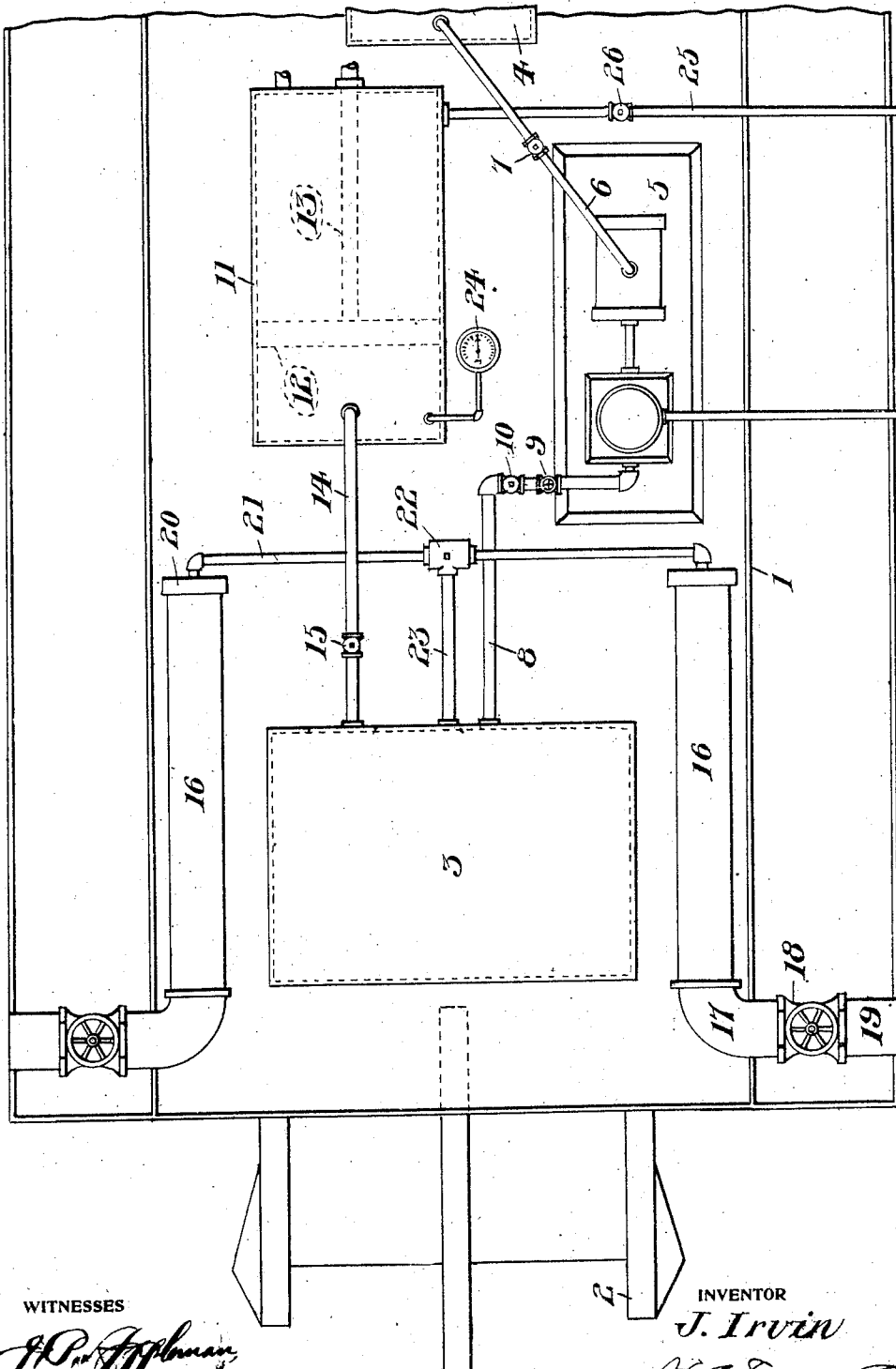


J. IRVIN.
STEERING APPARATUS FOR VESSELS.
APPLICATION FILED MAR. 1, 1912.

1,037,011.

Patented Aug. 27, 1912.



WITNESSES

J. P. Hoffman
Ralph C. Evert

INVENTOR

J. Irvin

BY

W. C. Ewert & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHNSON IRVIN, OF CORAOPOLIS, PENNSYLVANIA.

STEERING APPARATUS FOR VESSELS.

1,037,011.

Specification of Letters Patent.

Patented Aug. 27, 1912.

Application filed March 1, 1912. Serial No. 680,955.

To all whom it may concern:

Be it known that I, JOHNSON IRVIN, a citizen of the United States of America, residing at Coraopolis, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Steering Apparatus for Vessels, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a steering apparatus for vessels, and more particularly to that type of boat used on lakes, streams and other bodies of water.

The primary object of my invention is to provide a steering apparatus that will facilitate placing a vessel in shore or in proximity to a pier or other vessel.

Another object of this invention is to provide a steering apparatus wherein a fluid pressure is utilized for moving the stern of a boat sidewise.

A further object of this invention is to provide a steering apparatus that can be advantageously used in connection with that type of craft used upon the Mississippi and Ohio rivers and their tributaries wherein shallow water is encountered and paddle wheels resorted to for propulsion purposes.

The principles of my invention are illustrated in the drawing wherein there is illustrated a diagrammatic plan of the steering apparatus.

Further describing my invention with reference to the drawing, 1 denotes the stern portion of the hull of a boat that has the ordinary type of rudders 2.

3 denotes a main reservoir and 4 a boiler, these being located in the hull of the boat or upon the deck thereof.

5 denotes a "donkey" engine that is connected by a pipe 6 to the boiler 4, said pipe having a valve 7 whereby the supply of steam from the boiler 4 to the donkey engine can be controlled.

8 denotes a pipe connecting the engine 5 to the main reservoir 3 and this pipe has a shutoff valve 9 and a check valve 10 that prevents water from flowing into the engine.

11 denotes a compression cylinder having a piston 12 and a piston rod 13 operated by a suitable source of power, preferably the operating engine of the boat.

14 denotes a pipe connecting the compression cylinder 11 to the main reservoir 3, said pipe having a shutoff valve 15.

16 denotes longitudinally parallel discharge pipes provided with elbows 17, shutoff valves 18 and nozzles 19, said valves and nozzles being located at the inner sides of the hull and at the stern of the boat. The discharge pipes 16 are provided with heads 20 connected by branch pipes 21 to a two-way valve 22, which is connected by a pipe 23 to the main reservoir 3.

24 denotes a pressure gage carried by the compression cylinder 11 for determining the amount of pressure within said cylinder. The cylinder 11 is provided with an exhaust pipe 25 having a check valve 26.

In operation; the donkey engine 5 is placed in operation to pump water into the main reservoir 3 and into the compression cylinder 11; the piston 12 being in a retracted position whereby the cylinder 11 can be filled with water. The engine 5 is operated until the reservoir 3 and the cylinder 11 are completely filled with water under as high a pressure as possible. The donkey engine is then shut down and simultaneous with the operation of the piston 12, the valve 22 is opened whereby the water within the reservoir 3 can pass through the pipes 23 and 21 to one of the discharge pipes 16. The piston 12 forces the water from the cylinder 11, and the main reservoir 3 and the nozzles 19 of the discharge pipes 16, and the force of water is sufficient to move the boat sidewise in a desired direction, according to which way the valve 22 is opened.

The valves 18 are employed for closing the discharge pipes 16 when one of said pipes is not to be used, thereby preventing debris and other matter from entering the pipes.

After the vessel has been moved, the donkey engine can again be placed in operation to recharge the reservoir 3 and the compression cylinder 11.

It is thought that the operation and utility of the steering apparatus will be apparent without further description, and while in the drawing there is illustrated a preferred embodiment of the invention, it is to be understood that the structural elements are susceptible to such variations as fall within the scope of the appended claim.

What I claim is:—

In a steering apparatus, the combination with a vessel of a main reservoir, an engine for forcing water into said reservoir, a boiler for supplying steam to said engine, a

compression cylinder in communication with
said main reservoir and adapted to receive
water from said main reservoir, discharge
pipes in communication with said main res-
5 ervoir, nozzles carried by said pipes and
protruding from the sides of said vessel,
shutoff valves in connection with said noz-
zles, a two-way valve controlling the sup-
ply of water from said main reservoir to
10 said discharge pipes, and means in connec-

tion with said compression cylinder for forc-
ing water under pressure from said cylinder
and said main reservoir into one of said
discharge pipes.

In testimony whereof I affix my signature 15
in the presence of two witnesses.

JOHNSON IRVIN.

Witnesses:

CHRISTINA T. HOOD,
K. KALKES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."