

No. 612,777.

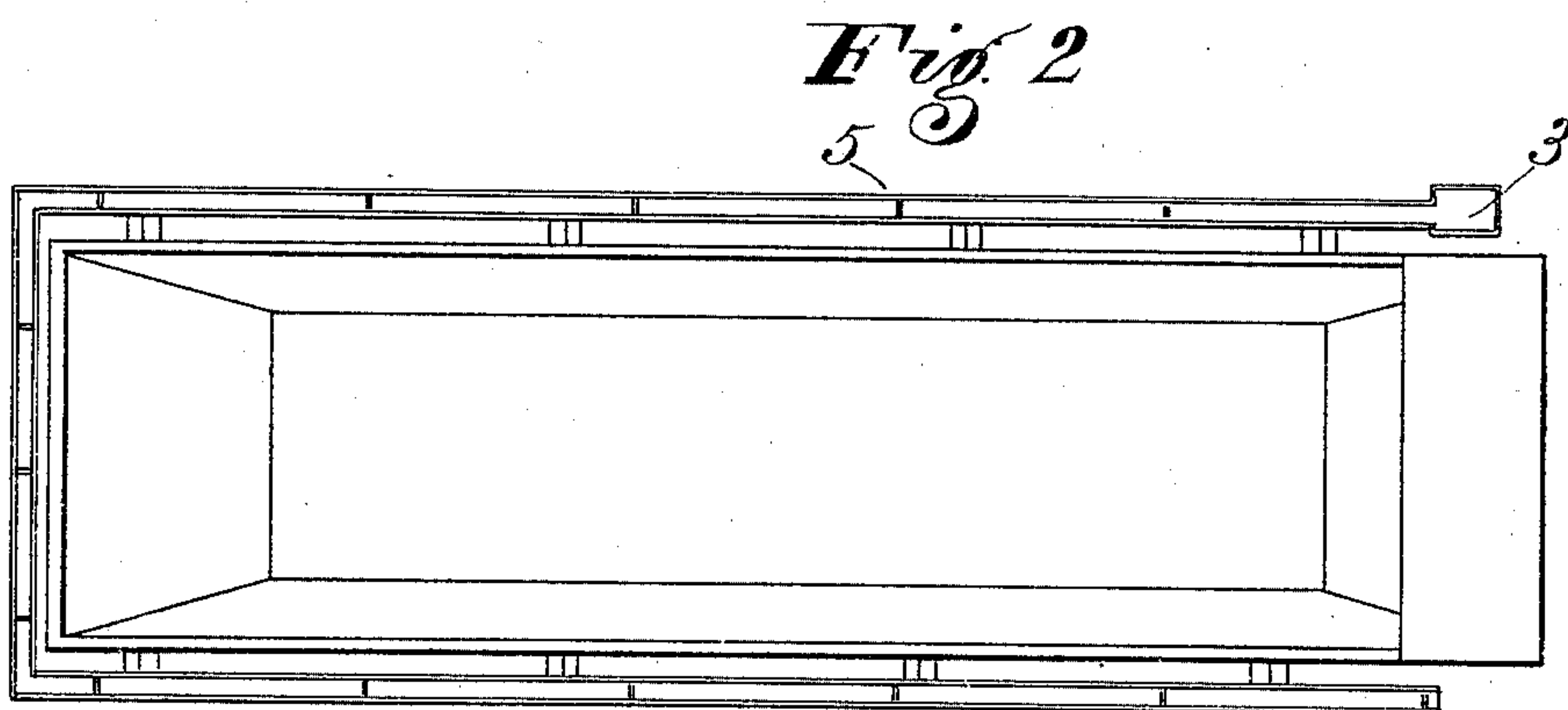
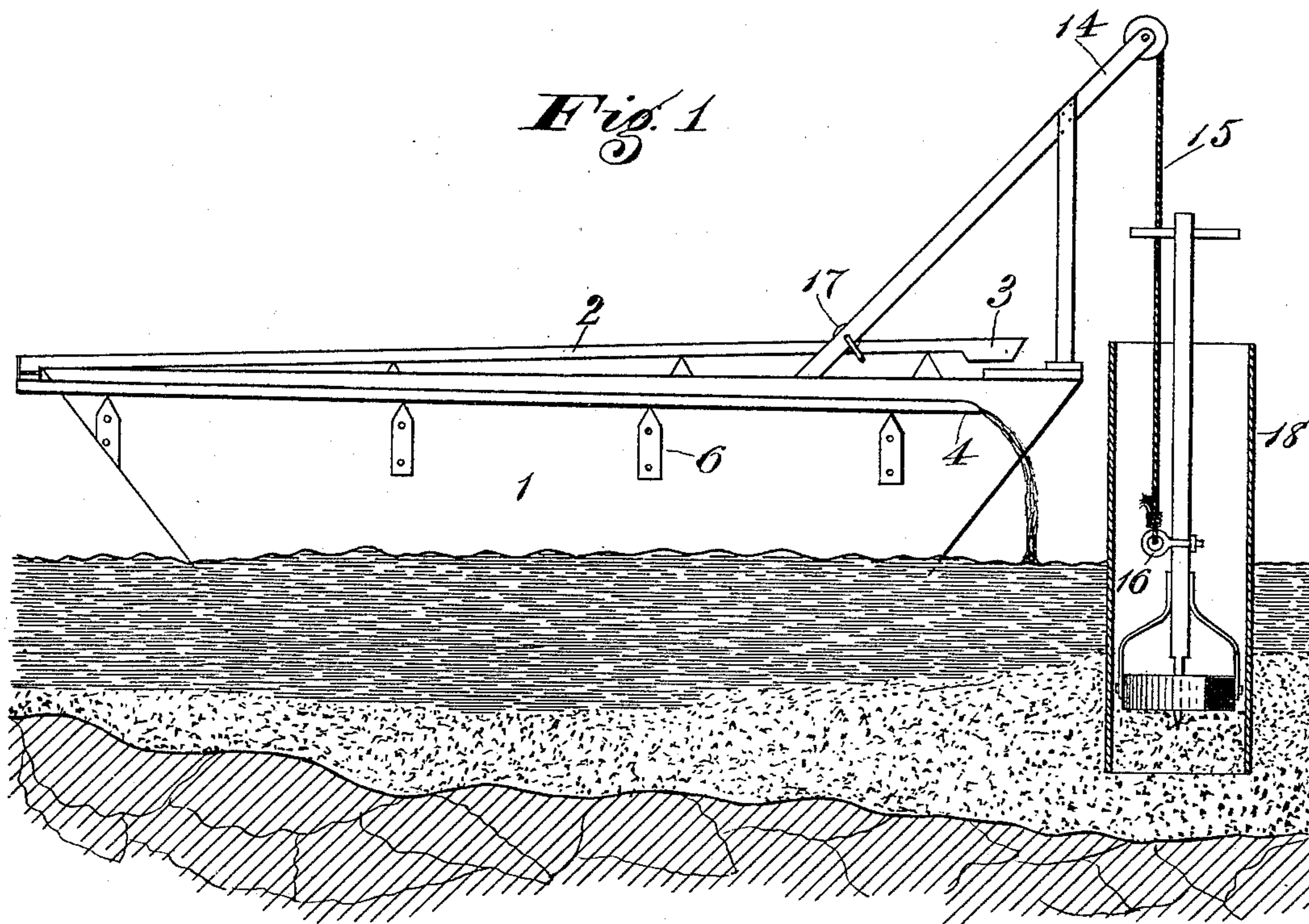
Patented Oct. 18, 1898.

P. H. MACKIE.
DREDGING APPARATUS.

(Application filed Jan. 22, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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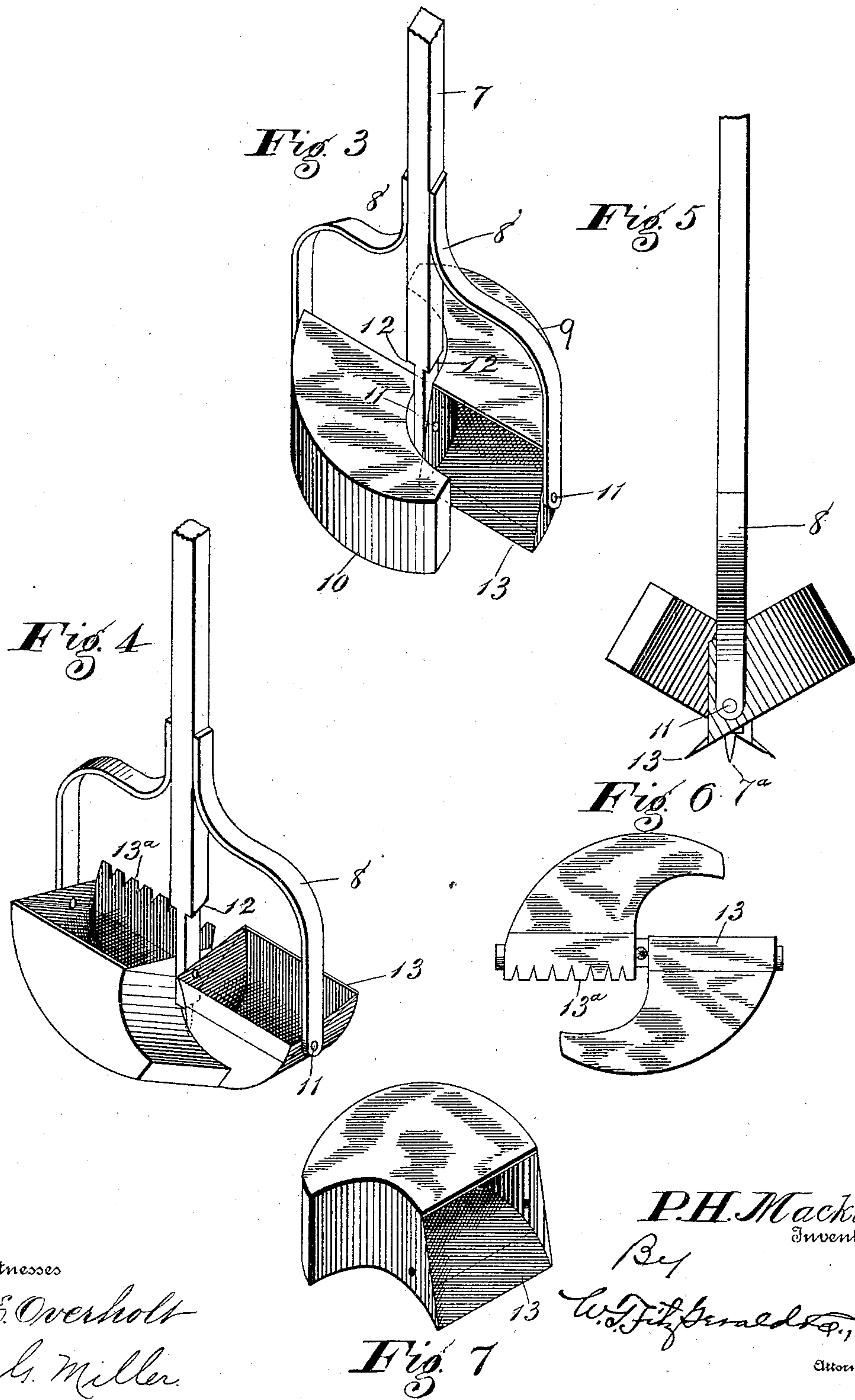
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UNITED STATES PATENT OFFICE.

PETER H. MACKIE, OF PASADENA, CALIFORNIA, ASSIGNOR OF ONE-THIRD
TO WILLIAM GLASS, OF SAME PLACE.

DREDGING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 612,777, dated October 18, 1898.

Application filed January 22, 1898. Serial No. 667,601. (No model.)

To all whom it may concern:

Be it known that I, PETER H. MACKIE, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Dredging Apparatuses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention, as will be hereinafter fully described and claimed, relates to certain new and useful improvements in the construction and combination of parts necessary to produce a miner's outfit, the special object being, among others, to provide means which will enable the miner to thoroughly dredge the bottom of streams, rivers, &c., and bring to the surface the matter thus obtained and thoroughly disintegrate the particles thereof by washing, all of the accessories necessary for the dredging, elevation, and washing of said material being provided ready at hand and carried by a boat or other suitable float.

Other advantages will be made clearly apparent from the following specification, considered in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of my dredging and hoisting apparatus. Fig. 2 is a top plan view of the preferred form of boat designed to support the hoisting and dredging accessories. Fig. 3 is a perspective view of the preferred form of dredging appliance. Fig. 4 is a similar view showing the buckets in a different position. Figs. 5 and 6 are respectively a side and bottom view of Fig. 3, while Fig. 7 is a detail perspective with one of the buckets removed.

Referring in detail to the several parts of my invention, 1 represents the body of the boat or other suitable float, provided upon either side and across one end with the sluice-box 2, so disposed that a continual incline will be provided, whereby when the material brought up from the bottom of the stream is deposited in the enlarged end or hopper 3 such material will, when supplied with the requisite quantity of water, be carried by gravity until the water and lighter particles carried thereby are deposited at the lower end 4 of said box into the stream, leaving behind in the buckets formed by the ribs 5 all the par-

ticles of gold and silver contained in the matter brought up by the dredging apparatus, as will be apparent.

The sluice-box is suitably supported in position by means of the brackets 6, which are secured to the sides of the boat so as to give the proper inclination to said box, it being understood that, if preferred, said box may be formed in sections and readily removed for more convenient transportation, or it may be so constructed as to form a permanent part of the boat, and thus always be in readiness for use.

Referring to the preferred means employed for bringing up the material from the bottom of the stream, attention is called to Fig. 3 and the following figures of the drawings, where it will be seen that I have provided a very convenient device which will not only elevate the material, but will also dislodge and disintegrate the same as the appliance is rotated.

My improved dredging device consists of the operating stem or shaft 7, having the centering-point 7^a, designed to hold it in an adjusted position, and near the lower end of said shaft I firmly secure in any preferred way the laterally-reaching arms or brackets 8, which extend outward and then downward parallel with the shaft 7 and provide means for pivotally securing in position the buckets 9 and 10, which are so constructed that they will admit of the free rotation of the entire device when all the parts thereof are assembled and also gather and retain the material upon which it is brought to bear. Said buckets 9 and 10, it will be observed, have the rectangular open end or mouth and the outer convex side and the inner concave side, the latter being so directed that said bucket will terminate in a tapered end or having in outline the form of a truncated cone. Suitable journals 11 are formed at opposite points upon the outer side of the mouth of each of the buckets, preferably slightly above the bottom thereof, which are designed to be received by suitable apertures or bearings provided in the lower end of the shaft 7 and the brackets 8.

I prefer to so form the lower end of the shaft 7 that the shoulders 12 will be provided thereon, which serve as a stop or means of checking the upward movement of the closed end of the buckets as the device is dropped into contact with the material to be acted upon, as illustrated in Fig. 5. By thus providing

the shoulders 12 a proper inclination is given the buckets to insure that the cutting edge 13, provided therefor, will have the proper inclination to positively engage the soil and take into the same as the device is rotated, thus enabling the operator to readily dislodge a sufficient quantity to fill the buckets, when an upward pull upon the shaft 7 will, when said buckets are filled, cause each of the latter to assume the position substantially as shown in Fig. 4, enabling the contents thereof to be brought to the surface and deposited at any desired point. It will be observed that the blade or lip 13 may have a continuous cutting edge or be surfeited, as indicated by 13^a.

When my improved dredging appliance is of a large size, it will be desirable to provide reliable means for hoisting the same when filled with the material obtained from the bottom of the stream, as by the derrick 14, the rope 15, attached to the eyebolt 16, and the hoisting appliance or windlass 17, as clearly shown in Fig. 1, thus enabling one or two persons to effectively operate a complete dredging or prospecting-miner's outfit.

It will be understood that the dredging appliance may be made any preferred size and of any suitable material and that if constructed so that the buckets will hold a comparatively small amount of material it will be clear that the device will be especially desirable and valuable as a miner's prospecting-tool, as by the use thereof a sample of the deposit at the bottom of a stream or river may be readily obtained without the necessity of the miner wetting his hands or feet in the operation.

If desirable, the several parts may be so constructed as to be readily disassembled, thus enabling the parts thereof to be snugly packed within a small compass, as one of the buckets may be received by the other or may be used as receptacles for other necessary articles contained in the miner's outfit while he is moving from place to place.

The operation of my improved dredging appliance may be stated to be as follows: If desired, a section of a tube, as 18, of suitable diameter may be placed in position in the stream at the point where it is desired to operate, when the dredging appliance may be dropped into the same after being properly connected with the hoisting-derrick 14, as by rope or chain 15, when a few rotations or a partial rotation of the shaft 7 will cause the buckets to become filled, when by means of the windlass 17 the dredging appliance may be elevated to the top of the tube and the contents of the buckets deposited in the receptacle 3, when the addition of the proper quantity of water will thoroughly wash the material thus obtained and separate therefrom by means of the ribs or pockets 5 any particles of gold or silver contained in the matter thus treated, when the dredging appliance may be again dropped in position within the tube 18 and the operation repeated.

I desire to call special attention to the great advantage derived from using this tube and to the place it occupies in our system of river-dredging. It will be understood that where the deposit of gold or silver is covered with a quantity of sand or gravel it would require the operators to remove a great quantity of the aforesaid sand or gravel before the gold-deposit would be reached or before the operators could determine whether or not there was any such deposit at the bottom of the stream, as the sand or gravel would continually be filling in at the place where the dredging was going on; but by using the tube as indicated the stratum of gold will be very quickly reached, as the tube gradually sinks during the operation of dredging and forms a wall, so to speak, through the sand and gravel, thus enabling the operators to quickly and easily reach the bed-rock, and if no ore or deposit be found there they can at once remove to another place.

Believing that the advantages and construction of my invention have been made apparent by the foregoing description and the accompanying drawings, further reference will be dispensed with.

What I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described dredging appliance consisting of the operating-shaft; side arms or brackets attached to the lower end of said shaft; excavating-buckets pivoted to said shaft and brackets so mounted in position that they will gather and retain the material upon which they are brought to bear, substantially as specified and for the purpose set forth.

2. In a dredging appliance, an excavating-bucket having a convex outer side and a corresponding concave inner side, and an open end, a cutting or scooping blade attached to the lower side of said open end and a frame and an operating-shaft therefor designed to pivotally hold a pair of said buckets in operative relationship to each other, whereby when said frame is rotated said buckets will excavate or form a round hole in the earth, as and for the purpose set forth.

3. In a dredging appliance, a pair of buckets having a decreasing, laterally-tapering body or bottom and a cutting blade or lip secured to the bottom edge of the open end thereof; an operating-shaft having a guiding-point and also having laterally-extending arms, and suitable means for pivotally connecting said buckets between said arms and shaft whereby the open end of said buckets will point upward as they are raised, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

PETER H. MACKIE.

Witnesses:

J. U. MARRINER,
GUY HAMMELL.