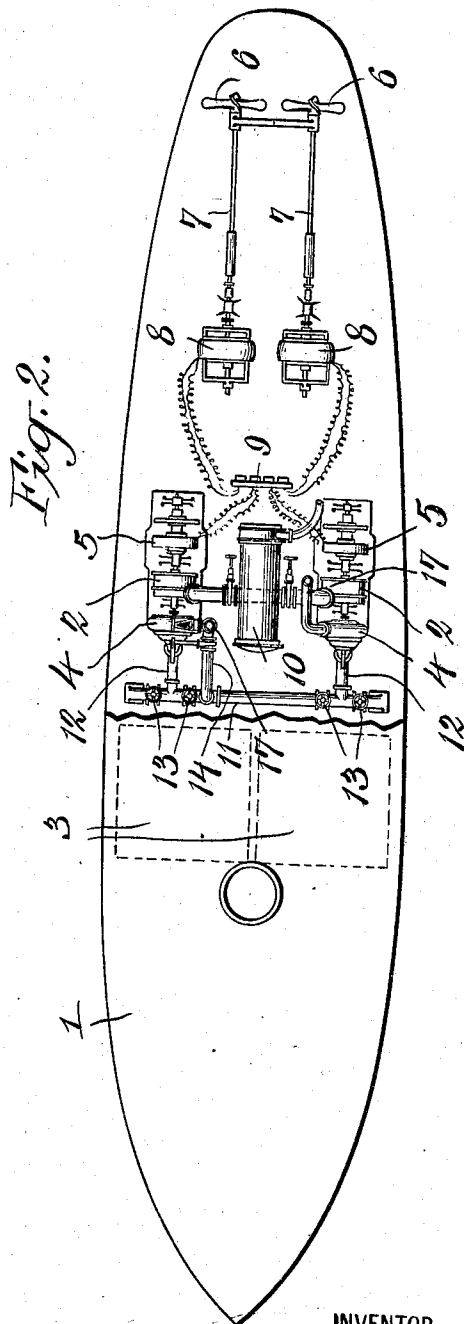
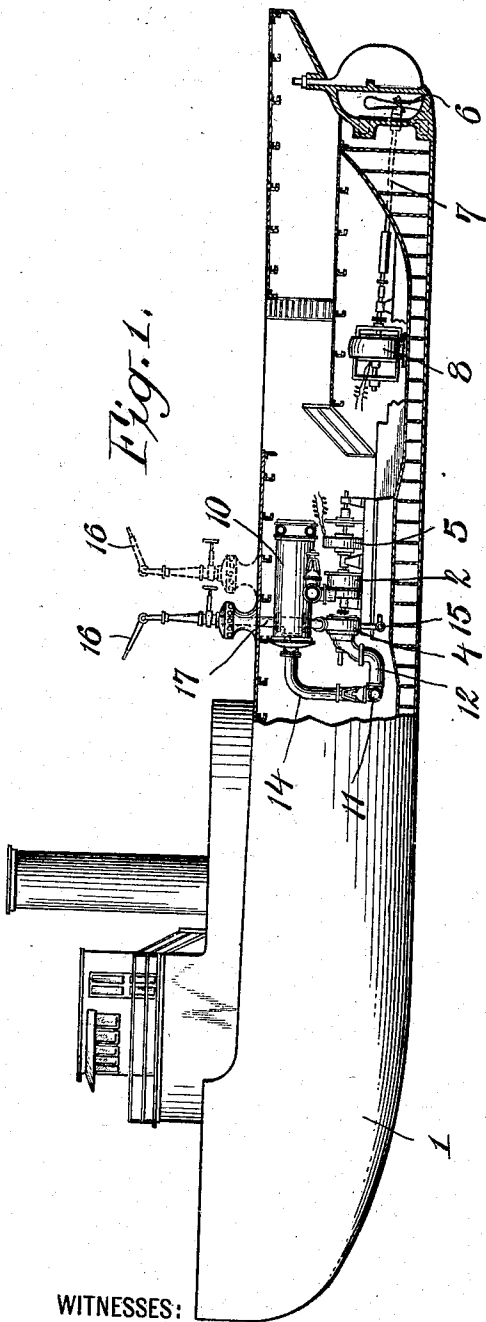


W. I. BABCOCK.
FIRE BOAT.
APPLICATION FILED MAY 1, 1908.

924,128.

Patented June 8, 1909.



WITNESSES:

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FIRE-BOAT.

No. 924,128.

Specification of Letters Patent.

Patented June 8, 1909.

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To all whom it may concern:

Be it known that I, WASHINGTON IRVING BABCOCK, a citizen of the United States of America, and resident of Flushing, borough and county of Queens, city and State of New York, have invented certain new and useful Improvements in Fire-Boats, of which the following is a specification.

My invention relates to fire boats or floating fire engines such as are used for the protection of property from fire along a water front.

The object of my invention is to produce a fire boat which can be manned by a relatively small crew, which can be readily maneuvered and one in which substantially the entire steam and power plant of the boat may be used for propelling the boat while it is on its way to the place where it is needed and then be available for pumping water after having reached its destination, so that the maximum speed and water throwing efficiency may be available with a minimum amount of machinery and size of boat. It is essential that boats of this class be provided with powerful fire pumps and with propelling machinery capable of developing a high speed in order that they may reach a fire in the shortest possible time and it is essential while at the fire that they shall be capable of being maneuvered continuously while the fire pumps are being operated. As heretofore constructed, boats of this class have been provided with propelling engines of sufficient size and power to develop the requisite speed and fire pumps of sufficient size and power for throwing large streams of water. Roughly speaking, the power required to operate the fire pumps is about equal to the propelling power required to give the boats the necessary speed, and as heretofore constructed it has been necessary to provide operators for both the fire pumps and the propelling engines because both are handled in the engine room and may be run at the same time.

It is the object of my invention to provide means whereby a single power plant and a single set of operators may be used exclusively for propelling the boat at its maximum speed or exclusively for operating the fire pumps, and which shall at the same time permit substantially all of the power to be used for operating the pumps and a small amount of the power to be used to maneuver the boat

from place to place while it is operating upon the fire.

My invention consists in equipping a boat provided with a steam plant of any approved construction, with one or more engines, preferably steam turbines, each adapted to drive simultaneously an electric generator and a rotary pump, providing one or more propellers adapted to be driven by electric motors electrically connected with the generators driven by the steam engines or turbines, providing means whereby when the water is shut off from the rotary pumps the entire power of the steam engines or turbines may be employed to operate the propellers and whereby when the propellers are not in use or are using only a small amount of power to maneuver the boat, the whole power or so much of it as is not used by the propellers is available for operating the pumps.

In the drawings accompanying and forming a part of this specification Figure 1 represents a side view partially in section of the fire boat embodying my invention and Fig. 2 a plan view of the same.

Numeral 1 represents the hull of the boat, 2 represents steam turbines adapted to receive steam from the boilers 3, 4 represents rotary fire pumps the impellers or rotors of which are secured to the turbine shaft, 5 represents electric generators also secured to the turbine shafts, 6 represents propellers secured to the outer ends of the shafts 7, 8 represents electric motors secured to the shafts 7, 9 represents a switch board for making the proper connections between the generators 5 and the motor 8, and 10 represents a condenser of any approved construction properly connected with the turbines 2.

An intake pipe 11 is arranged transversely across the boat and communicates with the exterior of the boat below the water line. This pipe is connected with the inlet ends of the fire pumps by the pipes 12. The intake pipe 11 is provided with valves 13 on either side of the pipes 12 and a pipe 14 is arranged to connect the delivery end of one of the fire pumps with the pipe 11 so that the pumps may be operated in tandem if desired. The fire pumps are provided with a valved outlet 15 for the purpose of draining the pumps from water when they are not in service, as the pumps are below the water line. Nozzles 16 are connected by pipes 17 with the delivery end of the fire pumps. These nozzles

are arranged to extend above the deck of the vessel and to be controlled and directed in any approved manner. Electric controllers of any approved construction for controlling the current to the motors on the propeller shafts are located in the pilot house and may be located at other points on the boat as required, so that the motors may be operated independently of the turbines. These controllers are not shown as they do not form a part of my present invention.

When the supply of water is shut off from the rotary pumps 4, and the pumps drained of water, the rotating parts of the pumps consume no power and operate merely as fly wheels and under these conditions the entire power of the turbines may be utilized for operating the generators and, thereby, through the motors, the propellers which drive the boat. When the current is shut off from the motors there is no load on the generators and therefore the rotors of the generators revolve idly and consume no power so that during such times the entire power of the turbines may be employed for pumping water. If, however, during the progress of a fire it is desired to slowly maneuver the boat and change its position from one point to another without interrupting the streams of water thrown by the pumps, the small amount of current adequate for this purpose will at all times be available, the generators being in constant action, without appreciably diminishing the discharge of water and without attention from the attendants. In the fire boats heretofore constructed it has been necessary to employ two sets of engineers or attendants, one to operate the engines used for propelling the boat and another to operate the pumps. By means of my improved construction it is necessary to provide only one set of attendants for the entire pumping and operating

machinery of the boat. The boat can be maneuvered from the pilot house or from any convenient point without the attention of the attendants in the engine room and the maximum power of the plant is available separately for either the propulsion of the boat or the throwing of streams of water on the fire.

Having thus described my invention what I claim is:

1. In a fire boat the combination with a turbine rotor and rotor shaft of a centrifugal pump impeller on said shaft, an electric generator having its rotor on said shaft, a propeller and propeller shaft, an electric motor on said propeller shaft and connections between said electric generator and said electric motor.

2. In a fire boat, the combination with a shaft, of an electric generator rotor on said shaft, a rotary pump impeller on said shaft, means for driving said shaft, a propeller shaft, an electric motor on said propeller shaft, and electric connections between said electric motor and said electric generator rotor.

3. In a fire boat, the combination with a prime mover and prime mover shaft, of a rotary pump impeller on said shaft, an electric generator having its rotor on said shaft, a propeller and propeller shaft, an electric motor on said propeller shaft, and connections between said electric generator and said electric motor.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

WASHINGTON IRVING BABCOCK.

Witnesses:

ERNEST MILLER,
JOHN F. VALENTINE.