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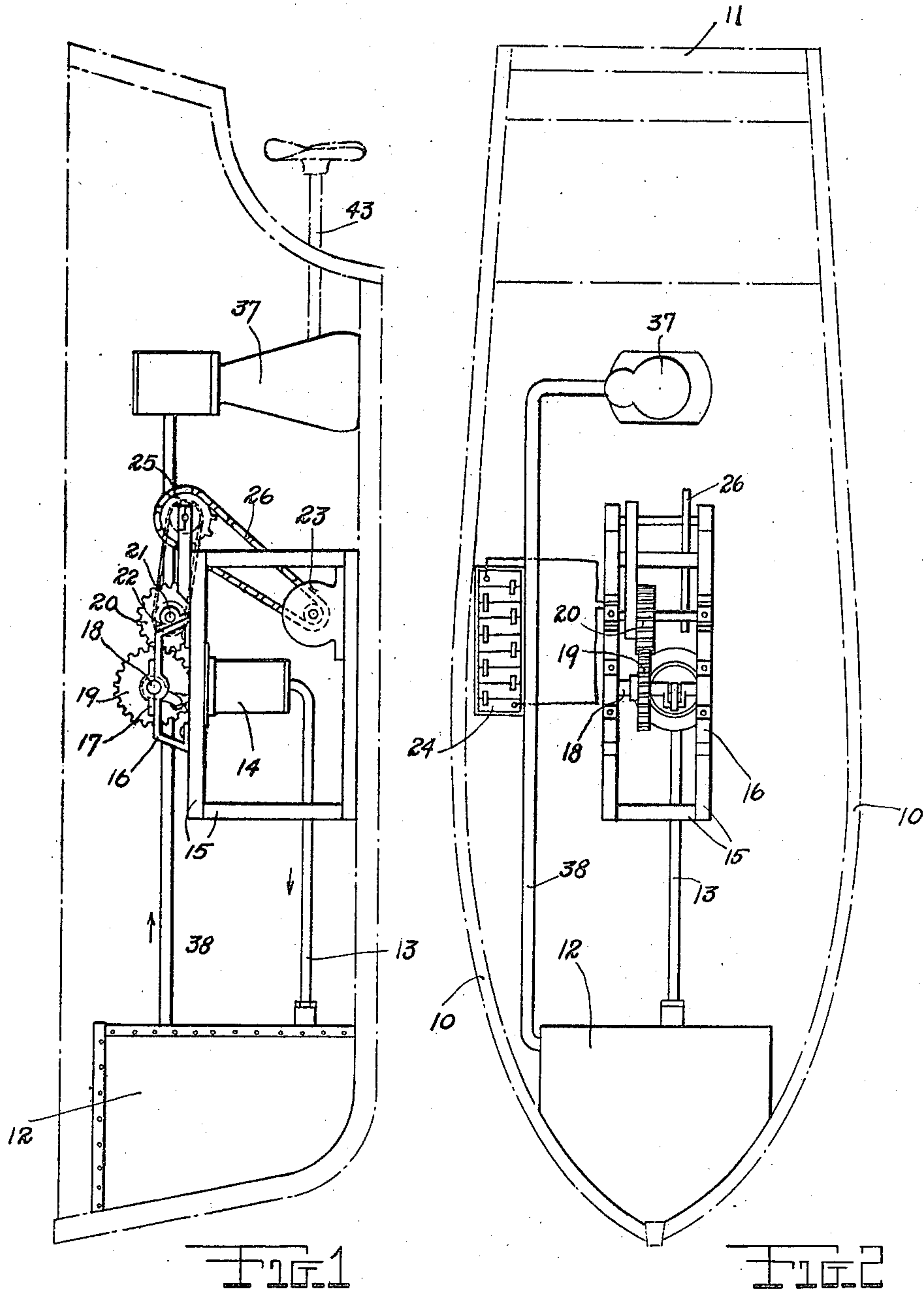
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G. GUSTAFSON

PUMP FOR BOAT PROPELLING DEVICES

Filed Dec. 22, 1921

2 Sheets-Sheet 1



INVENTOR
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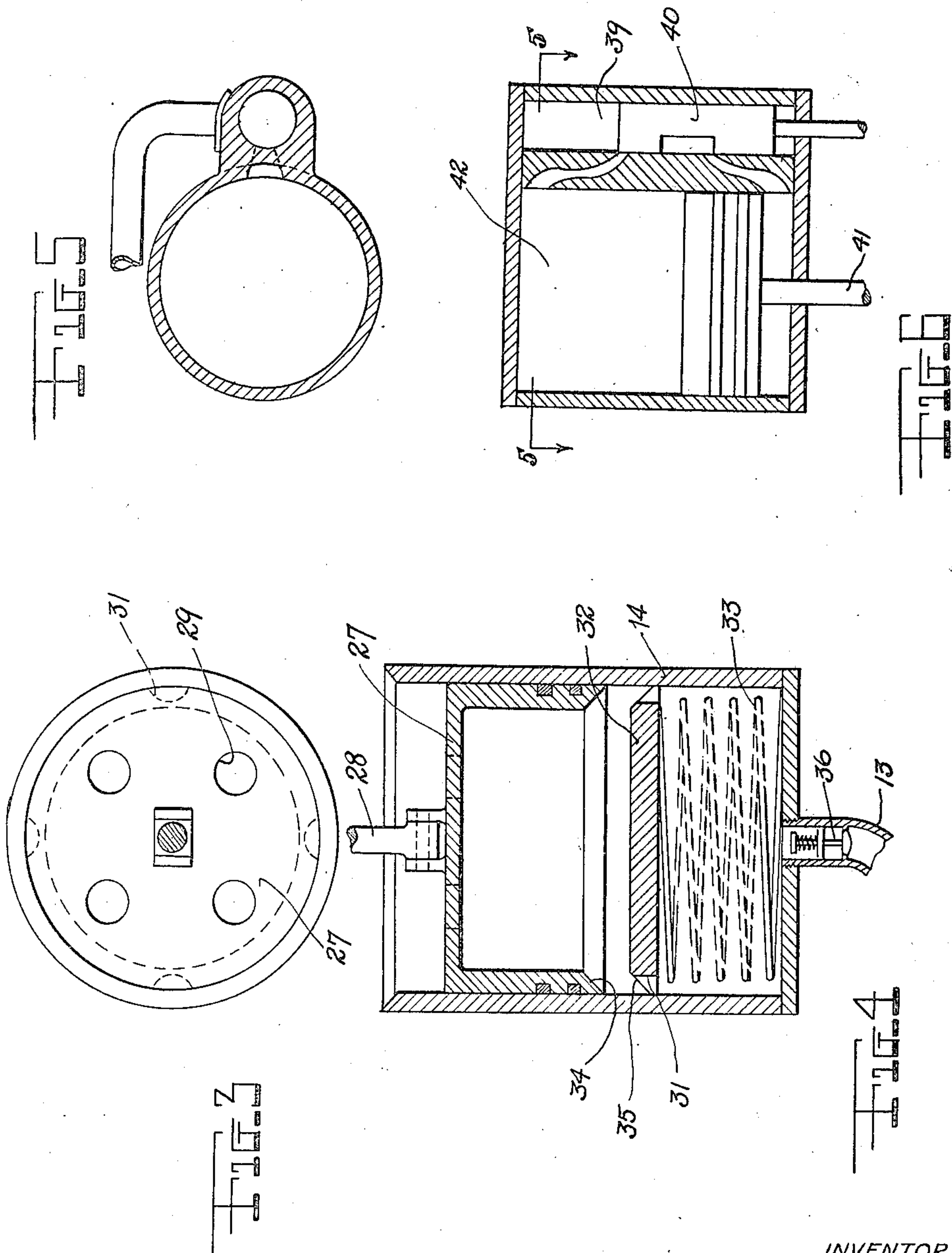
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UNITED STATES PATENT OFFICE.

GOTTFRIED GUSTAFSON, OF BROOKLYN, NEW YORK.

PUMP FOR BOAT-PROPELLING DEVICES.

Application filed December 22, 1921. Serial No. 524,097.

To all whom it may concern:

Be it known that I, GOTTFRIED GUSTAFSON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Pumps for Boat-Propelling Devices, of which the following is a specification.

This invention relates to propelling mechanisms for boats and the like, and the main object is to provide a novel pump which is coupled thru a chain of gearing to a motor, and supplies an air storage tank from which air may be tapped for various purposes.

This and other objects will become apparent in the description to follow in which characters of reference will refer to the like-named parts in the drawings.

Briefly describing the drawings, Figure 1 illustrates a top plan view of a boat with my propelling device mounted therein.

Figure 2 is a side elevation of the same.

Figure 3 is a top plan view of the air pump cylinder.

Figure 4 is a sectional elevation of the same taken centrally.

Figure 5 is a cross section thru the cylinder head of an air operated reciprocating engine; section being taken on line 5--5 of Figure 6.

Figure 6 is an elevational section taken centrally thru the said cylinder head.

Referring more in detail to the drawings, numerals 10 and 11 indicate the gunwale and stern respectively of a common form of motor boat or launch and is shown in broken lines.

A tank 12 used for the storage of air is secured in the bow end of the boat and has the pipe line 13 joined thereto at its lower end. An air pump cylinder 14 secured to the frame 15 receives the opposite end of the pipe 13 and forms a supply system for the storage tank.

Brace members 16 secured to the upper frame members cradle bearing blocks 17 which receives a crank shaft 18. A spur gear 19 fixed to the said shaft 18 meshes with a smaller gear 20, mounted on shaft 21 which is rotatably mounted between the bearing blocks 22.

An electric motor 23 energized by a storage battery 24 rotates the sprocket wheel 25 thru the chain 26 which in turn is connected to and rotates the gears 19 and 20 thru the medium of belt and pulleys.

Gear 19 rotates crank shaft 18 and imparts a reciprocal sliding motion to piston head 27 thru the arm 28. My novel means for filling cylinder 14 is presented in Figures 3 and 4. On the upward stroke of piston head 27 air enters the cylinder thru the holes 29 thence into the lower chamber 30 thru a plurality of notches 31 in member 32. The latter is normally in a position of rest on the top of spring 33 as indicated in Figure 4. On the downward stroke beveled edge 34 of piston head 27 contacts with the corresponding edge 35 of member 32 sealing the air in the lower part of the cylinder from escape and forcing the same past the check valve 36 into the storage tank 12 thru the supply line 13. The upward stroke of the piston head disengages member 32 and recharging of the cylinder again takes place after which the downward stroke repeats the operation as heretofore described.

A vertical reciprocating engine 37 receives the air from the storage tank thru the delivery tube 38 and enters the reciprocating valve chamber 39. Valve plunger 40 is actuated by rod 41 and controls the air supply into the cylinder 42 in the usual and well known manner. The usual construction for rotating the propeller shaft 43 is resorted to and therefore is not shown.

I claim:

In a device of the class described, a vertical cylinder open at the top, a piston head having intake holes therein and being adapted to slide in said cylinder, an annular wall encircling said piston head and having its lower internal edge beveled, an annular disk floating in said cylinder, a beveled peripheral edge on said disk engageable with the corresponding edge of the piston head, a coil spring supporting said disk, said disk having notches on its periphery, said notches being normally closed when in contact with the piston head, and means for actuating said piston head.

In witness whereof I affix my signature.

GOTTFRIED GUSTAFSON.