

(No Model.)

H. B. MEECH.

Apparatus for Dredging and Separating Gold, &c.

No. 227,986.

Patented May 25, 1880.

Fig: 3.

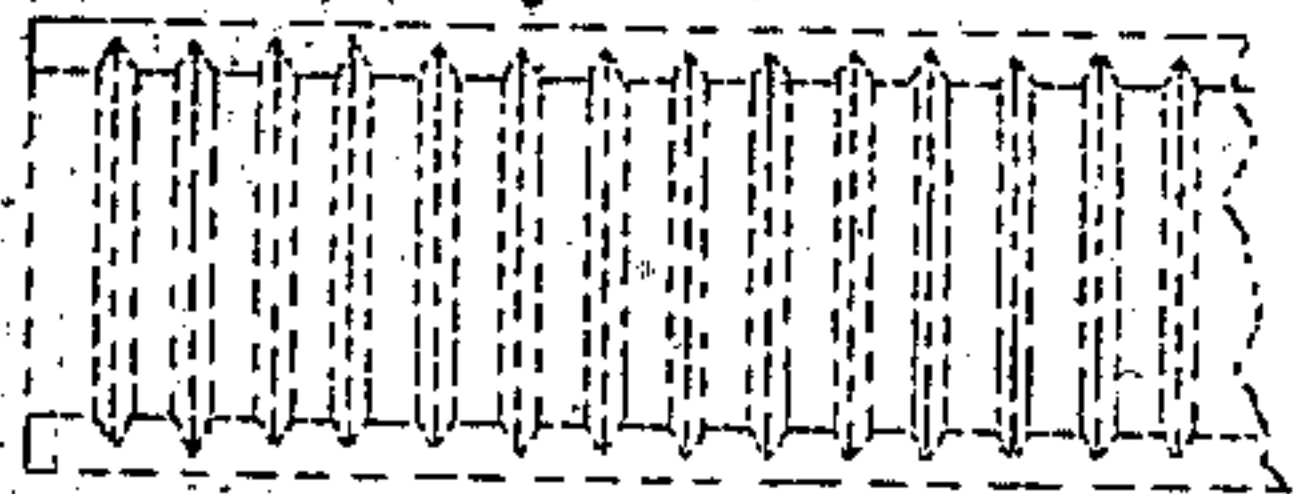


Fig: 4.

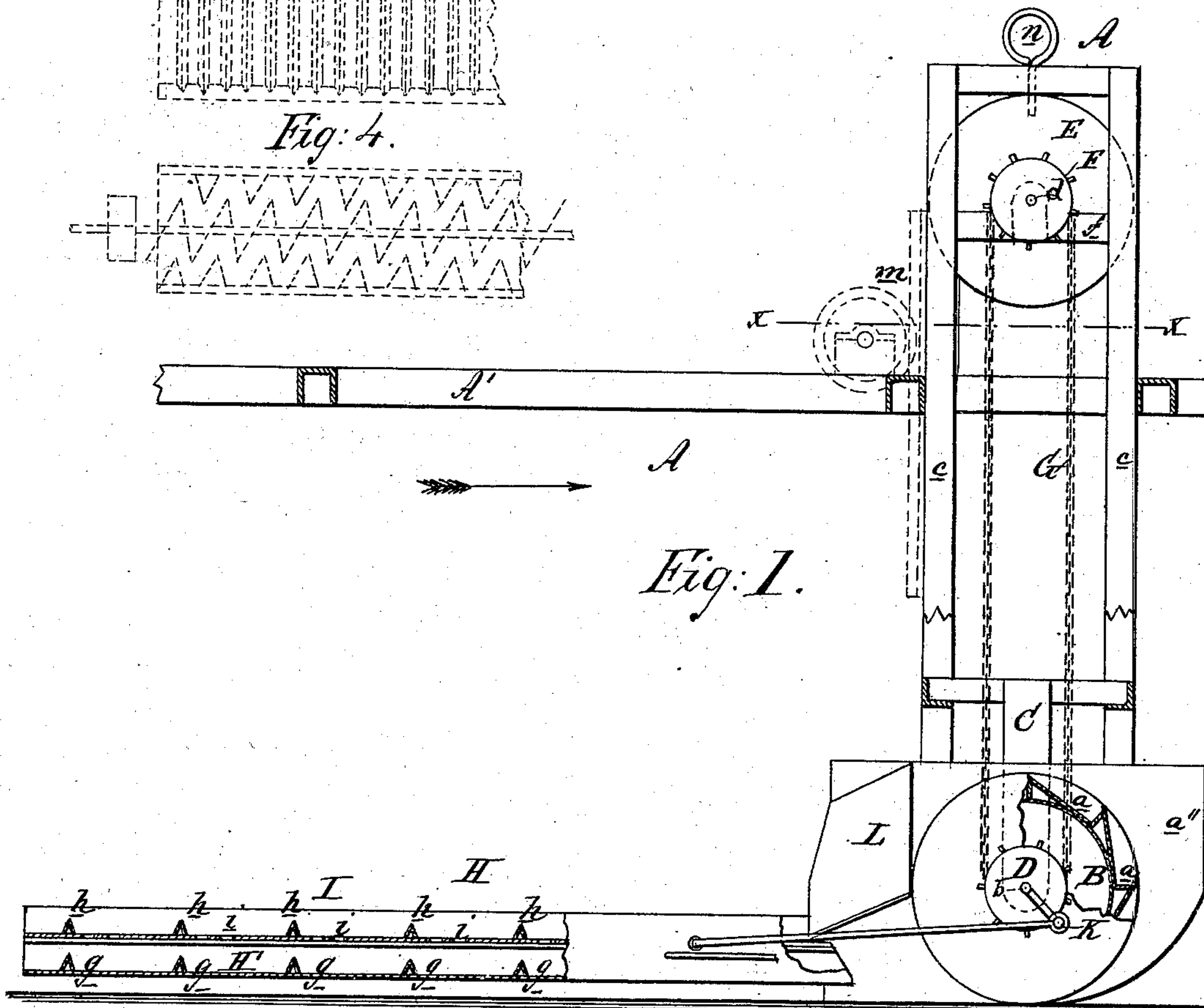
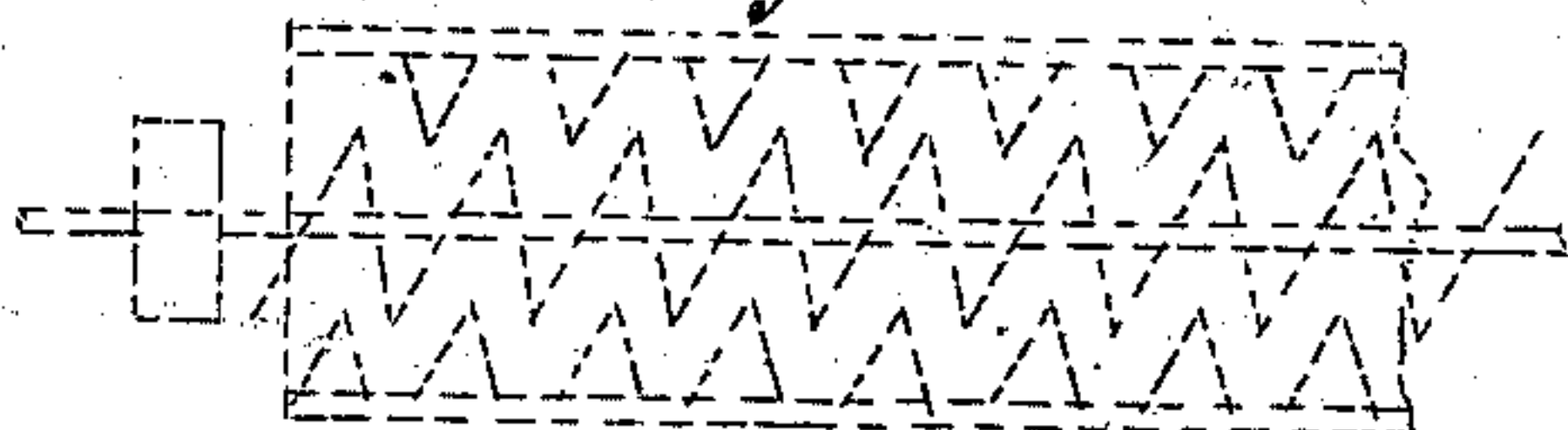
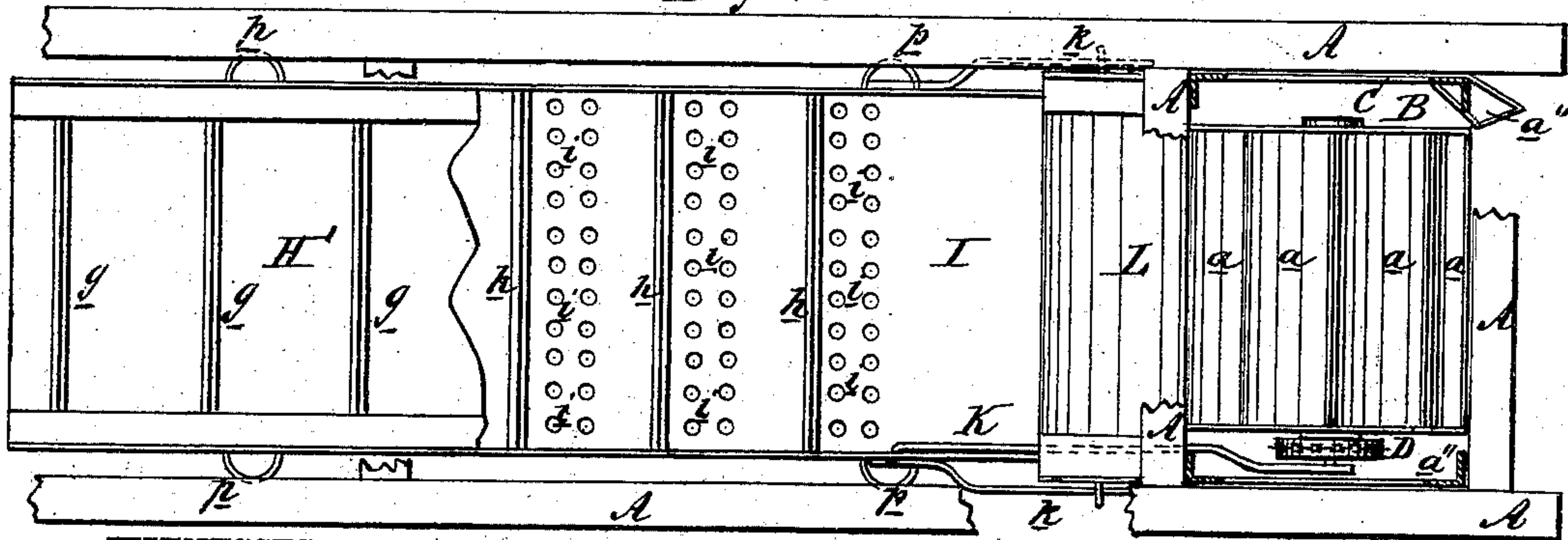


Fig: 2.



WITNESSES:

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HARRISON B. MEECH, OF CHATHAM VILLAGE, NEW YORK.

APPARATUS FOR DREDGING AND SEPARATING GOLD, &c.

SPECIFICATION forming part of Letters Patent No. 227,986, dated May 25, 1880.

Application filed March 6, 1880. (No model.)

To all whom it may concern :

Be it known that I, HARRISON B. MEECH, of Chatham Village, in the county of Columbia and State of New York, have invented a new and Improved Apparatus for Dredging and Separating Gold and other Precious Metals, of which the following is a specification.

The object of this invention is to provide an improved apparatus for obtaining gold and other precious metals from the bottom of rivers and other submarine deposits.

The invention consists of a revolving drum provided with peripheral buckets and an attached reciprocating double-bottomed jigger, both of which are suspended from a suitable frame-work that is designed to be secured upon a boat or other vessel in such a manner that said drum and jigger may be lowered to the river bottom, there to operate by means of power applied from the said boat or other vessel.

Figure 1 represents a side elevation of the device, partly in section, and with parts broken away to show other parts. Fig. 2 is a plan of the device on line *xx*, Fig. 1, with parts broken away to better exhibit other parts. Fig. 3 represents a modification or equivalent of the jigger. Fig. 4 represents another modification or equivalent of the jigger.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the frame holding or supporting the operating parts of the apparatus. B is the drum, provided with peripheral buckets *a a*, and journaled in the hangers C C, and onto the drum-axle *b*, on one side of the said drum B, is secured a chain-wheel, D. Between the standards *c c* of the frame A is the driving-pulley E, whose shaft *d* is journaled on the upper cross-beams, *f f*, and on this shaft *d*, on one side of the pulley E, is keyed a chain-wheel, F, that is connected with the lower chain-wheel, D, by the chain G, and thereby causes the said drum B to revolve when power is applied to the driving-pulley E.

H is the jigger, consisting of a long shallow pan closed at the end nearest the drum B, and of a width a little exceeding the length of the said drum B. Secured transversely across the bottom H' of this jigger H are the paral-

lel strips or bars *g g*. These serve as riffles to facilitate the collection of the gold and other precious metal that may fall through the perforations made in the false bottom I of the said jigger H. This false bottom I is provided with transverse bars or strips *h h*, that prevent the washing off of the collected gold or other heavy metals and serve to agitate the matter placed thereon, and with perforations *i i*, that permit the particles of collected gold and other metals and all the finer portions of the excavated sand, gravel, &c., to fall upon the bottom H' of the said jigger H. This false bottom I is made removable, so that the bottom H' may be from time to time inspected and the deposits easily removed from it.

The jigger H is movably connected with the frame A, or with the boxing *a''*, at the sides of the lower part of said frame A, by rods and staples *k k*, or other suitable device that will admit of a reciprocating forward-and-backward motion of said jigger H. This boxing *a''* serves to protect the chain-wheel D and crank K and bearings of the drum B from contact with submarine obstructions. The inner end of this jigger extends nearly in contact with the drum B, and said jigger H is reciprocated by means of a crank and rod, K, that are attached to an end of the axle *b* of said drum.

It is designed that the horizontal timbers A' of the frame A shall be fastened upon the gunwale or rail of a boat or vessel, and that the standard *c c* and its attached parts and mechanism shall be suspended thereby over the side of the said boat or vessel. The standards *c c* may then be lowered by means of rack and wheel, as shown in dotted lines at *m*, or by means of a derrick, or by tackle and falls connecting with the ring *n*, or by any other suitable hoisting and lowering device, until the drum B and jigger H rest upon the submarine bottom. Then, as the boat or vessel is moved along in the direction of the arrow shown in Fig. 1, power is applied to revolve the driving-pulley E, and thereby the drum B. As the drum B revolves the buckets *a a* scoop the sand, gravel, &c., from the submarine bottom and deposit it upon the apron L in rear of said drum B, whence said sand, gravel, &c., is carried by its gravity and by the mo-

tion through the water upon the jigger's false bottom I, through whose perforations *i i* the finer portions of the deposit will fall upon the bottom H', preferably upon mercury, that will
 5 be held between the transverse strips or bars *g g*, so that the current of water flowing over the said bottom H' will wash away all of the deposited sand and gravel, and leave the gold and other precious metals amalgamated by or
 10 in contact with said mercury.

In some instances the use of mercury with bottom H' may be dispensed with, especially where the gold is, as is sometimes the case, in particles of sufficient size and weight to re-
 15 main unmoved on the said bottom H' by the current of water flowing over it.

As the drum B revolves the crank and rod K, that connect the drum-axle *b* with the jigger H, impart to said jigger H a reciprocating
 20 longitudinal motion that causes the particles of deposited precious metal to gravitate to and settle in the bottom of the said jigger, while the lighter sand, gravel, &c., are so agitated as to be readily washed off by the cur-
 25 rents of water.

Whenever desired the apparatus—the drum and jigger—may be elevated above the water and the collected gold or other precious metal be removed from the latter; and to assist in
 30 elevating the jigger H ropes, chains, or rods may be secured in the staples *p*, fixed to the sides of said jigger.

The modification or equivalent of the jigger H shown in dotted lines, Fig. 3, consists
 35 of an internally-ribbed receiving-cylinder,

while the modification shown in dotted lines, Fig. 4, represents a stationary ribbed cylinder with a screw revolving within it.

Having thus fully described my invention, I claim as new and desire to secure by Letters 40 Patent—

1. A drum provided with peripheral buckets, in combination with a separator in the same, or nearly the same, horizontal plane with the drum, whereby both will be sub- 45 merged when in use and operate in unison with the water, and means for raising or lowering, substantially as described.

2. A drum provided with peripheral buckets, in combination with a separator composed 50 of a jigger and a riffle beneath the latter, said separator being in the same, or nearly the same, horizontal plane with the drum, whereby both will be submerged when in use and operate in unison with the water, and means 55 for raising and lowering, substantially as described.

3. A drum provided with peripheral buckets, in combination with a separator having a perforated false bottom provided with a series 60 of transverse strips or bars, said separator being in the same, or nearly the same, horizontal plane with the drum, whereby both will be submerged when in use and operate in unison with the water, and means for raising 65 and lowering, substantially as described.

HARRISON B. MEECH.

Witnesses:

I. I. STORER,
 C. SEDGWICK.