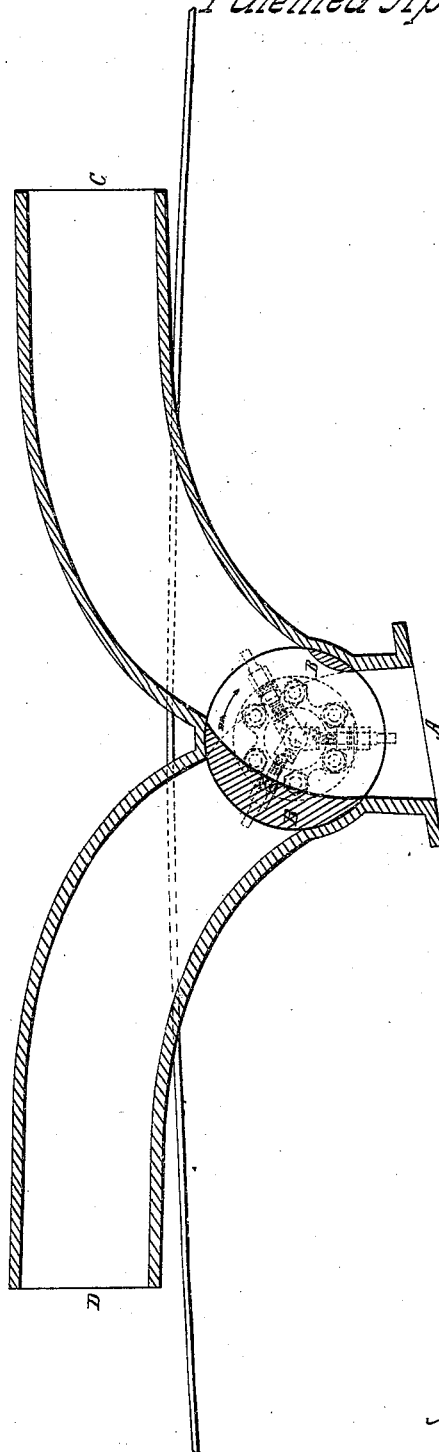


M. W. Ruthven. Sheet 1, 2 Sheets.
Hydraulic Propeller.

No 53937

Patented Apr. 10, 1866

Fig. 1.



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M. W. Ruthven. Sheet 2. of 2. Sheets.

Hydraulic Propeller.

N^o 53,937.

Patented Apr. 10, 1866.

Fig. 2.

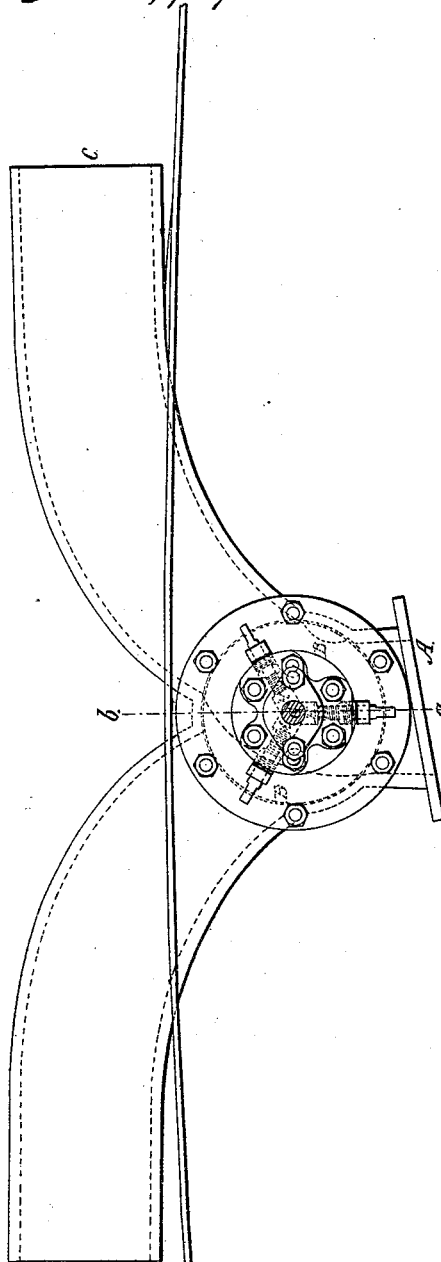
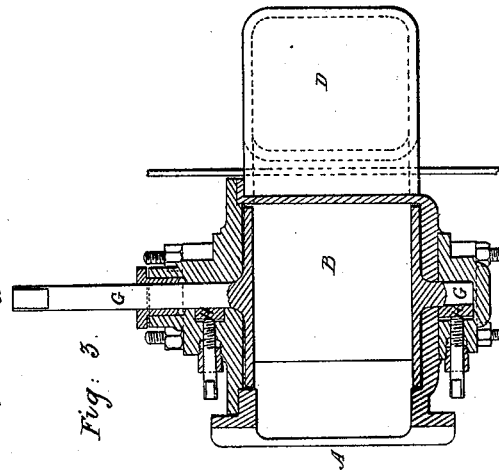


Fig. 3.



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UNITED STATES PATENT OFFICE.

MORRIS WEST RUTHVEN, OF MIDDLESEX, ENGLAND.

IMPROVED SLUICE FOR PROPELLING VESSELS.

Specification forming part of Letters Patent No. 53,937, dated April 10, 1866.

To all whom it may concern:

Be it known that I, MORRIS WEST RUTHVEN, of Harlow Villas, East India Road, in the county of Middlesex, England, engineer, a subject of the Queen of Great Britain, have invented or discovered certain new and useful Improvements in Propelling Vessels; and I, the said MORRIS WEST RUTHVEN, do hereby declare the nature of the said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof—that is to say:

This invention has for its object improvements in a method of propelling vessels described in the specification of a patent of the United States, granted to me on the 22d day of May, 1849, and it is applicable to the propelling of vessels where water is constantly pumped by one or more rotating or centrifugal pumps to outlets or passages on either side of a vessel, the centrifugal pump or pumps being situated most conveniently intermediate of the two sides of the vessel. Ordinarily, it is preferred that on each side of a vessel there should be two tubular passages—one opening out in a direction toward the stem of the vessel and the other opening out in a direction toward the stern of the vessel—and where the two are connected to a common supply-pipe from the rotating or centrifugal pump or pumps there is applied a rotating sluice, which is preferred to be cylindrical, but it may be somewhat conical. This rotating sluice is closed at both ends, and it is also closed on one side to such an extent that, when the closed side is turned opposite either of the tubular passages, the way through that passage will be closed against the passage of water and the water will flow freely through the other outlet-passage. The rotating sluice turns on an axis at its two ends so that the sluice can be readily turned to allow the water to pass to either of the tubular outlet passages and so as to produce either stem or stern way. It is not necessary that the rotating sluice should fit truly water-tight. On the contrary, it is desirable that the rotating sluice should fit freely, as any moderate leakage is of less importance than the free and ready capability of rotating the sluice so as to change the direction of the water in passing from the rotary or centrifugal pump or pumps through the side outlets.

Having thus stated the nature of my said

invention, I will proceed more fully to describe the manner of performing the same.

In the drawings, Figure 1 shows a horizontal section through the sluice-valve and the water passages on one side of the vessel. The other side is similarly fitted. Fig. 2 shows a plan. Fig. 3 shows a vertical section through the line *a b* in Fig. 2.

G is the axis of the rotating sluice, to which the power is applied to turn it. H H H are bearings with adjusting-screws so as to enable the sluice to be turned with as little friction as may be. The sluice is not to fit the interior of the passage closely, but is to come as near to it as may be without touching the sides thereof or rubbing against the same. By employing rotating sluices, as herein described, there will be greater convenience in the management or maneuvering and steering of a vessel, as well as in propelling the same forward or backward.

When at work the water comes by the passage A from the supply kept up by the pumps and in the position of the rotating sluice, shown in the drawings, Fig. 1, the water will be driven out at the outlet C.

When it becomes necessary to change the direction of the flow of water the sluice B is to be turned in the direction of the arrow till the solid part of the sluice comes into position across the outlet passage C, as shown by dotted lines, and then the outlet D will come into action.

Having thus described the nature of my invention and the manner of performing the same, I would state that the peculiarity thereof consists in—

The employment, in the propelling of vessels, of rotating sluices, such as are herein described, each in combination with two outlet-passages, the sluice in each case being arranged to turn with its axis while the periphery and ends of the sluice are free as may be from contact with the inclosing-surfaces of the chamber in which the sluice is contained, by which arrangement the sluice may be turned comparatively free from friction, and consequently requires but little power to turn it.

M. W. RUTHVEN.

Witnesses:

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JNO. ALCOCK.

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