

M. P. MULLER, A. SCHWAAB & F. KRENSON.

Improvement in Canal-Boat Propulsion.

No. 127,911.

Patented June 11, 1872.

Fig. 1.

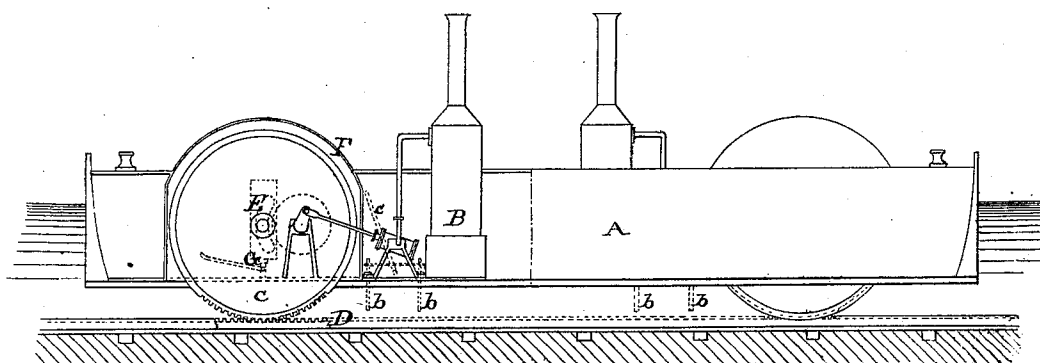


Fig. 2.

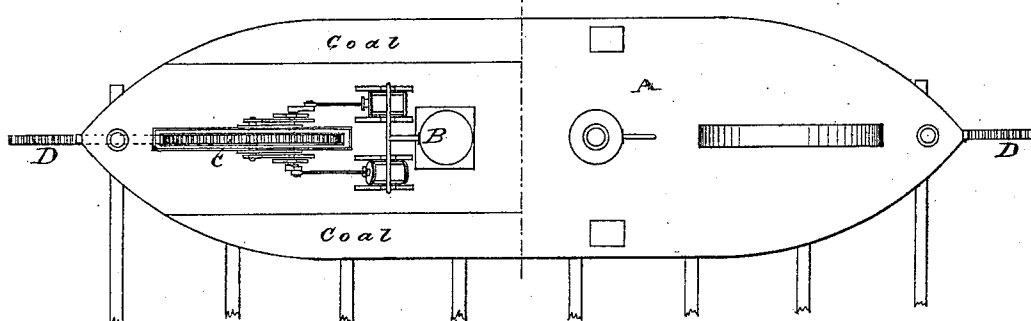
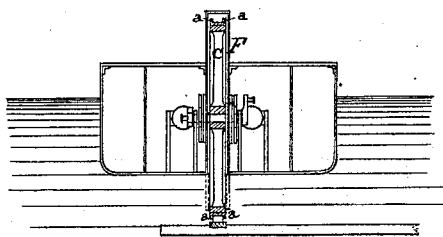


Fig. 3.



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UNITED STATES PATENT OFFICE.

MARTIN P. MULLER, AUGUSTUS SCHWAAB, AND FREDRICK KRENSON, OF SAVANNAH, GEORGIA.

IMPROVEMENT IN CANAL-BOAT PROPULSION.

Specification forming part of Letters Patent No. 127,911, dated June 11, 1872.

To all whom it may concern:

Be it known that we, MARTIN P. MULLER, AUGUSTUS SCHWAAB, and FREDRICK KRENSON, all of Savannah, in the county of Chatham and State of Georgia, have invented certain new and useful Improvements in Propelling Canal-Boats, of which the following is a full, clear, and exact description, sufficient to enable others to make and use the same.

Nature and Object of the Invention.

This invention consists of two or more reciprocating rods or "feelers," working through the bottom of the boat, which are combined with a wheel provided with flanges, which operate upon a rack arranged in the bottom of the canal, all of which will hereinafter more fully be set forth.

Description of the Accompanying Drawing.

Figure 1 is a longitudinal section of a boat, showing my improvements. Fig. 2 is a plan view of same. Fig. 3 is a transverse section of the same.

General Description.

A represents the frame of a boat, which may be of any desired length or size, and constructed in the ordinary manner. At each end of the boat there is placed a steam-engine, B, of any desired make or size, and which is geared to the cog-wheel C in a suitable manner. This wheel has cogs around its periphery, and a flange, *a*, upon each edge, so as to keep it in position on the toothed rail D; and the wheel is journaled in water-tight bearings E in the sides of the closed compartment F. The bearings E are adjustable, and are connected with the hydraulic ram G, or other suitable elevating device, so that they can be raised and lowered, carrying the wheel C with

them, allowing the wheel to be detached from the rail so as to change the position of the boat to any part of the canal—that is, from the middle to the side of the same. Extending through water-tight packings in the bottom of the boat are two or more reciprocating guides or "feelers," *b*, which are connected to a lever, *c*, so that they can be raised or depressed at will. After the wheel C has been raised from the rail D, the position of the boat having been changed, and it is desired to again place it in position, the feelers or guides *b* are depressed so that their ends will reach the rail, and the boat is then pushed sidewise until the guides strike the side of the rail, when the wheel C is lowered upon it.

The toothed rail is secured to the bottom of the canal in any desired manner, and there may be only one, or there may be one for boats going in each direction.

In operation, each boat may carry one or two engines, as described, for its own propulsion; but in practice it will be found better to have one powerful boat, capable of towing a number of ordinary canal-boats.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

The reciprocating guides or feelers *b*, working through the bottom of the boat, in combination with the cog-wheel C having flanges *a*, and operating, in connection with the boat A and rack D, as herein shown and described.

To the above we have signed our names this 18th day of October, A. D. 1871.

MARTIN P. MULLER.
AUGUSTUS SCHWAAB.
FREDRICK KRENSON.

Witnesses:

J. C. LE HARDY, M. D.,
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