

Arlan & Gautschi.

Screw Propeller.

N^o 102,645. Patented May 3, 1870.

Fig. 1.

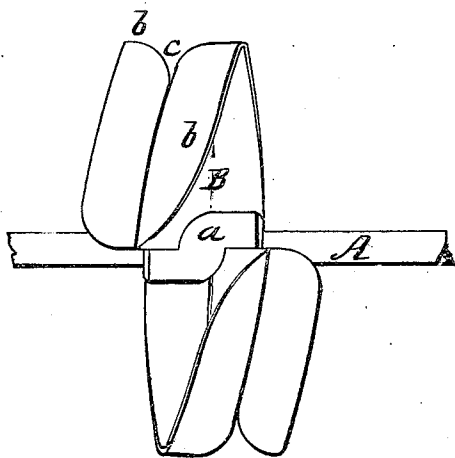
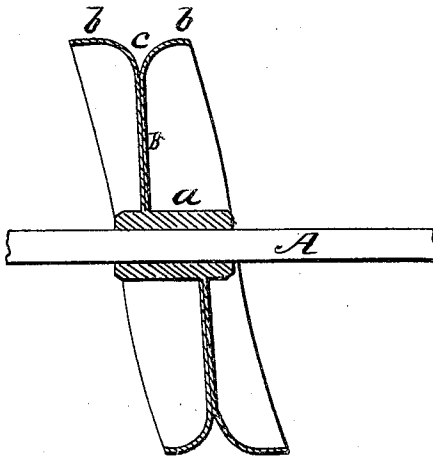


Fig. 2.



Witnesses.
Fred. Haynes
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United States Patent Office.

CHARLES ARLEN AND CHARLES GAUTSCHI, OF NEW YORK, N. Y.

Letters Patent No. 102,645, dated May 3, 1870.

IMPROVEMENT IN SCREW-PROPELLERS.

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

To all whom it may concern:

Be it known that we, CHARLES ARLEN and CHARLES GAUTSCHI, both of the city, county, and State of New York, have invented a new and useful Improvement in Screw Propellers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a side view, and

Figure 2 a section, taken longitudinally through its axis, of a screw-propeller, constructed in accordance with my improvement.

Similar letters of reference indicate corresponding parts.

My invention consists in a novel construction of the screw, whereby the water is more effectually restrained from being thrown out laterally by it, and is forced as a column in the rear of it, thereby making the screw more effective, and by the water being drawn in toward the edge of the screw, preventing the washing of the banks in the propulsion of vessels in canals or other narrow water-courses, for which my invention is more particularly designed.

Referring to the accompanying drawing—

A is the operating shaft, and B the screw proper, which is of plate-form, from its junction with the hub *a* to its periphery, and made to constitute an entire screw, as contradistinguished from screw sections carried by independent arms.

The same may be of any desired pitch and conformation, as regards increase, relatively to its hub or outer edge.

The outer edge of said screw or screw-plate is pro-

vided with reverse flanges *b b*, which are constructed to form a hollow, *c*, somewhat of the shape of a V, around the outer edge of the plate or body of the screw.

Such flanges are not mere or detached sections, nor yet made to constitute a ring or close band, but form an entire spiral in common with the plate B, and operate much more effectually to concentrate or circumscribe and retain, as a column or confined body having its axis in the same line with that of the operating shaft, the water thrown out by the screw, which not only adds to the efficiency of the propeller but diminishes side wash or action of the water, and this latter advantage is still more perfectly attained by the hollow *c*, between the flanges around the outer edge of the plate or body of the screw, by reason of the diminished velocity of the bottom of the hollow as compared with the outer edges or surfaces of the flanges, which induces suction of the water into the hollow, and causes it to hug or follow the flanged portion of the propeller, as the latter is rotated.

What is here claimed, and desired to be secured by Letters Patent, is—

The spirally arranged flanges *b b*, constructed to form a hollow, *c*, around the outer edge of the spiral plate B, essentially as shown and described.

CHS. ARLEN.
CHS. GAUTSCHI.

Witnesses:

FRED. HAINES,
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