mounted on said one post and operable by said clutch unit, a cable one end of which is connected to said first pulley unit, a second pulley unit mounted at the lower end of said one post, a third pulley unit mounted at the lower end of said other post, and a fourth pulley unit mounted at the upper end of said other post, said cable threaded beneath said second and third pulley units and over said fourth pulley unit, said cable secured to said lift means.

**2.** A boat lift apparatus comprising in combination:

frame means including a pair of interconnected, transversely spaced, upright posts, one of said posts engageable with a ground surface, said frame means including a flange member secured to the other post and extended laterally therefrom, said flange adapted for engagement to the platform of a conventional boat dock, one of said posts having a channel shape;

lift means engageable with the underside of a boat and including a cross bar one end of which is guidably engaged with the post opposite said channel post, said lift means including further a plate having a pair of aligned, spaced wheels mounted thereon, said plate mounted within said channel post with the wheels engaging opposite interior surfaces thereof; and

hoist means for raising and lowering said lift means, said hoist means including a clutch unit mounted on one post, a first pulley unit also mounted on said one post and operable by said clutch unit, a cable one end of which is connected to said first pulley unit, a second pulley unit mounted at the lower end of said one post, a third pulley unit mounted at the lower end of said other post, and a fourth pulley unit mounted at the upper end of said other post, said cable threaded beneath said second and third pulley units and over said fourth pulley unit, said cable secured to said lift means.


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