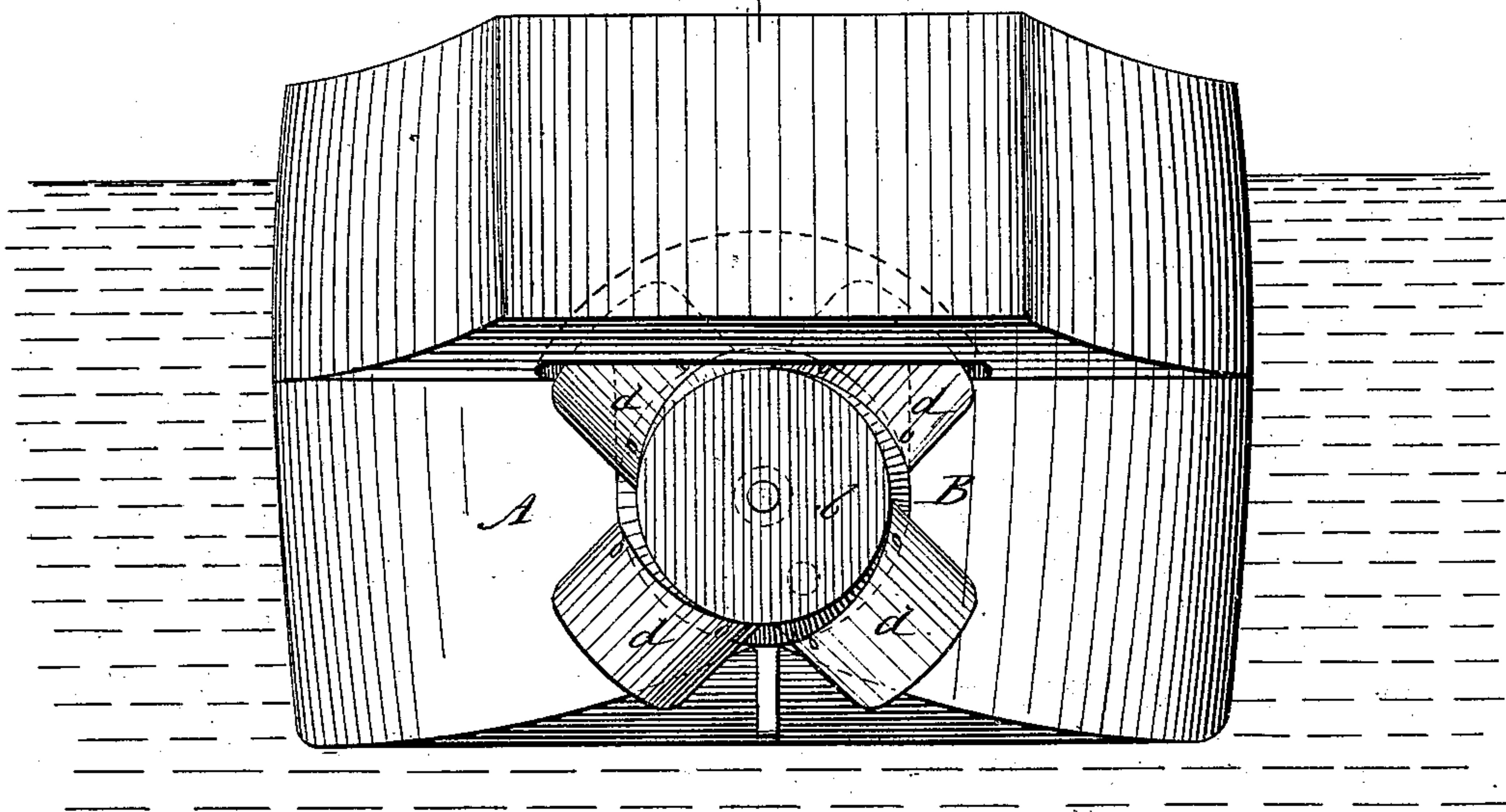


G. W. HALL.  
Propeller for Canal-Boats.

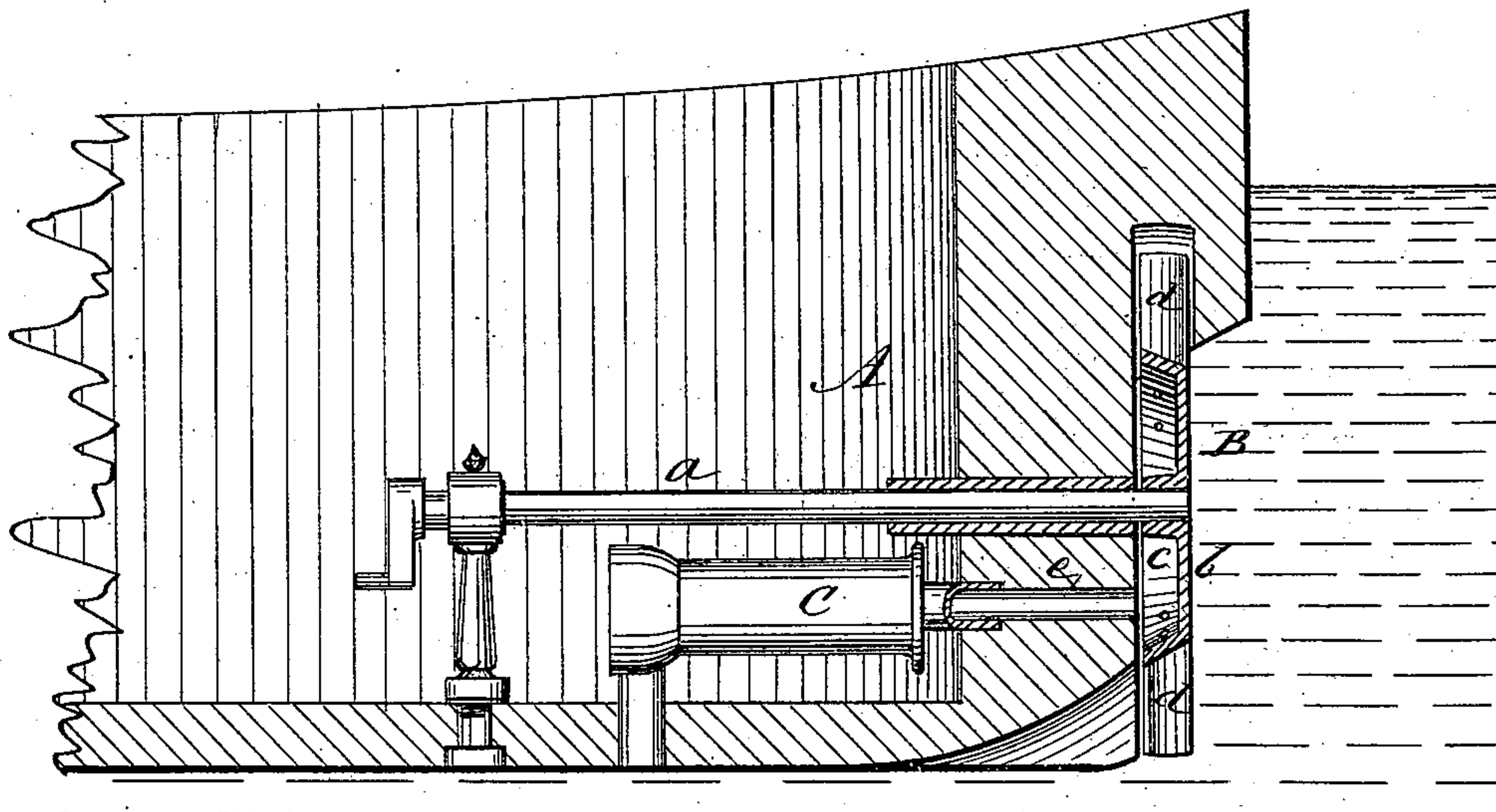
No. 227,245.

Patented May 4, 1880.

*Fig. 1* <sup>x</sup>



*Fig. 2* <sup>x</sup>



WITNESSES:

*C. Norus,*  
*C. Sedgwick.*

INVENTOR:

*G. W. Hall.*

BY

*Munn & Co.*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

GORDON W. HALL, OF HAVANA, NEW YORK, ASSIGNOR TO HIMSELF AND  
ALBERT O. WHITTEMORE, OF SAME PLACE.

## PROPELLER FOR CANAL-BOATS.

SPECIFICATION forming part of Letters Patent No. 227,245, dated May 4, 1880.

Application filed February 17, 1880.

*To all whom it may concern:*

Be it known that I, GORDON W. HALL, of Havana, in the county of Schuyler and State of New York, have invented a new and useful  
5 Improvement in Propellers for Canal-Boats, of which the following is a specification.

The invention consists in a propeller having a hollow portion arranged to turn in the dead water under the stern of boat and connected  
10 by a pipe with a condenser, as hereinafter described. These features will be more particularly described with reference to the accompanying drawings, forming part of this specification, wherein—

15 Figure 1 is a rear elevation of a boat fitted with my improved mechanism. Fig. 2 is a vertical longitudinal section of the stern portion of the boat.

Similar letters of reference indicate corresponding parts.

A is the boat. *a* is the propeller-shaft fitted in the stern, and B is the propeller-wheel upon the shaft *a*.

25 The wheel B consists of the central portion, *b*, formed with the hub *c* and fitted with the blades *d*. The portion *b* is hollow, and is made in the shape of a frustum of a cone or a cylinder, with the end that is placed outward closed.

30 The stern of the boat A is finished off squarely, and the frustum *b* is of such a diameter that when conical its tapering sides are con-

tinuations of the lines of the boat, so that the portion *b* turns in the dead water, while the blades *d* project beyond the lines of the boat  
35 into the solid water, where they have the greatest possible effect.

C represents the surface-condenser of the engine, the discharge-pipe *e* of which extends to the hollow portion *b* of the wheel near the  
40 bottom.

The wheel B, by its revolution, will tend to create a vacuum in the part *b*, which will suck the water from the condenser through the pipe  
45 *e*, and a circulation will thus be kept up in the condenser without the use of a special pump for the purpose, and the power to drive the pump will be saved.

This construction furnishes a propeller especially suitable for canal-boats of ordinary  
50 construction, which will give the most effective application of the power used.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

55 The combination, on a canal-boat, of the hollow propeller B *b* and the condenser C of the engine, the two connected by a pipe, *e*, as and for the purpose specified.

GORDON W. HALL.

Witnesses:

E. A. DE WITT,  
A. G. SAUNDERS.