B. R. COLE.

STEERING APPARATUS FOR CANAL BOATS.

No. 190,283. Patented May 1, 1877.

Fig. 1

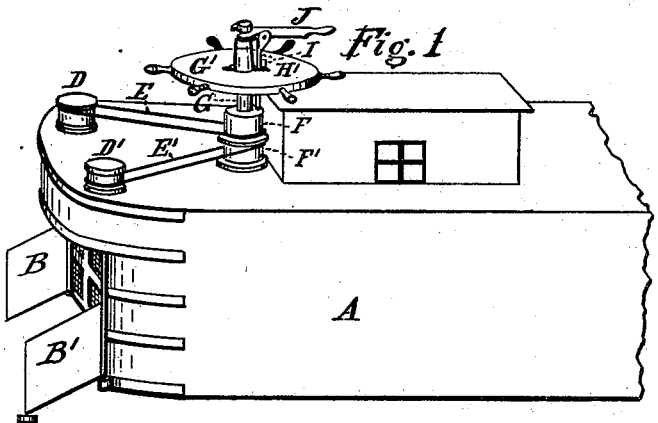


Fig. 2

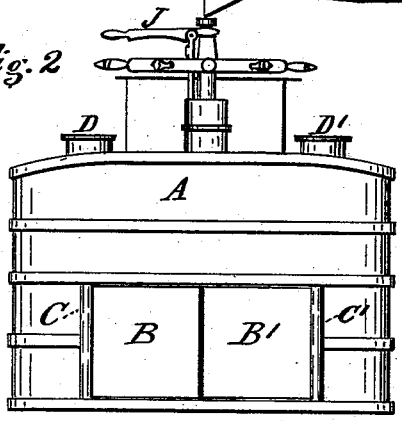


Fig. 3

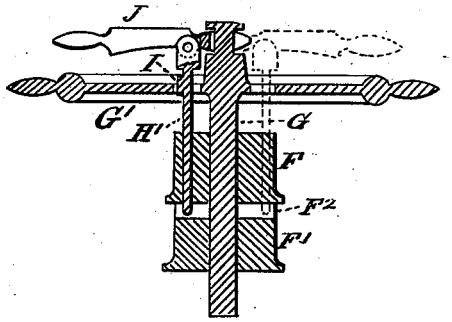


Fig. 4

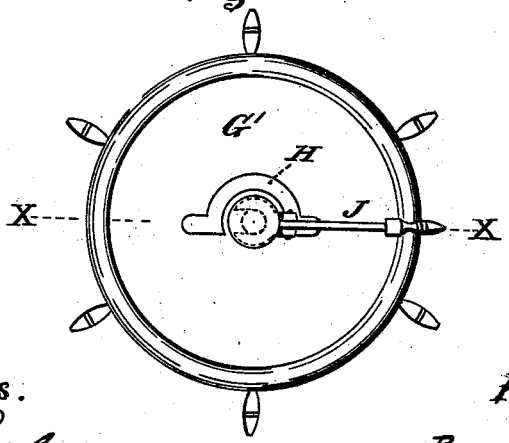
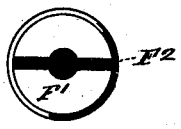


Fig. 5



Witnesses.

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UNITED STATES PATENT OFFICE.

BENJAMIN R. COLE, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO DAVID P. DOBBINS, OF SAME PLACE.

IMPROVEMENT IN STEERING APPARATUS FOR CANAL-BOATS.

Specification forming part of Letters Patent No. **190,283**, dated May 1, 1877; application filed April 6, 1877.

To all whom it may concern:

Be it known that I, BENJAMIN R. COLE, of the city of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Machinery for Steering Boats, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective view of a portion of a canal-boat, showing my invention connected thereto. Fig. 2 is a back view of the same; Fig. 3, an enlarged view of a part of the steering mechanism, showing a section through line *x x*, Fig. 4, all being in section except the changing-lever. Fig. 4 is a top view of the steering-wheel and its operating mechanism, and Fig. 5 represents a top view of the lower steering-drum.

The object of this invention is to afford better facilities for steering canal-boats by extending the blades on either side, as may be required, so as to act on the water outside of the boat instead of that at the stern, which moves forward after the boat, under the influence of a partial vacuum, so as to afford but little hold for the action of the rudder; and, further, to provide the means for controlling the action of the blades, either separately or jointly, so that they may be used either for steering the boat, or both be folded back close to the stern of the boat, so as to prevent them from catching on the miter-sill of a lock while being lowered therein. And the invention consists of two rudders, each provided with a pulley and a cord or chain, in combination with a steering-wheel provided with a tight and loose drum, and a lever for changing the position of one of the rudders, so that both may be moved simultaneously while steering the boat, or both be folded back close to the stern of the same, as will be more clearly hereinafter shown by reference to the drawing, in which—

A represents a portion of a canal-boat; B B′, the steering-blades, having rods or posts C C′ and drums or pulleys D D′. E E′ represent the cords or chains for connecting D D′ with the drums or pulleys F F¹, one of which is loose on the shaft G of the steering-wheel G′, F representing the loose pulley, and F′ the fixed pulley, which is keyed or otherwise rigidly fastened to said shaft. In the wheel G′ is a semicircular opening or slot, H, (shown in Fig. 4,) through which a part of the rod H′, having a projection, I, passes, as shown. It also passes through the loose pulley F, as shown in Fig. 3. The lower pulley F¹ is provided with a slot or groove, F², (shown in Figs. 3 and 5,) into which the lower end of the rod H′ passes. J represents a lever for lifting or lowering H′.

The operation of the invention is as follows: The cords or chains E E′ are arranged, by a pin or other well-known means, so as to prevent their slipping on the pulleys. For ordinary steering, the pulleys F F¹ are locked together, as shown in Figs. 1 and 3, when necessary to fold the blades back, as shown in Fig. 2. The wheel G′ may be turned so as to fold one blade back against the stern. The bolt or rod H′ is then raised by means of the lever J, so as to lift the lower end up out of the slot or groove F² in the pulley F¹, which releases the upper pulley and allows the other blade to be turned back, as shown in said Fig. 2. The dotted lines in Fig. 3 show this reverse position of the lever J and rod H′.

I claim as my invention—

The steering-wheel G′, provided with the lever J, shaft G, and rod H′, in combination with the chains E E′, or their equivalents, pulleys D D′, and rudders B B′, for the purposes described.

BENJAMIN R. COLE.

Witnesses:
C. L. POND,
SIDNEY B. KING.