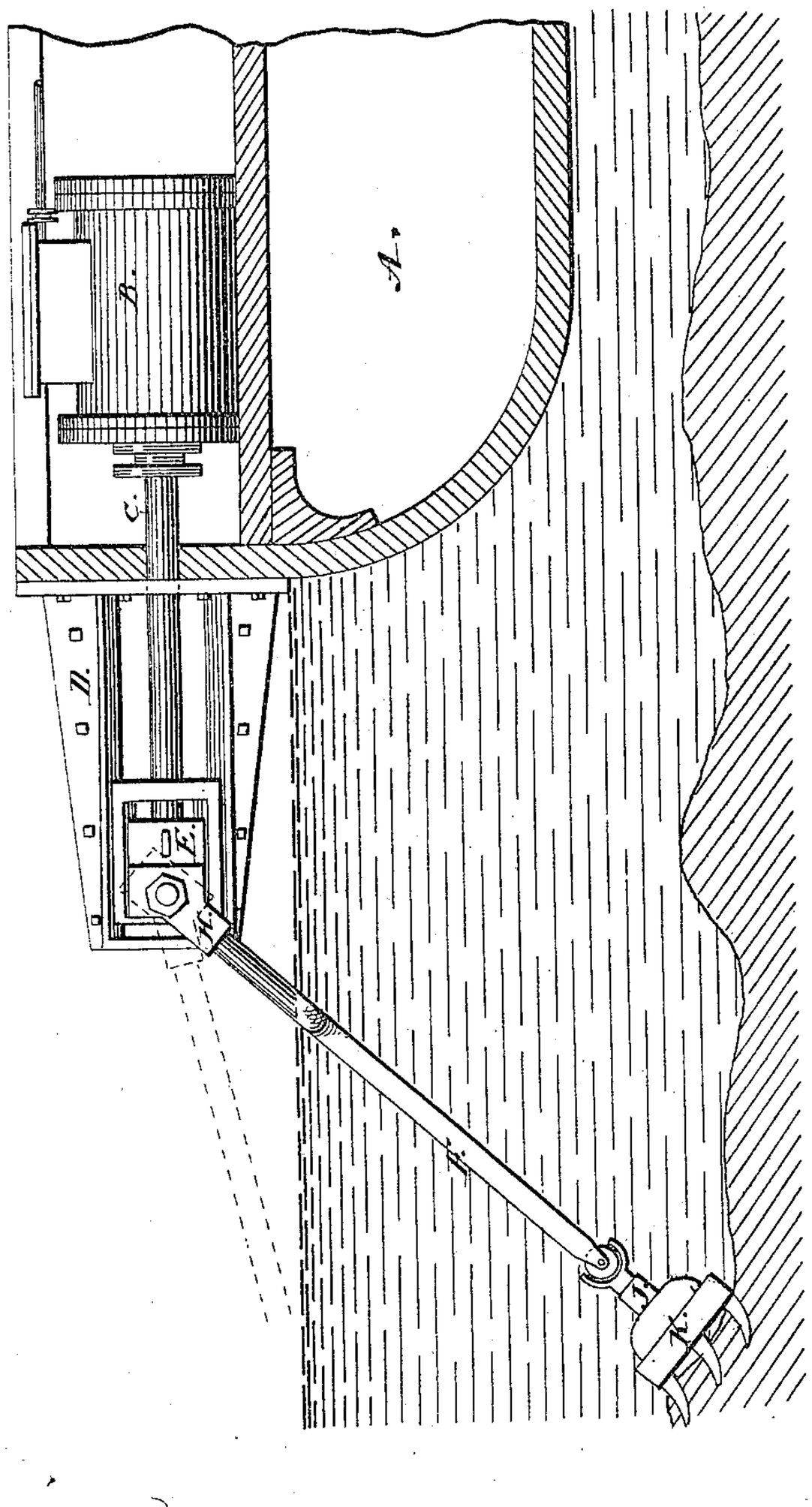
2 Sheets--Sheet 1.

A. AMES.

Propelling Canal-Boats.

No. 134,504. Patented Jan. 7, 1873.

Fig 1.



Witnesses.

James L. Ewing
Edw. W. Donn

Inventor.

Albert Ames.

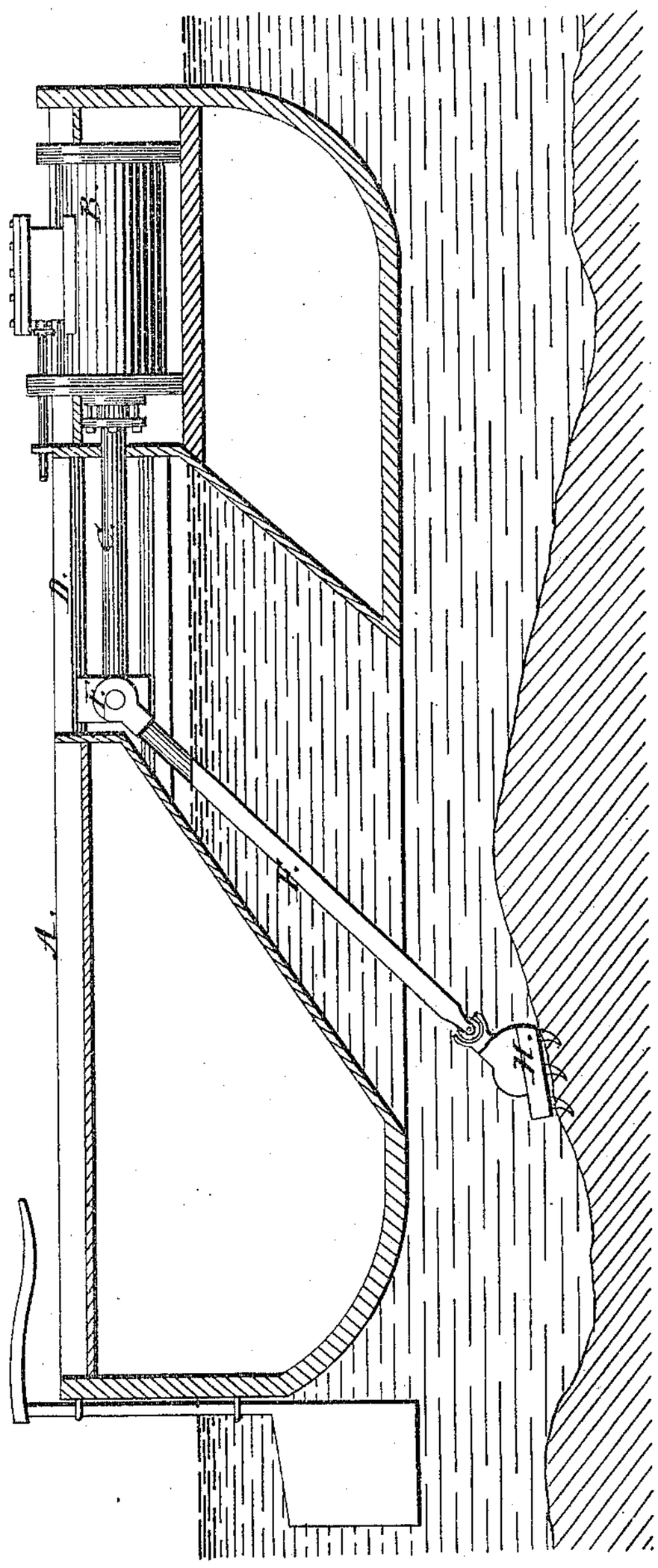
2 Sheets--Sheet 2.

A. AMES.

Propelling Canal-Boats.

No. 134,504. Patented Jan. 7, 1873.

Fig. 2.



Witnesses.

Samuel Greene
Edw. W. Dorsey

Inventor.

Albert Ames.

UNITED STATES PATENT OFFICE.

ADELBERT AMES, OF NATCHEZ, MISSISSIPPI.

IMPROVEMENT IN PROPELLING CANAL-BOATS.

Specification forming part of Letters Patent No. **134,504**, dated January 7, 1873.

To all whom it may concern:

Be it known that I, ADELBERT AMES, of Natchez, in the county of Adams and State of Mississippi, have invented certain Improvements in the Mode of Propelling Boats, of which the following is a specification:

The object of my invention is to provide a simple and effective means of propelling navigable vessels on canals and other shoal water-courses, by applying the power of the engine to and through mechanism which shall act against a solid fulcrum, and in such a way that boats may pass each other without the obstruction or detention usually caused by dropping the tow-line of one or another of the boats. To this end my invention consists in the combination, with an engine, of a push rod or pole and a shoe armed with projections or spikes, said shoe being connected with the push-pole by a ball-and-socket or universal joint, all as will be hereinafter more particularly described in connection with the drawing, in which—

Figure 1 is a central section of a boat, having a well through the middle thereof, showing the propelling engine and mechanism in elevation. Fig. 2 illustrates substantially the same mechanism arranged at the stern of a boat.

It is obvious that the push-poles may be arranged at the sides or in any relation with the boat, and though a reciprocating-engine, such as illustrated, is preferred by me, any other which may in practice be found desirable may be used. An oscillating engine may be found desirable, in which case the push-pole may be merely a continuation of or attachment to the piston-rod, and used without guides. The engine may be arranged either horizontally or at any desired angle.

A represents a boat; B, the steam-cylinder; C, the piston-rod; D, a guide-frame, in which a traversing cross-head, E, works for supporting the end of the piston-rod. To the end of the piston-rod or its cross-head is pivoted the push rod or pole F, and to the lower end of said pole F is coupled, by means of a ball-and-socket or universal joint, the shoe H, armed with spiked projections, as shown.

The shoe should have a sufficient area to prevent its being pressed into the soil, and may be varied according to the nature thereof. Said shoe may also have a toe, which is turned up to prevent its catching during the forward movement thereof.

The object of coupling the push-rod and shoe by a universal joint is that the shoe may catch and hold against the earth, however uneven the same may be either in the line of the motion of the boat transversely or at any angle thereto. As the piston reciprocates the push-rod is moved correspondingly, and is first drawn along and then forces the boat forward as the piston is driven out.

Having thus fully described my invention, what I claim as new is—

The combination, substantially as described, of an engine, a push-pole, and spiked shoe, the shoe being connected by a universal joint, as specified.

ADELBERT AMES.

Witnesses:

V. D. STOCKBRIDGE,

BENJ. F. BUTLER.