

J. J. VAN RIETSCHOTEN & W. HOUWENS.

DREDGING APPARATUS.

No. 184,121.

Patented Nov. 7, 1876.

Fig: 1.

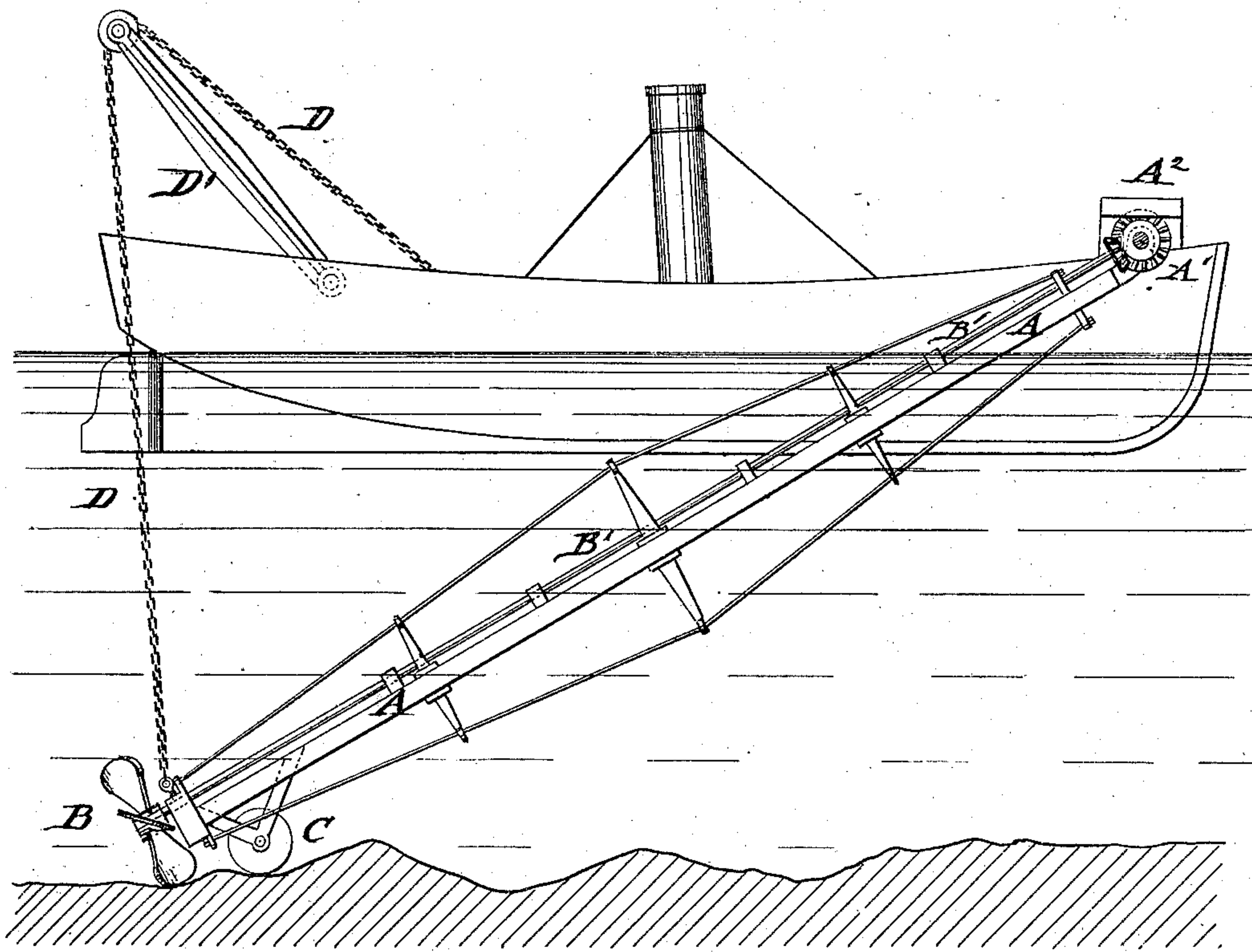
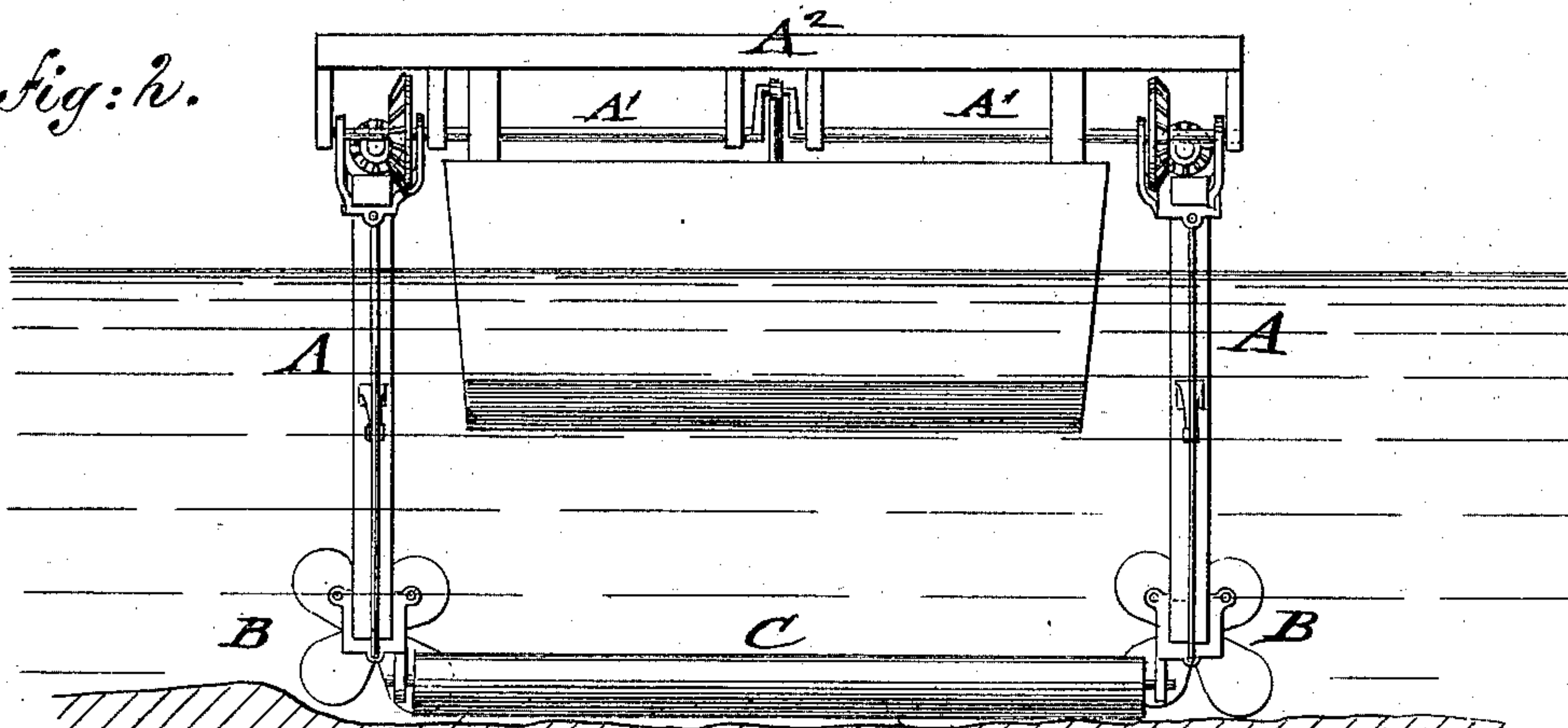


Fig: 2.



WITNESSES:

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UNITED STATES PATENT OFFICE

JAN JACOB VAN RIETSCHOTEN AND WILLEM HOUWENS, OF ROTTERDAM,
NETHERLANDS.

IMPROVEMENT IN DREDGING APPARATUS.

Specification forming part of Letters Patent No. **184,121**, dated November 7, 1876; application filed
June 26, 1876.

To all whom it may concern:

Be it known that we, JAN JACOB VAN RIETSCHOTEN and WILLEM HOUWENS, of Rotterdam, Netherlands, have invented a new and Improved Apparatus for Removing Sand Banks, Bars, &c., of which the following is a specification:

In the accompanying drawing, Figure 1 represents a side elevation of my improved apparatus for removing sand banks, bars, &c., in rivers; and Fig. 2 is an end view of the same.

Similar letters of reference indicate corresponding parts.

The invention has for its object to provide improved mechanical appliances for removing sand banks and bars, and deepening water-courses, rivers, canals, &c.; and it consists of an improvement in propellers driven by suitable motive power, and working partially in the material or sand-bank to be removed, so causing whirlpools, and bringing the mud or sand into a state of suspension in the water, and employing the current to carry away the material thus brought into suspension into deep water. The propellers are carried at the ends of beams, which, at their opposite ends, are hung to a lateral frame of a barge or vessel. The ends of the beams carry back of the propellers rollers to run upon the mud or sand and prevent the propellers and beams from entering too deeply into it.

The propellers and beams may be lifted by chains or otherwise, to be then used simply for propelling the vessel, which may thus be used in broken water, where the use of an ordinary dredging-machine is impossible.

In the drawing, A A are the beams, of suitable construction and length, that are hung at the upper ends to a shaft, A¹, that is supported in bearings of a lateral frame, A², of a suitable barge or vessel, and driven by a steam-engine on board of the same. The

driving-shaft A¹ revolves, by beveled gear-wheels, the shafts B', that turn in bearings of the beams, and are provided at their lower ends with a propeller or propellers, B. Each propeller or stirrer B consists of a four-bladed screw of unusual strength, with two blades set in advance of, and being somewhat longer than, the other two. The propellers are lowered to the bottom of the river, canal, or other water-courses, and then revolved to work on the sand-bank or material to be removed, so to stir up the same and bring it into a sufficient state of suspension in the water to admit of its being carried away by the current. A roller or rollers, C, are arranged back of the propellers, turning in suitable bearings of the beams A, to prevent the propellers from entering too deeply into the mud so as to break or get stuck.

The propellers and beams are lifted by means of chains D and crane D' into position alongside of the vessels, when the work of removing the sand is to be interrupted, the propellers serving then to move the vessel.

The lifting-chain is taken in by a steam-winch, the propellers and beams being in this manner readily raised for moving and lowered for work. Guard pieces or bands at the sides of the vessel serve to guide the beams as they are raised or lowered.

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

The combination of the swinging beams, arranged at the side of a vessel, with propellers and rollers back of the same, to control the depth to which the propellers may penetrate, substantially as specified.

JAN JACOB VAN RIETSCHOTEN.
WILLEM HOUWENS.

Witnesses:

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