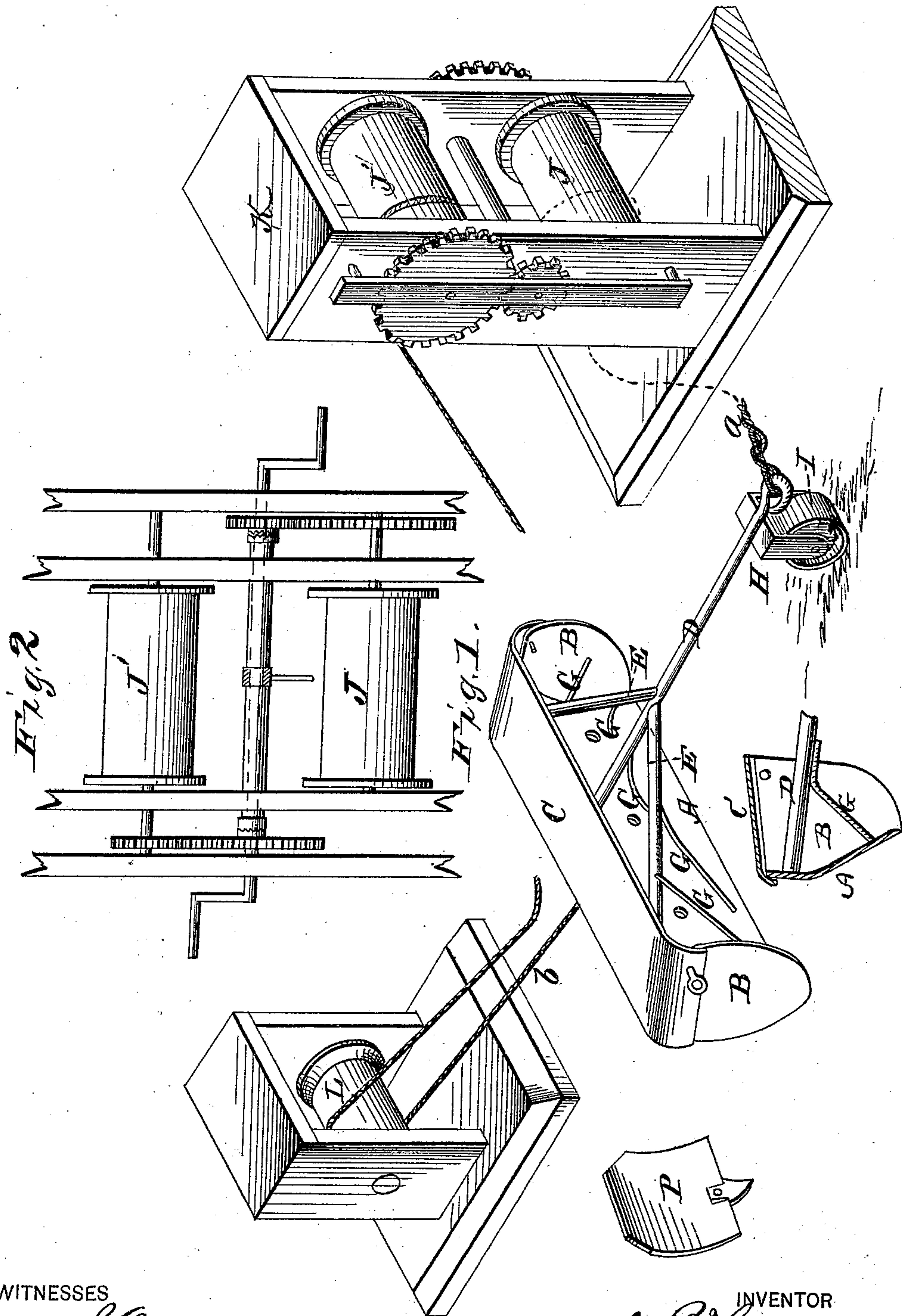


J. T. HAM.
DREDGING-MACHINE.

No. 184,863.

Patented Nov. 28, 1876.



WITNESSES
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JOEL T. HAM, OF LIBERTY, INDIANA.

IMPROVEMENT IN DREDGING-MACHINES.

Specification forming part of Letters Patent No. 184,863, dated November 23, 1876; application filed September 9, 1876.

To all whom it may concern:

Be it known that I, JOEL T. HAM, of the town of Liberty, Union county, and in the State of Indiana, have invented certain new and useful Improvements in Dredge-Machine or Submarine Scraper; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the arrangement of a scraper of peculiar construction, that is designed to operate on dry land or in water at any desired depth, for the purpose of opening channels through sand or gravel bar in rivers, or removing obstructions to the entrance of harbors, and for building levees and embankments, the operation of the scraper being so controlled that it can be sent away empty half a mile, and be caused to gather a load, and return and deposit the load at any intermediate point.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, which fully illustrates my invention.

A represents the scraper, made of a plate of steel or iron of any suitable dimensions, bent and shaped so that the lower or cutting edge will stand at an angle of about twenty degrees when the top half stands vertical. To each end of this plate is fastened an end piece, B, which extends forward and flares outward, the bottom corners being rounded up, so that it will not fasten on any obstruction. The forward top corners should stand higher than the top part of the main plate, to which plate is fastened a cover, C, extending the whole length and width, and covering the end pieces, to which it is fastened.

In the center of the scraper A, a suitable distance below the upper edge, is fastened the iron tongue D, and braced by means of the hounds E E. Braces G G also extend from the tongue and hounds to the scraper and end pieces, as shown. The front end of the tongue D is provided with a frame, H, in which is mounted a wheel or roller, I of suitable di-

mensions. A wire cable, *a*, is attached to the end of the tongue D, and passes onto a spool, J, mounted in a frame, K. This spool is calculated to take in half a mile of cable and draw in the scraper and load. To send back the scraper for another load, there is another spool, J', of the same size, placed above the spool J in the frame K. These two spools are so geared that while one winds in its cable the other is running loose.

A wire cable, *b*, is attached to the top spool J', and then passed over a spool, L, which is to be placed on a securely-anchored boat, a suitable distance from the spool J'. The end of the cable *b* is then brought back and attached to the back part of the scraper. By winding up the cable *b* on the spool J' the scraper will be taken back for another load.

The spools are to be worked by two steam-engines placed on the same platform with the spools. The spools J J' are connected by gear-wheels and clutches, as shown, whereby, when the power is to be applied to either spool, the other may be thrown out of gear, and run loose.

When excavations are to be made in soil where there are cobble-stones and bowlders a strong rake will be used instead of the scraper, and, when working in hard ground or gravel, small shovel-plows P are bolted to the forward part of the scraper.

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

The combination, in a dredging-machine, of the plate A, bent as shown, provided with the end pieces B B, the top plate C, connected over the parts A B, the tongue D, having hounds E E, and secured to the plate A, and end pieces B B, by the braces G G, and having its front end supported upon the roller I, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of February, 1876.

JOEL T. HAM.

Witnesses:

HENRY MILLER,
F. L. OURAND.