

L. & C. HOWARD.

Improvement in Screw-Propellers.

No. 131,099.

Patented Sep. 3, 1872.

Fig. 1.

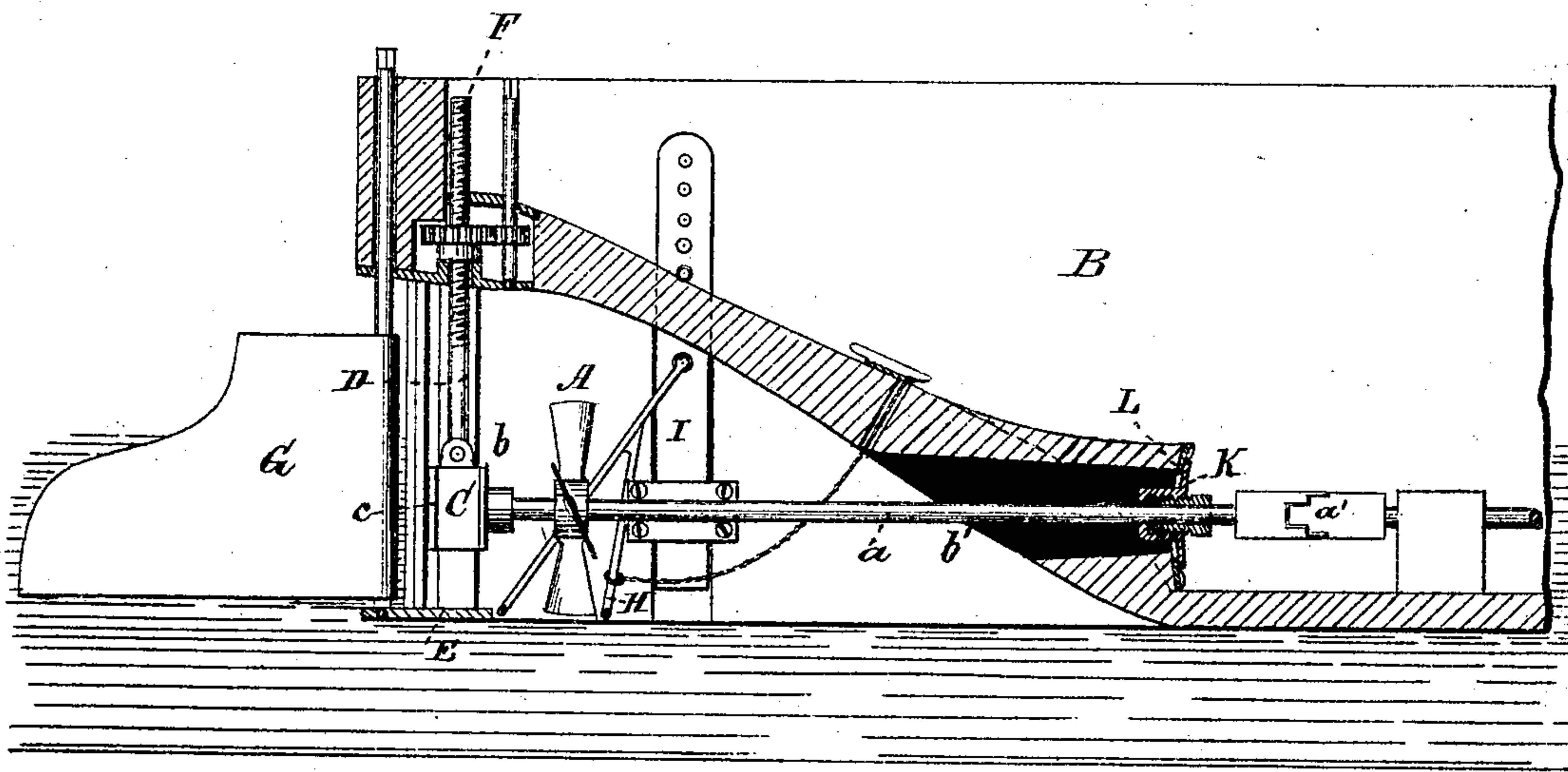
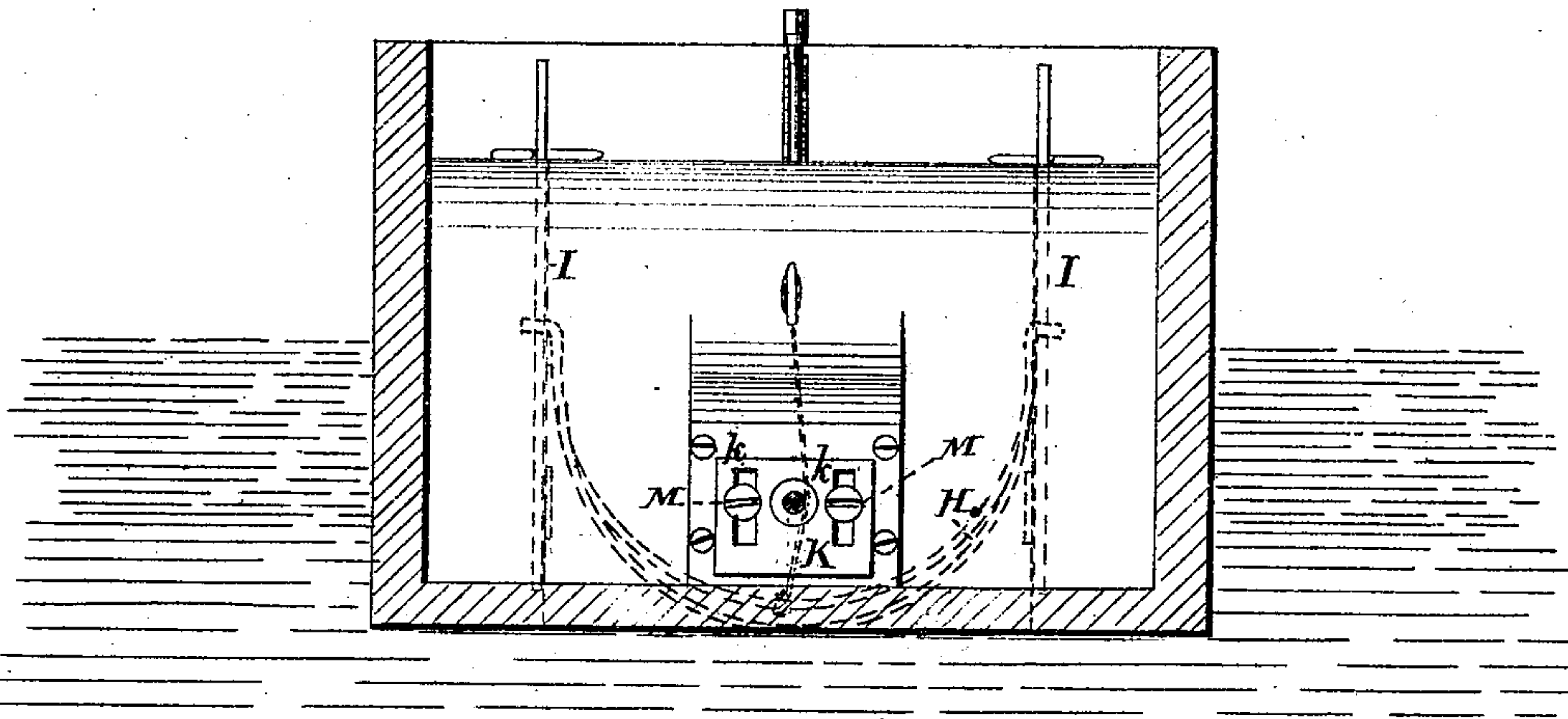


Fig. 2.



Witnesses:

G. Mattings.
Thos. D. W. Curran

Inventor:

Lewis Howard and Chas. Howard

PER

Attorneys.

UNITED STATES PATENT OFFICE.

LEWIS HOWARD AND CHARLES HOWARD, OF WATKINS, NEW YORK.

IMPROVEMENT IN SCREW-PROPELLERS.

Specification forming part of Letters Patent No. **131,099**, dated September 3, 1872.

Specification describing certain Improvements in Boats, invented by LEWIS HOWARD and CHARLES HOWARD, of Watkins, in the county of Schuyler and State of New York.

First, the invention consists in a grass-guard that swings under and slightly in advance of the propeller to depress and remove from the wheel the growth of grass that springs up on the bottom of canals. Secondly, the invention consists in an adjustable bearing-plate on the inside of the boat, which will enable the propeller-shaft to work as nearly as possible in a horizontal plane.

In the drawing, Figure 1 is a longitudinal vertical section. Fig. 2 is a cross-section as seen when looking toward the stern.

A represents an ordinary propeller, located in the cavity *b* of a boat, B. Its shaft *a* is journaled at one end in the oblong slot *b'* of boat and at the other in the bearing-block C. G is the rudder. H is a circular guard, formed of one or more strips or pieces, and pivoted to the upwardly and downwardly adjustable plates I I. The propeller-shaft *a* is provided, within the boat, with a joint, *a'*, in the usual manner and for the ordinary purpose. K is the curved bearing-plate, upon which shaft *a* immediately rests, and which is clamped water-tight against its seat L. This plate K is slotted at *k k* so as to slide up or down on the set-screws M M.

The operation is as follows: When the boat is unloaded, and therefore displaces a slight depth of water, the bearing-block C is elevated to the proper point, thereby raising the propeller, which is thus enabled to act upon the water at the proper elevation. When, however, the boat has been loaded, the said block C is let down and the plate K (within the boat) lowered to bring the propeller-shaft as nearly as possible into a horizontal plane. At the same time the circular guard H is sufficiently depressed to allow it to swing under the propeller and force down the grass, that grows on the bottom of the canals, in advance of the wheel.

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

1. The grass-guard H, constructed substantially as shown, and arranged to swing under and in advance of the propeller, as described.
2. The slotted and adjustable plate K, arranged inside the boat, and applied as and for the purpose set forth.

LEWIS HOWARD.
CHARLES HOWARD.

Witnesses to both signatures:

S. L. ROOD,
GEO. G. FREER.