Keyes P. Cool.

Propeller.

PATENTED JUL 18 1871

117051

Fig. 1

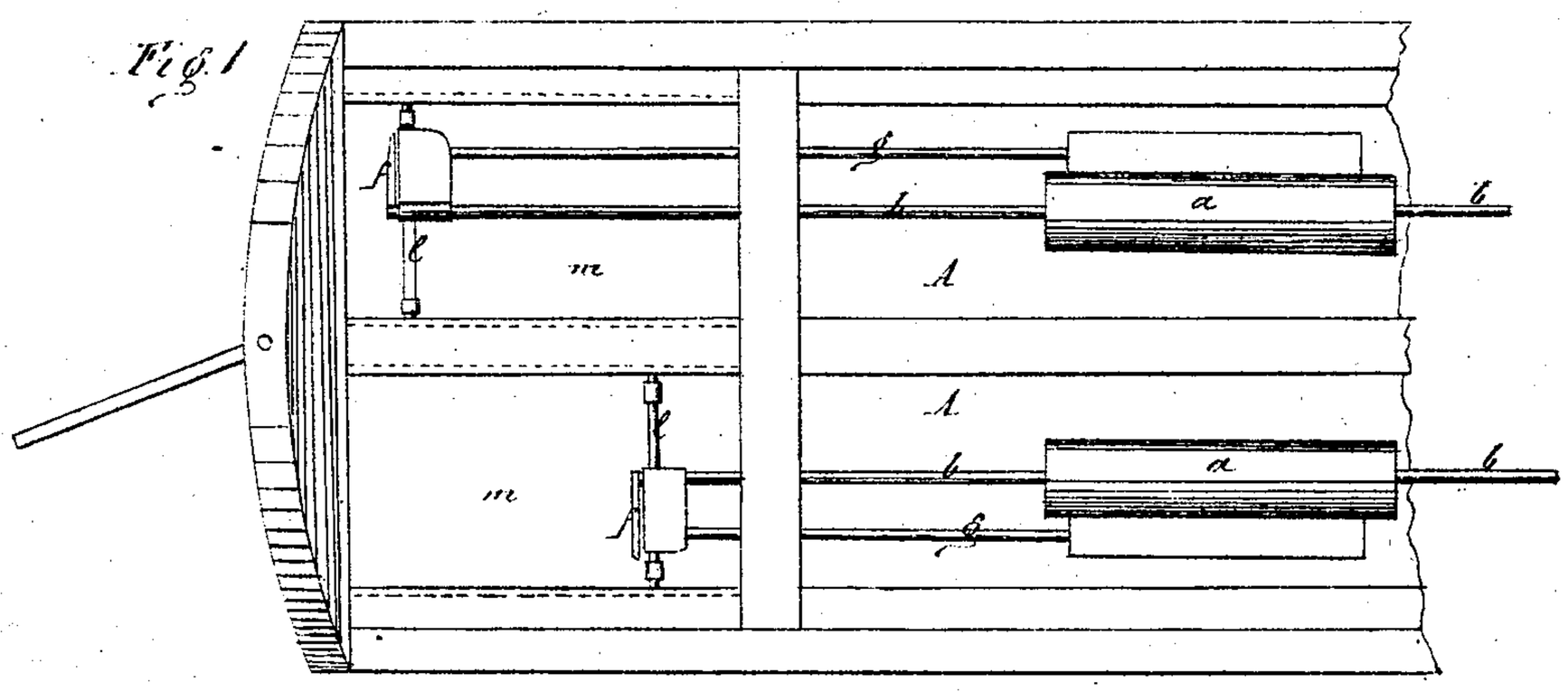


Fig. 2

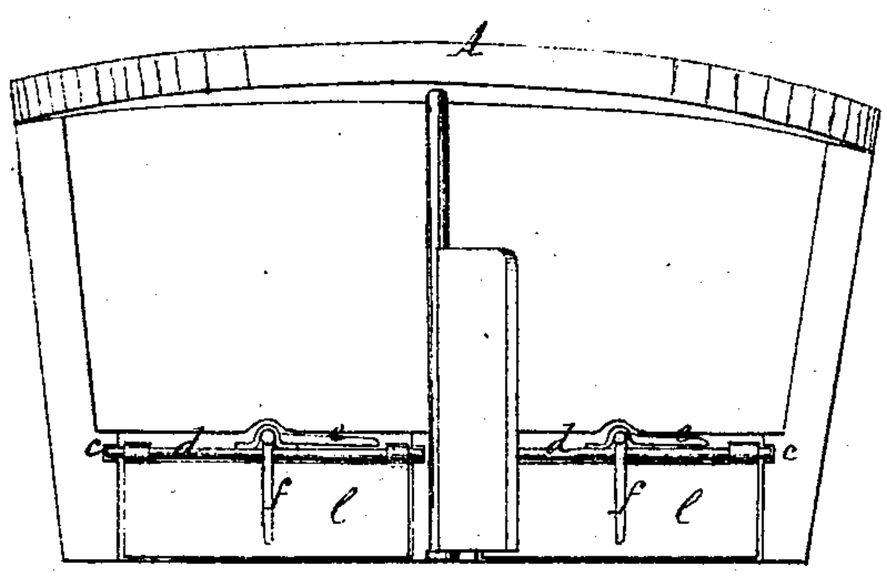
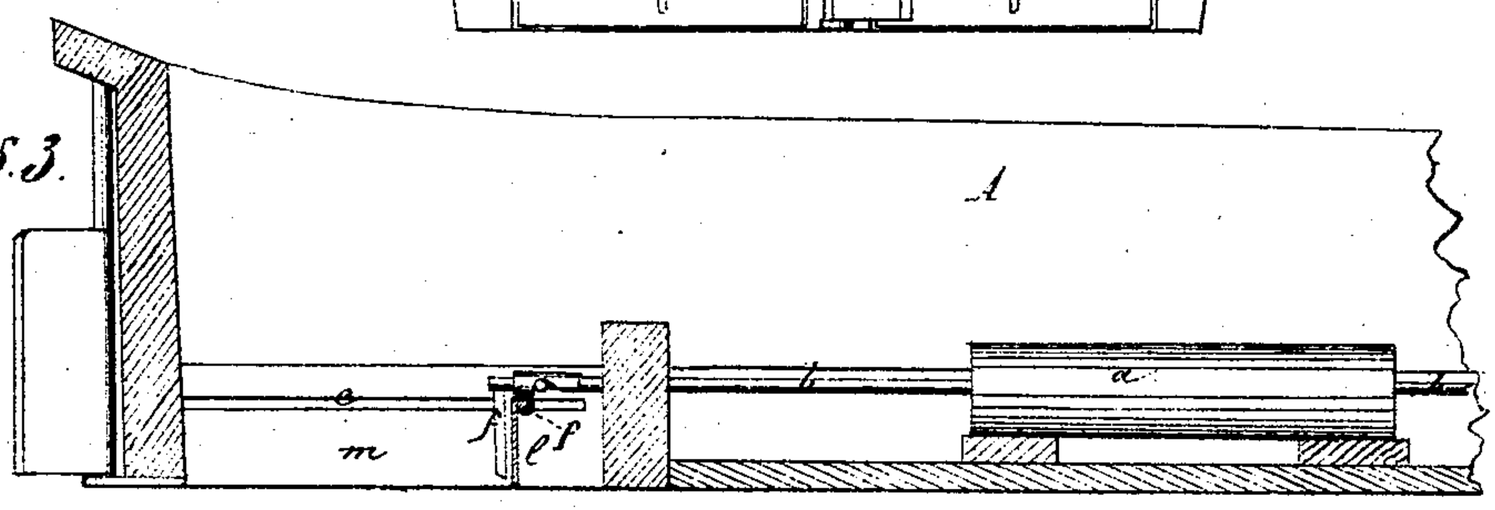


Fig. 3.



Witnesses:

L. F. Street

Thos. G. D. Conrad

Inventor:

Keyes P. Cool.

PER

Munn & Co

Attorneys.

UNITED STATES PATENT OFFICE.

KEYES P. COOL, OF GLEN'S FALLS, NEW YORK.

IMPROVEMENT IN PROPULSION OF VESSELS.

Specification forming part of Letters Patent No. 117,051, dated July 18, 1871.

To all whom it may concern:

Be it known that I, KEYES P. COOL, of Glen's Falls, in the county of Warren and State of New York, have invented a new and Improved Propeller; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a plan view. Fig. 2 is a rear elevation, and Fig. 3 is an elevation longitudinal as to the chamber *m* and transverse as to the float *l*.

This invention relates to a propelling mechanism employing two cylinders and intended to be placed in a horizontal position on the floor of the after-cabin of a canal-boat or other vessel, and in which the piston-rods are directly connected with floats hung to the rear ends of said rods, said floats working in bottomless chambers built at the vessel's stern and open to the water, so that the moving of the floats sternward propels the boat forward, and the moving of the floats forward propels the boat sternward. The invention consists in the combination of certain parts, as specified in the claim.

Referring to the drawing, A is a canal-boat. *a a* are two cylinders, placed in a horizontal position lengthwise upon the boat's bottom, one at each side of the keelson and near the stern, said cylinders being supplied with steam in any suitable manner. *b b* are the piston-rods, the same extending out of the cylinders at both ends of the latter, to their rear extremities horizontal cross-bars *d* being secured, which cross-bars stand crosswise of bottomless chambers *m*, open at their rear ends and built in the vessel's bottom, and at her stern horizontal grooves *c* being formed lengthwise of the sides of each chamber *m*, which grooves the ends of the cross-bars *d* occupy, the latter being guided, as they reciprocate backward and forward, by the grooves. Floats *l* are hung to the cross-bar *d*, said floats being of a length a little less than the width of the chambers *m*, and of the same depth as the chambers The piston-rods *b* are each provided with two radial arms, *e f*, projecting at different angles, one placed in front of the blade and the other in rear of it. Toothed wheels are secured upon the piston-rods in front of the cylinders, and any sufficient means of turning the piston-rods by means of said toothed wheels is provided. When the boat is to be propelled forward the arms *e* should be turned into a vertical position in front of the floats, the arms *f* then standing clear of the floats. The piston-rods moving backward, the floats are driven in a vertical position through the water, thus driving the boat forward. The piston-rods moving forward, the floats rise to the surface of the water and offer no resistance. To back the boat, the pins *e* should be turned up clear of the floats, by which movement the pins *f* are brought down in rear of them. Then, when the floats are drawn forward, the pins *f* hold them vertical in the water and the boat is forced backward, and when the floats are driven backward they rise to the surface and meet with no resistance. The rods *g* are those which operate the valves. By the chambers *m* the floats are wholly protected from accident, and also made to act against a body of unbroken water, from which they derive the utmost possible resistance. The water is also forced backward in a line with the stern of the boat, and thus prevented from washing against the banks of the canal.

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

The combination of floats *l*, rotary piston-rods *b*, arms *e f*, and cross-bars *d*, as described.

KEYES P. COOL.

Witnesses:

F. W. ROBINSON,

L. A. ROBINSON.