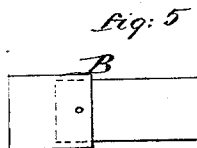
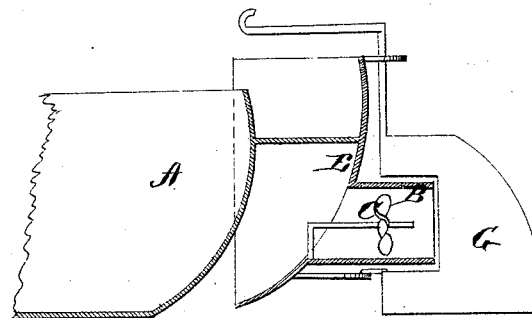
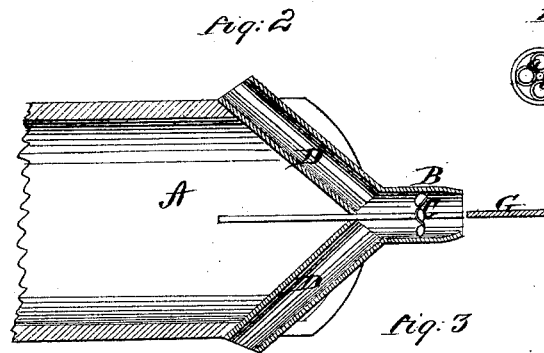
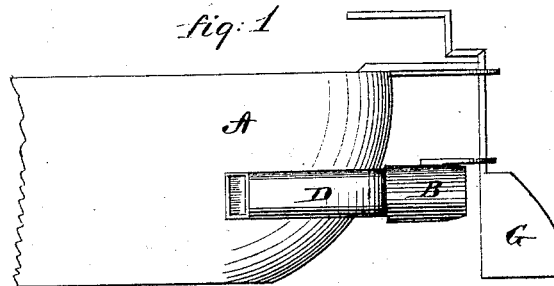


GEORGE A. BEIDLER.

Improvement in Propulsion of Vessels.

No. 114,637.

Patented May 9, 1871.



Witnesses.

C. L. Evers
Jas. C. Hutchinson

Inventor.

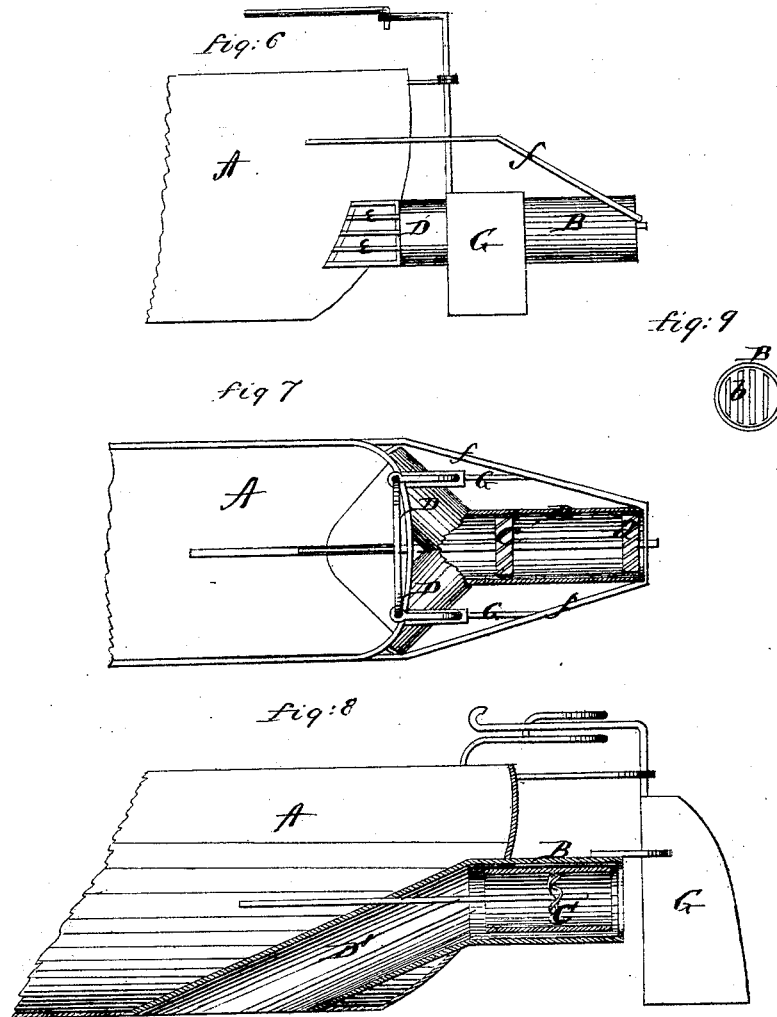
Geo. A. Beidler
per Alexander Mason
Atty.

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Alexander Mason
 Atty.

United States Patent Office.

GEORGE A. BEIDLER, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 114,637, dated May 9, 1871.

IMPROVEMENT IN PROPULSION OF VESSELS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GEORGE A. BEIDLER, of Philadelphia, in the county of Philadelphia and in the State of Pennsylvania, have invented certain new and useful Improvements in Boat-Propeller; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The greatest objection to propelling canal-boats with a screw or wheel by steam or other power is, that the water, by the motion of the propeller-screw or wheel, will wash and injure the banks of the canal.

To obviate this difficulty I surround the propeller-screw or wheel with a tube or cylinder extending a suitable distance in rear of the boat through which the water passes, whereby the water is directed backward and toward the middle of the canal by the screw or wheel, and before the commotion of the waves reach the banks their force will be so far spent that they will not wash or otherwise injure the banks, and, at the same time, more power is obtained.

The nature of my invention, hence, consists in a tube or cylinder extending toward the rear from the stern of a canal or other boat, and surrounding the propeller-screw or wheel.

It also consists in the means whereby the water is conducted into the tube or cylinder.

Also, in certain means whereby the water may be checked, if necessary, after being acted upon by the screw or wheel within the cylinder.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figures 1, 2, and 8 show my invention especially applied to boats when being newly built, though it can readily be applied to old boats as well;

Figures 3, 6, and 7 show how my invention may be specially applied to boats already in use, although it may as well be applied to those to be built;

Figures 4 and 9 show certain means for checking the water at the rear end of the tube or cylinder, if desired or necessary; and

Figure 5 is a side view of a jointed tube or cylinder.

A represents a canal-boat of any desired construction, from the stern of which extends, for a suitable distance, a tube or cylinder, B, of such diameter that the propeller-screw or wheel C may be placed therein and freely rotate within the same.

From the front end of this tube or cylinder B branch tubes, D D, lead through the sides of the stern of the boat, and opening at any desired point between the bow and the stern, at the sides of the boat, thus freely conducting and letting the water in-

to the rear tube or cylinder B to be acted upon by the screw or wheel C.

Or I may, as shown in fig. 8, have a continuation, D', of the tube B, leading inward and downward through the bottom or on the outside of the boat, for the same purpose.

These methods are mainly applicable in building new boats, although they could be applied to old boats without materially changing or altering the boats.

For old boats, especially, I have, as shown in figs. 6 and 7, a tube or cylinder, with branch or side tubes attached in any suitable manner to the stern of the boat.

Or I may have, as shown in fig. 3, a concave or funnel-shaped cap, E, attached to the stern of the boat, from which the tube or cylinder B extends, said cap letting the water in at the sides and bottom.

By these means the water, or rather the commotion of the waves of the water, caused by the action of the screw or wheel in said tube or cylinder, is carried directly backward toward and into the center of the canal, thereby preventing the washing of the canal banks; and I also obtain more power and consequent speed from the same amount of force.

At the forward ends of the tubes D D or D' are arranged grate-bars, *e e*, for the purpose of preventing ice or other drift matter from coming into the tubes.

The extreme rear end of the tube or cylinder B may be made contracted, as shown in fig. 2, whereby the water is more directly carried backward and toward the center of the canal.

Guards, *f f*, may also be arranged to protect the tubes in case of collision or contact with other boats.

In some cases it may become necessary to check the water after it is acted upon by the screw or wheel C. This may be accomplished in various ways, either by a series of small tubes, *a a*, inserted in the rear end of the cylinder B, as shown in fig. 4, or, as shown in fig. 9, a grate, *b*, may be inserted in lieu of the tubes *a a*.

In fig. 7 I have shown the propeller-shaft extended to the rear end of the tube or cylinder B, and on said shaft is placed loosely a wheel, *d*, which is operated by the water from the screw or wheel C, and thus checks the water.

In some cases the cylinder B may be made jointed, as shown in fig. 5, so that when the boat is near one of the banks the cylinder may be turned to direct the water toward the center of the canal.

The rudder G may be arranged in various ways; either in rear of the cylinder or surrounding the same, or I may use one on each side. This can, however, be left to the option of the builder.

My invention, although described as applied to canal-boats only, may as well be applied to any boats operating in narrow streams where it is desirable to prevent the banks from washing.

I am aware that a short tube, curb, or guard, attached to the stern of a boat and surrounding the propeller, has been used to protect the propeller from drift matter, and obviate, to a limited extent, the centrifugal action of the screw upon the water, whereby loss of power was occasioned, and I do, therefore, not claim such as my invention; but

What I do claim as new and desire to secure by Letters Patent, is—

1. The elongated tube or cylinder B surrounding the propeller-screw or wheel and extending in rear beyond the same, substantially as and for the purposes herein set forth.

2. A jointed or flexible tube or cylinder extending toward the rear from the stern of a canal or other boat, the front section surrounding the propeller-screw

or wheel, substantially as and for the purposes herein set forth.

3. In combination with a tube or cylinder, whole or jointed, extending toward the rear from the stern of a canal or other boat, and surrounding the propeller-screw or wheel, a grate, tubes, or other suitable device inserted in the rear end of said tube or cylinder for checking the water, substantially as herein set forth.

4. The extended tube B, surrounding the propeller-screw or wheel C, provided with one or more inlets, and attached to the rear end of a canal or other boat, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of April, 1871.

G. A. BEIDLER.

Witnesses:

A. N. MARR,
C. L. EVERT.