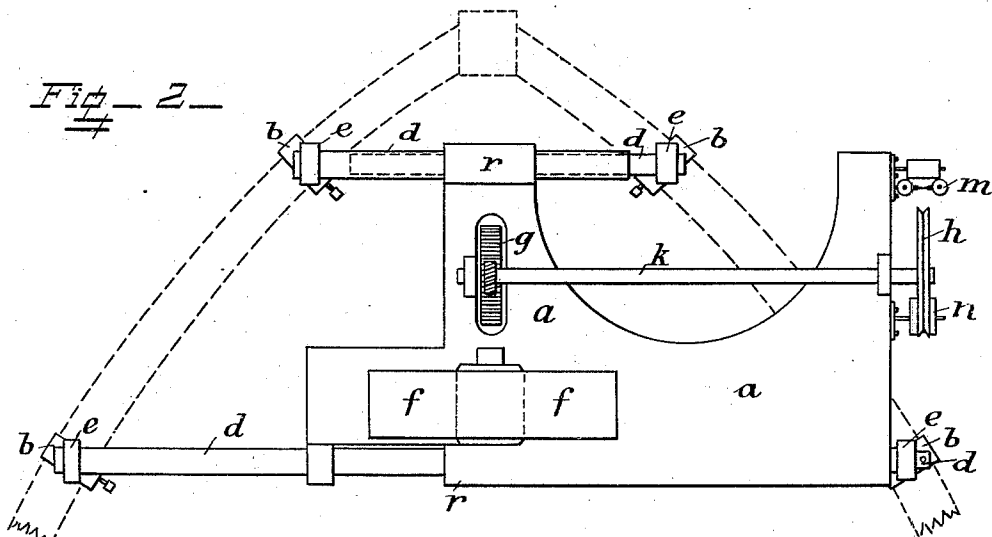
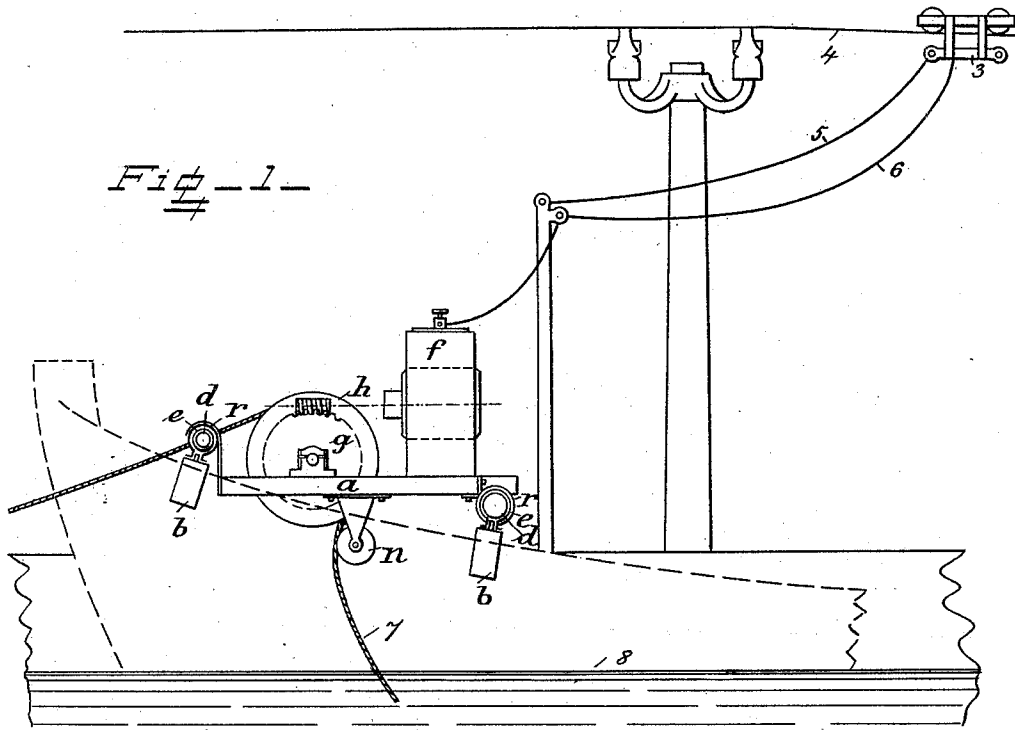


(No Model.)

O. BÜSSER.
MEANS FOR PROPELLING BOATS BY ELECTRICITY.
No. 464,955. Patented Dec. 15, 1891.



Witnesses:
H. L. O'Brien
[Signature]

Inventor.
Otto Büsser.
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Attorney.

UNITED STATES PATENT OFFICE.

OTTO BÜSSER, OF ODERBERG, NEAR BERLIN, GERMANY.

MEANS FOR PROPELLING BOATS BY ELECTRICITY.

SPECIFICATION forming part of Letters Patent No. 464,955, dated December 15, 1891.

Application filed February 10, 1891. Serial No. 380,944. (No model.)

To all whom it may concern:

Be it known that I, OTTO BÜSSER, civil engineer, a subject of the King of Prussia and German Emperor, residing at Oderberg, near Berlin, in the Kingdom of Prussia and German Empire, have invented certain new and useful Improvements in Means and Apparatus for Propelling Boats and Rafts on Water-Ways by Means of Electrical Energy; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to devices for propelling canal-boats by electricity; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

Referring to the accompanying drawings, Figure 1 shows a side elevation, and Fig. 2 a plan. The apparatus is mounted upon a bed plate or frame *a*.

It consists, first, of devices for the installation of the apparatus on the boat, and, secondly, of the motor.

The base-plate rests by means of bearers *d* of circular section upon collars *e*, fixed on clamps *b*, which can be adjusted in position upon the gunwales of the boat on which they are fixed by set-screws.

For the installation of the apparatus regard must be had to the curvature of the gunwale and to the distance apart of the two sides of the boat. The supporting-collars *e* can turn freely around a short pivot fixed vertically upon the middle of the top plate of the clamp; also, the circular bearers *d* move freely within the collars *e*, so that it is possible to regulate the positions of the clamps according to the varying curvatures of the gunwales. The bearer near the stern of the boat consists of two tubes fitted one within the other, while of the two rear bearers the left-hand one consists of a single tube and the right-hand one is a solid bar fixed to the base-plate *a*. The tubular bearers are carried in tubular sockets *r*, formed on the base-plate. The bearers can be slid longitudinally in their supports, and consequently they can be extended or shortened, according as the distance between the sides of the boat may require.

The electric motor *f* is mounted on the base-plate. Its armature axis transmits its motion by a worm to the worm-wheel *g*, which is fixed, together with the pulley or wheel *h* of the cable, upon a shaft *k*. The before-mentioned traction cable or chain passes around the pulley *h*, and in order to guide it securely onto the pulley at the entering side there are provided three rollers *m*. For guiding it at the leaving side a single roller *n* is employed. Lastly, there is provided on the right-hand gunwale of the boat a small post, which carries at its upper end an arrangement for fixing the cord from the contact-truck and for supporting the branch conducting-wire. The latter descends directly from the top of the post to the electric motor. This is of any suitable known construction. It is provided with a commutator, by means of which the current can be sent through the armature-coils in any desired direction or be cut off therefrom. The contact-truck *3* runs upon the line-wire *4* and is moved along by the cord *5*, so that the current is conducted to the motor *f* through the branch wire *6*. The cable-wheel *h* engages with the cable *7*, which lies in the water-way *8* below the boat, which is indicated by the dotted lines in the drawings. The current is supplied to the motor through the line and branch wires, and the boat is propelled by the cable-wheel, which revolves in contact with the cable.

What I claim is—

1. The combination, with a water-way, a continuous cable in the water-way, and an insulated line-wire, of an electric motor, a cable-wheel, a worm, and a worm-wheel operatively connecting the said motor with the cable-wheel, and a supporting base-plate adapted to be clamped to a boat, and a branch wire and traveling contact-trolley for conducting the current from the line-wire to the motor, substantially as set forth.

2. The combination, with the motor, the cable-wheel, and the intermediate driving mechanism, of the supporting base-plate, the clamps adapted to be secured to the sides of the boat, and the laterally-extensible bearers connected to the base-plate and pivoted in the said clamps, substantially as set forth.

3. The combination, with the base-plate for

supporting the motor and the cable-wheel and
provided with the sockets *r*, of the clamps
adapted to be secured to the sides of the boat
and the extensible tubular bearers *d*, sliding
5 in the said sockets and having their ends piv-
oted in the said clamps, substantially as set
forth.

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

OTTO BÜSSER.

Witnesses:

MARC M. RATTEN,
SIEGFRIED HAMBURGER.