G. MEYER.

CONDUCTOR FOR ELECTRIC TUGS.

APPLICATION FILED MAR. 2, 1912.

1,034,022. Patented July 30, 1912.

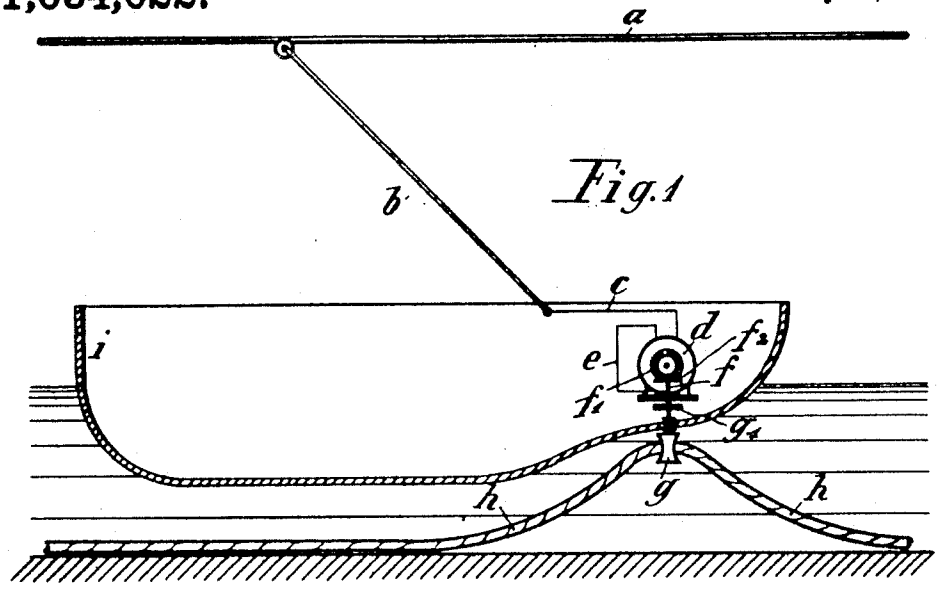

Fig. 1

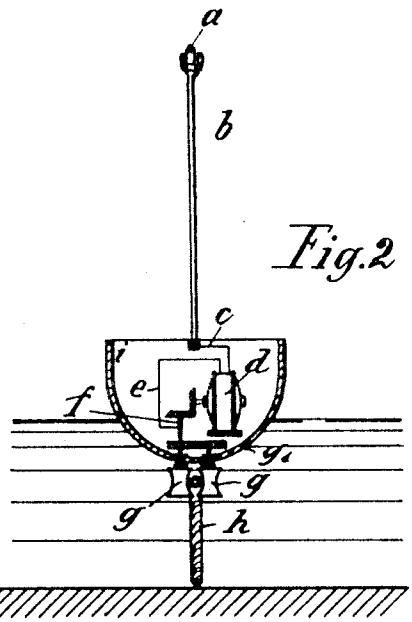

Fig. 2

Witnesses
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UNITED STATES PATENT OFFICE.

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CONDUCTOR FOR ELECTRIC TUGS.

1,034,022. Specification of Letters Patent. Patented July 30, 1912.

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To all whom it may concern:

Be it known that I, GEORG MEYER, a citizen of the Empire of Germany, and residing at Charlottenburg, near Berlin, Germany, have invented certain new and useful Improvements in Conductors for Electric Tugs, of which the following is a specification.

My invention relates to return conductors for electric tugs driven with the aid of overhead lines.

In general, when electric tugs are driven with the aid of overhead lines the current is returned to the power house by special return wires which are suspended together with feeders on a supporting rope. Now according to my invention for returning the current I employ a metallic band or rope, alone or together with the customary return wires: the tug pulls itself by means of friction rollers or in other manner along this band or rope which thus serves instead of a chain or rope as the draft member.

One illustrative embodiment of my invention is represented by way of example in the accompanying drawing, wherein:—

Figure 1 is a vertical longitudinal section and Fig. 2 is a vertical cross-section showing a tug to which the invention is applied.

Referring to the drawing, *a* designates the overhead line, *b* a current collector which is connected by the conductor *c* with one pole of the motor *d*. The other pole of the motor is connected by the conductor *e* to the axle *f* which is driven by the motor through the medium of bevel gears f_1, f_2 and drives through the medium of any suitable gearing g_1 the two friction rollers *g* between which is located the draft member *h*, *e. g.* a rope, band or the like. The motor and the friction rollers are carried by the boat *i*. When the electric circuit is closed current flows from the overhead line *a* by way of the current collector to the motor *d*, then through the conductor *e* to the axle *f*, through the friction rollers *g* into the rope *h* and back through this to the power station. The friction rollers pull the boat forward along the rope *h*.

The section of the metal rope or band will in general suffice for taking up the return current; if desired, the rope or band may be made of a specially good conducting material, *e. g.* silicon-bronze, which in addition has the advantage of great tensile strength. The rope or band may be located either above or in the water, and in the latter event the water will aid in returning the current. The intimate contact between a flat metal band and the rollers of the hauling device on the one hand, and the washing of the band by the water on the other hand, render the band particularly suitable for conducting away the electric current. In case it is not desirable to load the metallic band with the entire return current, a part thereof can be transmitted in well-known manner by return wires; the advantage is then obtained that return wires of materially smaller diameter than those customary heretofore can be used. In this case not only is material for the return conductor saved, but the overhead supporting construction is loaded less which, in consequence, can also be made lighter.

I claim:—

The combination with an overhead trolley line, of a boat, an electric motor on the boat having one pole electrically connected with said trolley line, a submerged draft member capable of conducting the return current from said motor, a pair of submerged metallic friction rolls journaled in the bottom of said boat and depending therefrom in operative engagement with said conducting draft member, and means for transmitting power from said motor to said rolls, said means being electrically connected to the other pole of said motor and adapted to convey the return current to said draft member through said rolls.

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

GEORG MEYER.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.