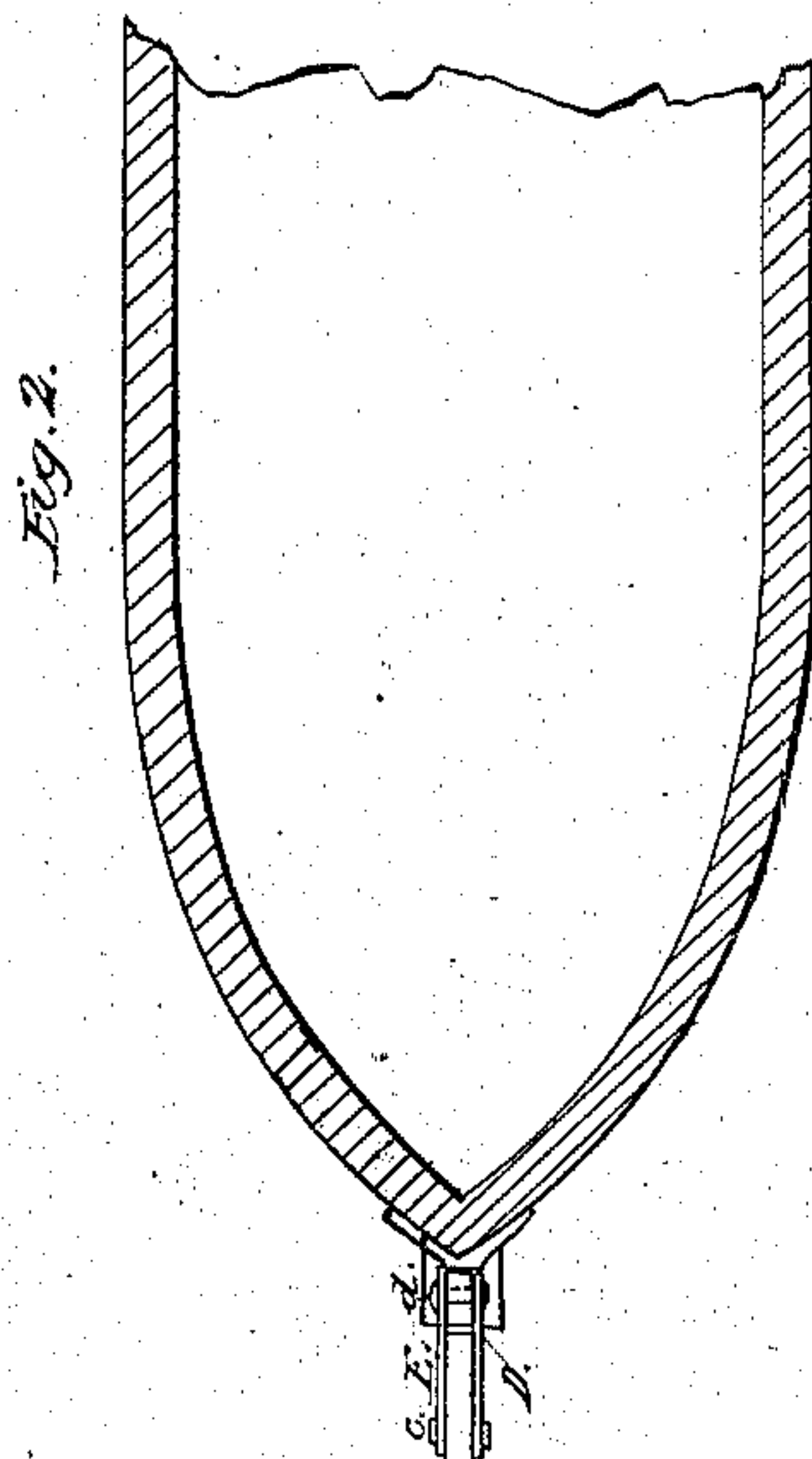
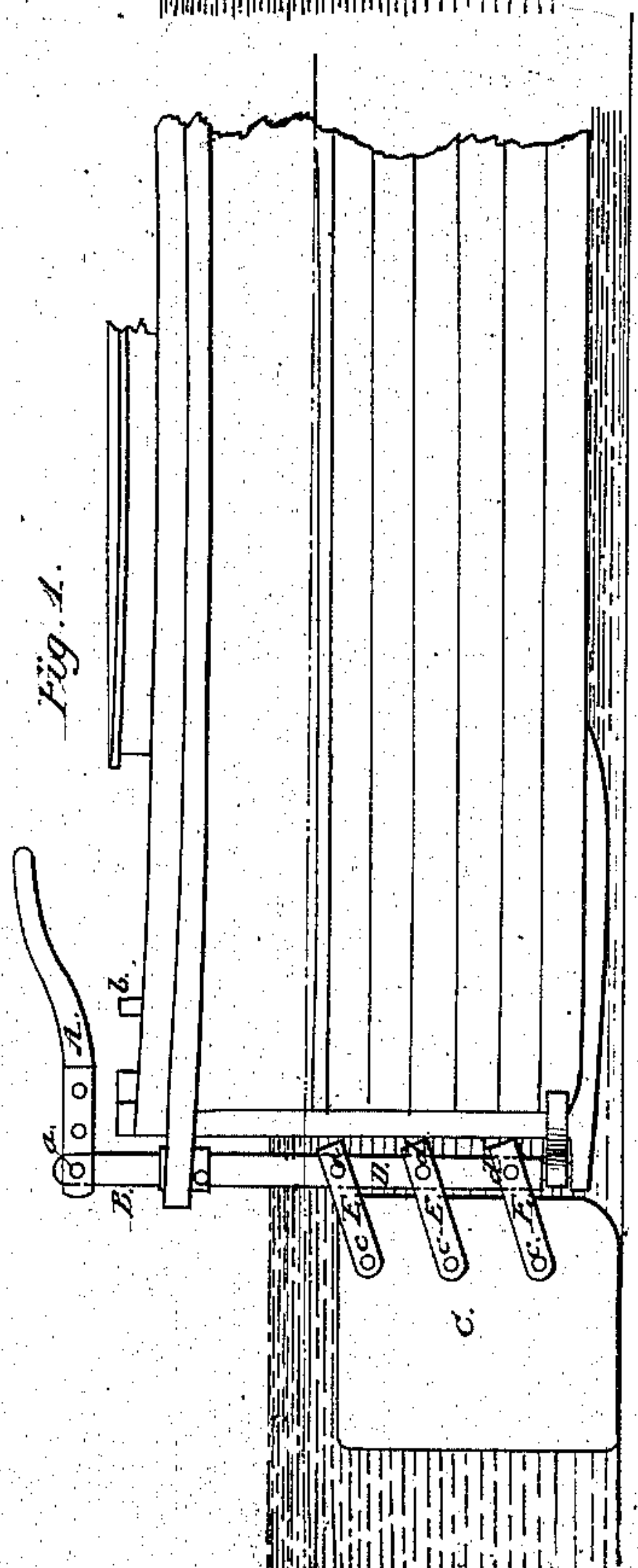
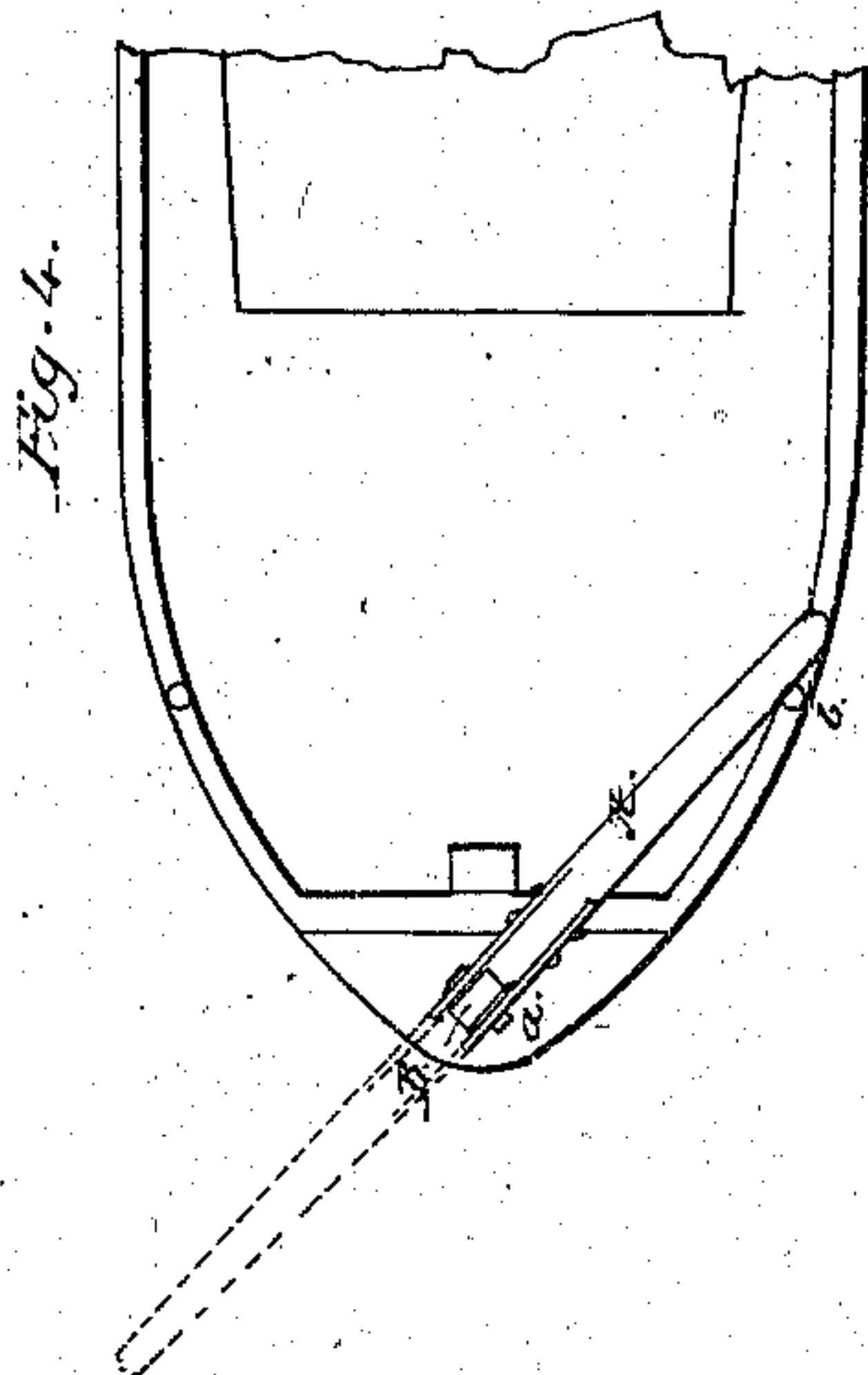


Steering.

Patented May 14, 1861.



Witnesses;
J W Coombs
R A Spencer

Inventors;
John McEausland
Jefferson McEausland
James McEausland
per, Munin & Co Attorneys

UNITED STATES PATENT OFFICE.

JOHN McCAUSLAND, JEFFERSON McCAUSLAND, AND JAMES McCAUSLAND, OF RONDOUT,
NEW YORK.

STEERING APPARATUS.

Specification of Letters Patent No. 32,296, dated May 14, 1861.

To all whom it may concern:

Be it known that we, JOHN McCAUSLAND, JEFFERSON McCAUSLAND, and JAMES McCAUSLAND, all of Rondout, in the county of Ulster and State of New York, have invented certain new and useful Improvements in the Steering Apparatus of Canal-Boats and other Vessels; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 represents a side elevation of our invention showing the rudder turned out in line with the keel or longitudinal center of the boat. Fig. 2 is a horizontal section of the same. Fig. 3 is a side elevation of the same, showing the rudder turned close up to the side of the boat. Fig. 4 is a plan or top view of the same.

Similar letters of reference in all the figures indicate corresponding parts.

When a canal boat enters a lock, it is necessary to turn the rudder in close to the side of the boat, in order to prevent it sustaining any injury by the closing of the lock, and if the rudder is brought in this position, shown in Fig. 3 of the drawing, the tiller, when the same is rigidly attached to the rudder head, assumes a position as shown in red outlines in Fig. 4; in this position the tiller is liable to come in contact with and to be injured by the closing lock, and for this reason it has become a general practice to attach the same to the rudderhead in such a manner that it can be readily unshipped and the rudder, in order to retain it in its position close up to the side of the vessel, is secured by means of ropes during the time the boat is in the lock. This operation not only requires much time and labor, but the fact that the tiller is placed loosely on the rudderhead, often proves dangerous to the helmsman, it being liable to unship spontaneously and when least expected. These difficulties we have obviated by securing the tiller A to the rudderhead B by means of a pivot *a* in such a manner that it can be reversed without al-

lowing the same to become detached from the rudderhead. When the boat is under way, the tiller is brought into the position shown in Fig. 1 and the rudder is operated in the ordinary manner. But when the boat enters a lock, the rudder is brought close up to the side of the boat and the tiller is now reversed and brought in a position as shown in Figs. 3 and 4. In this position it catches behind a pin or stud *b* that is firmly inserted into the edge of the boat and the rudder is now firmly retained in its position close to the side of the boat without the necessity of using ropes or other means to secure the same. Both the rudder and the tiller are thereby saved from injury and as soon as the boat is out of the lock, the tiller is brought back to its original position, the rudder is turned out and the boat proceeds on its way without delay.

Another disadvantage in the operation of the rudder arises from the difference of the draft of canal boats and other vessels calculated to run in shallow waters. When the vessel is unloaded and consequently draws but little water, such a small portion of the rudder is immersed that it is impossible to steer the vessel and it has therefore become a common practice to lengthen the lower part of the rudder by attaching to it a board exceeding in length the width of the rudder. By thus increasing the length of the rudder, the length of the boat has to be decreased or said board has to be so arranged that it can be unshipped or turned. These difficulties we have avoided by attaching the rudder C to the post D by means of clasps E, which are attached to the rudder by pivots *c* and to the post by pivots *d* in such a manner that the rudder is free to move up and down in a direction parallel to the post D while at the same time the clasps compel it to rotate with said post. If the boat is light so that it draws but little water, the rudder C sinks down by its own gravity, carrying its lower edge below the bottom of the boat, and giving to it sufficient dip to govern the boat. On the other hand when the boat is loaded, the

rudder C will be buoyed up by the water itself and it will only retain just dip enough to govern the boat without any unnecessary effort of the helmsman.

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

The arrangement of the pin or stud b in combination with the hinged reversible tiller

A as and for the purpose shown and de- 10 scribed.

JOHN McCAUSLAND.
JEFFERSON McCAUSLAND.
JAMES McCAUSLAND.

Witnesses:

JOHANNIS D. HAS BROUCK,
GEO. C. WOOLSEY.