May 13, 1958 G. C. BAXTER 2,834,312

PUMPING APPARATUS FOR BOATS

Filed Sept. 25, 1953 3 Sheets-Sheet 1

Fig. 1

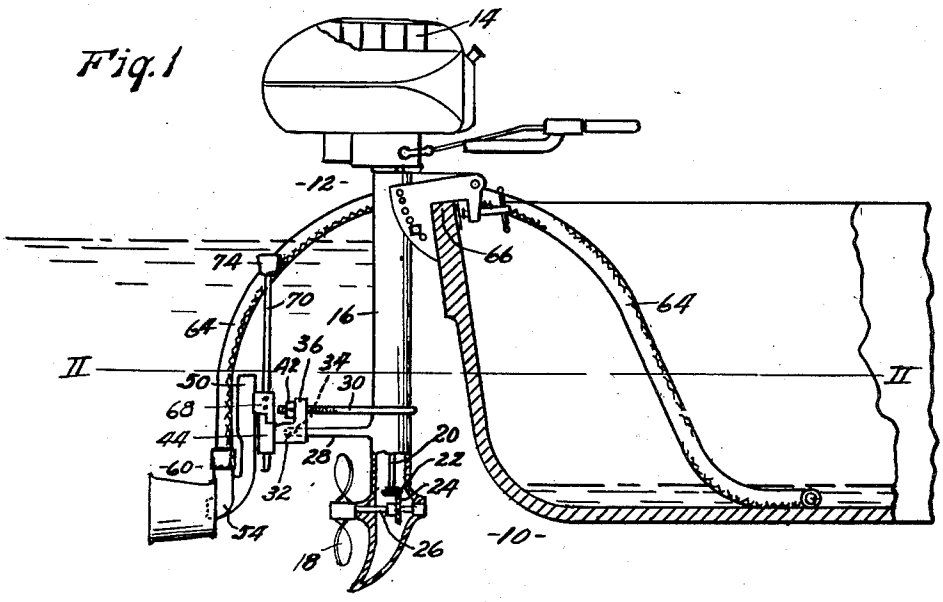
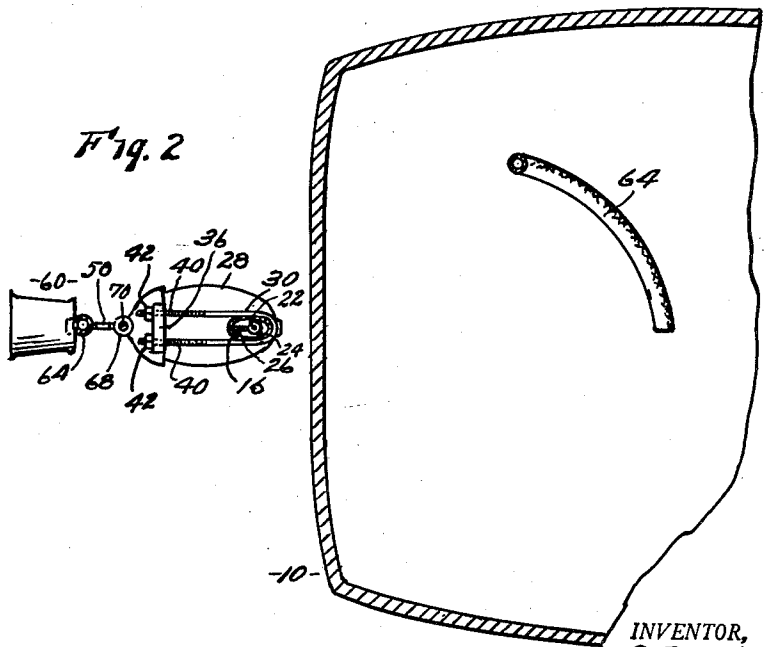


Fig. 2



INVENTOR,
George C. Baxter.
BY
Hamilton & Hamilton,
Attorneys.

May 13, 1958 G. C. BAXTER 2,834,312

PUMPING APPARATUS FOR BOATS

Filed Sept. 25, 1953 3 Sheets-Sheet 2

Fig. 3

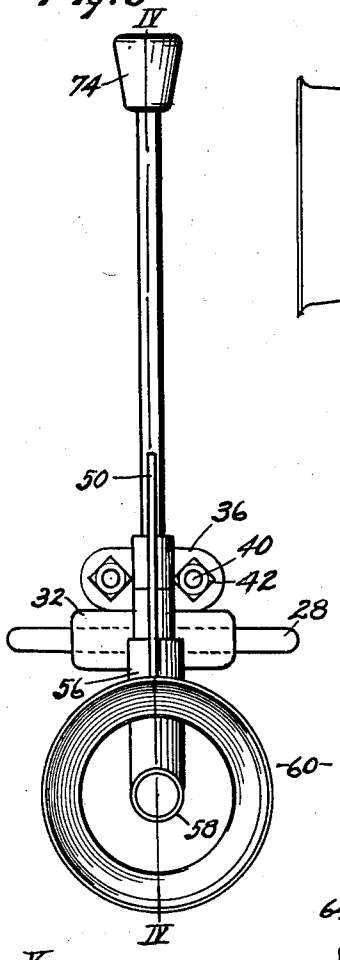


Fig. 5

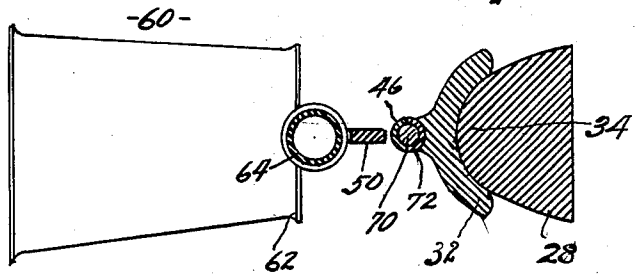


Fig. 4

INVENTOR,
George C. Baxter.
BY
Hamilton & Hamilton,
Attorneys.

May 13, 1958 G. C. BAXTER 2,834,312

PUMPING APPARATUS FOR BOATS

Filed Sept. 25, 1953 3 Sheets-Sheet 3

Fig. 6

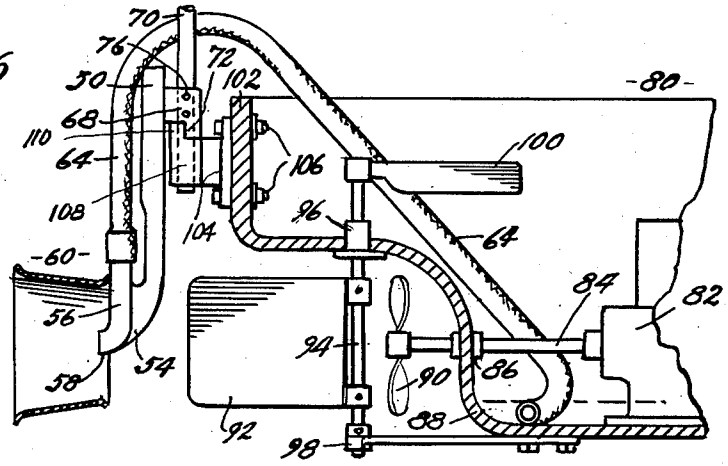
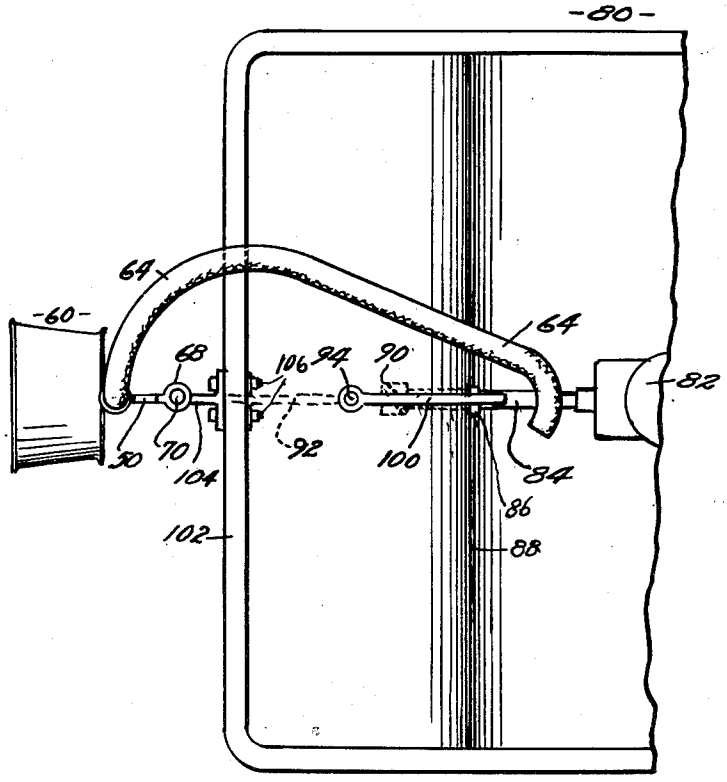


Fig. 7



INVENTOR,
George C. Baxter.
BY
Hamilton & Hamilton,
Attorneys.

United States Patent Office 2,834,312 Patented May 13, 1958

2,834,312

PUMPING APPARATUS FOR BOATS

George C. Baxter, Marion, Kans., assignor to Hopkins Manufacturing Corporation, Emporia, Kans., a corporation of Kansas

Application September 25, 1953, Serial No. 382,324

4 Claims. (Cl. 114—185)

This invention relates to improvements in pumping apparatus for boats wherein the water stream from the propeller serves to create a suction whereby the water in the bottom of the boat is ejected.

The principal object of the present invention is the provision of a water ejector apparatus removably attached exteriorly of a boat having a motor driven propeller, said ejector apparatus including a suction tube normally disposed in axial alignment with said propeller, and a tubular member interconnecting said suction tube with the bottom of the boat chamber.

Other objects are simplicity and economy of construction, ease and efficiency of operation, and adaptability for use with any boat that is propelled through the water.

With these objects in mind, as well as other objects which will appear during the course of the specification, reference will be had to the drawings wherein:

Fig. 1 is a side elevational view of a boat provided with an outboard motor of any of the many well known types.

Fig. 2 is a sectional view taken on line II—II of Fig. 1.

Fig. 3 is an enlarged rear elevation of the principal elements of the pumping apparatus.

Fig. 4 is a sectional view taken on line IV—IV of Fig. 3, with some parts left in elevation.

Fig. 5 is a sectional view taken on line V—V of Fig. 4.

Fig. 6 is a modified form showing the pumping apparatus as used with an inboard motor boat.

Fig. 7 is a plan view of the structure shown in Fig. 6.

Like reference characters refer to similar parts through the several views of the drawings and the numeral **10** designates a boat such as an open deck canoe provided with an outboard motor structure **12** comprising motor **14** provided with a depending vertically disposed housing **16** carrying adjacent its lower end a propeller **18** driven by said motor **14** which drives shaft **20** having a bevel gear **22** which intermeshes with bevel gear **24** fixed to propeller shaft **26**.

Integral with housing **16** and projecting outwardly above propeller **18** is an anti-cavitation plate **28**. Anchored to plate **28** by means of a U-shaped bolt **30**, is a clamp plate **32** having a socket **34** formed therein which clampingly hugs the extended end of plate **28**. Plate **32** has an upwardly projecting lug **36** which is provided with a pair of drilled holes **38** through which the threaded legs **40** of U-shaped bolt **30** extend. The nuts **42** operatively mounted on the threaded legs **40** are adapted to draw the rebent portion of bolt **30** against housing **16** as the clamp plate **32** is clamped tightly against plate **28**. Integral with the rear end of clamp plate **32** is a vertically disposed socket member **44** diametrically offset at its upper end to form a semicircular projection **46**.

The pumping apparatus better shown in 1, 2, 3, 4 and 5 comprises a standard **50** rigidly attached at its lower end portion **52** to an angled suction tube **54** having a relatively long leg **56** disposed in parallel relation with said standard and a short leg **58** disposed at an angle to leg **56**. Carried by tubular member **54** is a frusto-

conical tubular member **60** disposed parallel and concentric with leg **58**. It will be noted that leg **58** extends a short distance into the intake or small end **62** of member **60** whereby a stream of water delivered to member **60** will create a suction in tube **54** whereby water in the bottom of boat **10** will be drawn through flexible hose **64** which passes over the gunwale **66** of the boat with its lower end positioned in the water in the bottom of the boat. Integral with the upper end portion of standard **50** is a bracket **68** in which is fixedly mounted a rod **70** having its lower portion protruding below said bracket to fit into socket member **44** with its semicircular member **72** intermeshing with semicircular member **46**. The upper end of rod **70** is provided with a hand grip **74** also rivets **76** secure rod **70** to bracket **68**. These semicircular members **72** and **46** interengage to secure the ejecting apparatus and the housing **16** in fixed relation so that as the housing is oscillated during the steering of the boat, propeller **18** and tube **58** will remain in axial alignment to facilitate proper water ejection action at all times.

To facilitate better suction action by tube **60**, it will be noted that its intake end **62** is flared outwardly. It will be further noted that the frusto-conical vacuum tube **60** is always positioned in the center of the water flow line created by the propeller **18**.

Reference will now be had to Figs. 6 and 7 wherein is shown the pumping apparatus as used in conjunction with an inboard motor boat **80** wherein the motor **82** is mounted on the bottom of the boat and has a crank shaft **84** extending rearwardly therefrom through a bearing **86** mounted in the end wall **88** of the boat to the outside of the boat where it is provided with a suitable propeller **90**. Mounted directly in front of said propeller is a rudder **92** which is fixedly mounted on shaft **94** which in turn is mounted in bearings **96** and **98** carried by said boat. A rudder arm **100** secured to shaft **94** is positioned within the boat in convenient reach of the operator.

The pumping apparatus for removing the water from the bottom of the boat is similar to that shown in the preferred form and is carried by the gunwale **102** of the boat **80** by means of a bracket **104**, which is fastened to the boat by means of bolts **106**. This bracket has a vertically disposed socket member **108** offset at its upper end portion to present an upwardly projecting semicircular member **110** adapted to engage depending semicircular member **72** of bracket **68** as rod **70** extends through socket **108**.

Due to the relative relation of suction tube **45** and frusto-conical member **60**, it is quite evident that the speed of the water tending to cause a suction in tube **54** will be increased by the flow of the water through **60**. This suction might be obtained without the use of member **60** if the boat is moved at sufficient forward speed through the water.

What I claim as new and desire to protect by Letters Patent is:

1. A water ejection apparatus for a propeller driven boat comprising a frusto-conical tube, means for mounting said tube on said boat in a position behind said propeller in the wake thereof, said conical tube being positioned with its smaller end forwardly, a suction tube fixed to said conical tube with its rearward end portion disposed concentrically within the forward portion of said conical tube, and a flexible tube having one end attached to the opposite end of said suction tube, the opposite end of said flexible tube being adapted to be placed in the bilge of the boat.

2. A structure as set forth in claim 1 for use in connection with a boat which is steerable by turning said propeller on a vertical axis, and wherein said mounting means is adapted to engage a portion of said boat movable

with said propeller as it turns on its vertical axis, whereby said conical tube and suction tube are maintained substantially coaxial with said propeller.

3. A structure as set forth in claim 1 for use in connection with a boat wherein said propeller is carried at the lower end of a vertically extending, axially oscillatable housing member, said housing member having an anti-cavitation plate fixed thereto and extending rearwardly over said propeller, and wherein said mounting means comprises a bracket member carrying said conical tube and having a socket formed therein to fit over the rearward end portion of said anti-cavitation plate, and a U-bolt fixed in said bracket member and adapted to pass forwardly around said housing member.

4. A structure as set forth in claim 1 for use in connection with a boat wherein said propeller is carried at the lower end of a vertically extending, axially oscillatable housing member, said housing member having an anti-cavitation plate fixed thereto and extending rearwardly over said propeller, and wherein said mounting means comprises a bracket member having a socket formed therein to fit over the rearward end portion of said anti-cavitation plate, a U-bolt fixed in said bracket member and adapted to extend forwardly around said housing member, said bracket member including a vertically disposed tubular portion with an upwardly extending semi-cylindrical section, and a second tubular member to which said conical tube is attached, said second tubular member having a rod fixed therein and slidably inserted in the tubular portion of said bracket, and having a downwardly extending semi-cylindrical extension engageable with the extension of said bracket tube to prevent relative rotation of said tubular members, said rod extending upwardly to form a handle for detaching said conical and suction tubes from said bracket.

References Cited in the file of this patent

UNITED STATES PATENTS

1,900,180	Harvey	Mar. 7, 1933
2,120,858	Davant	June 14, 1938
2,230,958	Langdon	Feb. 4, 1941
2,418,252	Engle	Apr. 1, 1947
2,530,664	Pye	Nov. 21, 1950
2,565,885	Reitz	Aug. 28, 1951
2,684,635	Winkelman et al.	July 27, 1954
2,771,052	Halvenson	Nov. 20, 1956

FOREIGN PATENTS

691,799	Great Britain	May 20, 1953