

No. 653,205.

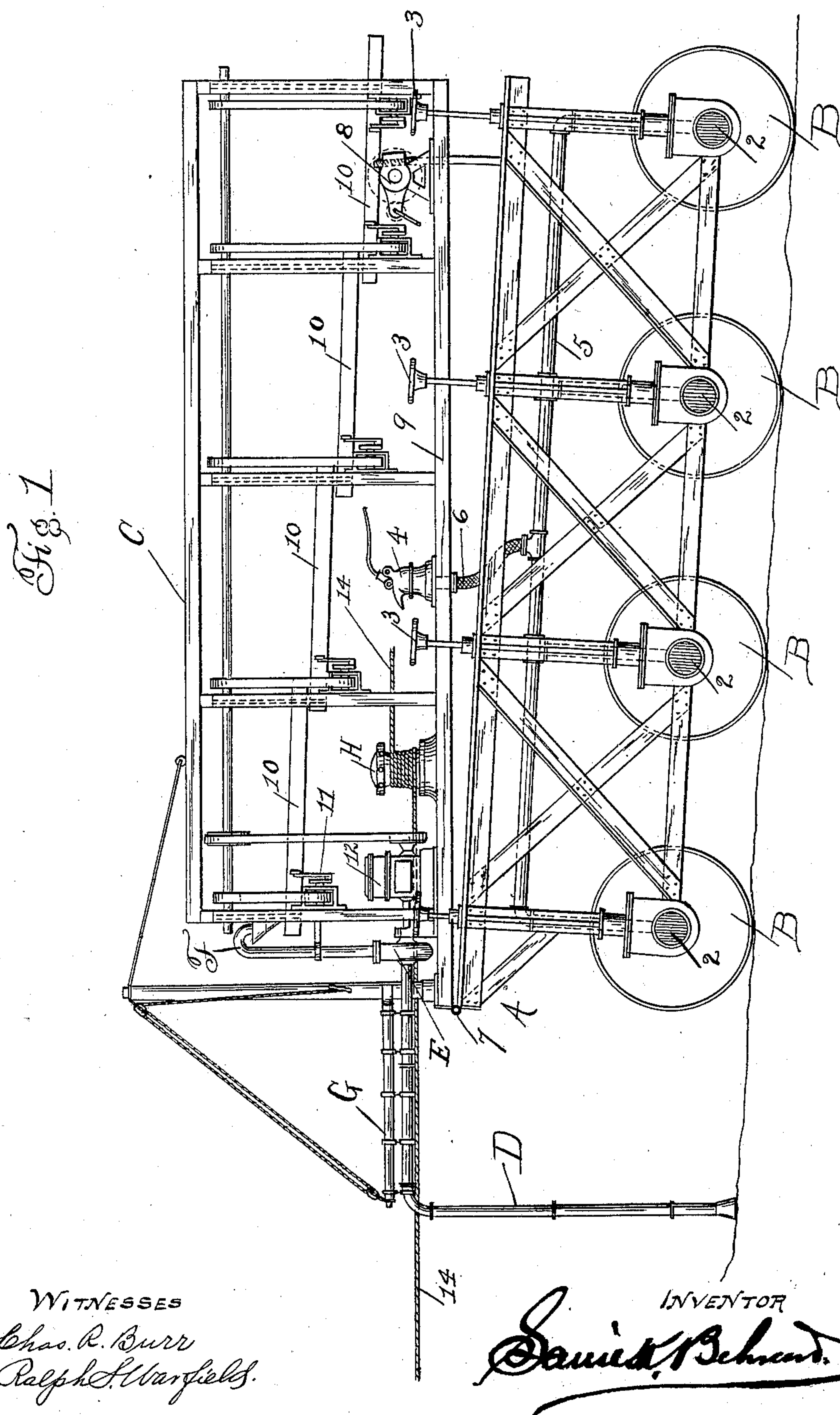
Patented July 10, 1900.

S. K. BEHREND.  
PLACER MINING DREDGE.

(Application filed Jan. 29, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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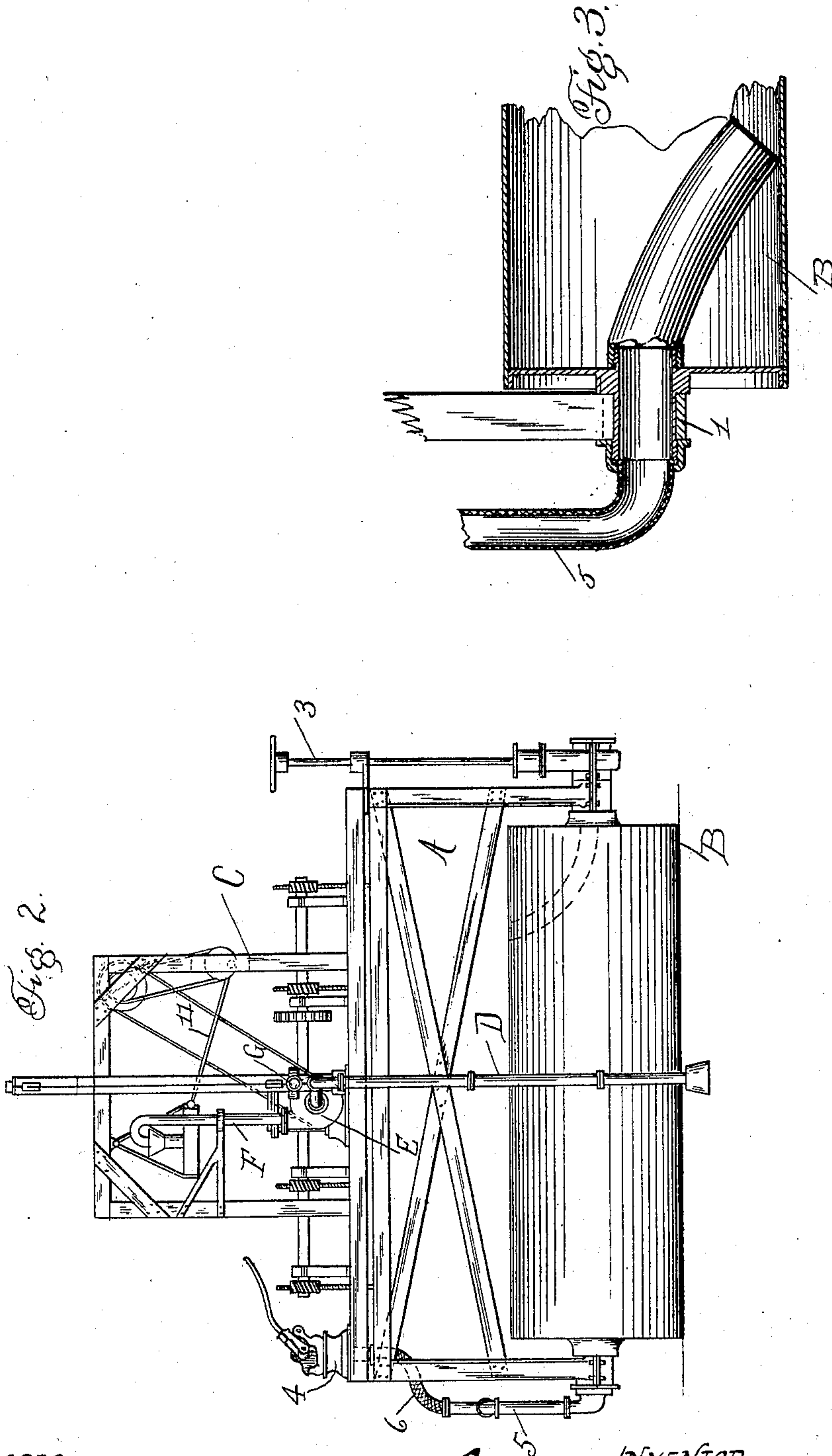
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2 Sheets—Sheet 2.



WITNESSES.  
Chas. R. Burr  
Ralph S. Warfield.

INVENTOR.  
*Samuel K. Behrend*



# UNITED STATES PATENT OFFICE.

SAMUEL K. BEHREND, OF WASHINGTON, DISTRICT OF COLUMBIA.

## PLACER-MINING DREDGE.

SPECIFICATION forming part of Letters Patent No. 653,205, dated July 10, 1900.

Application filed January 29, 1900. Serial No. 3,215. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL K. BEHREND, a citizen of the United States of America, residing at Washington, in the District of Columbia, have invented a new and useful Placer-Mining Dredge, of which the following is a specification.

My invention relates to an improvement in placer-mining dredges, one object being to provide an apparatus which can be operated at or near the beach, where the surf is violent and dredges of the ordinary type using boats cannot be operated on account of the violent motion of the sea, and which can be easily run out into the water, either of the ocean or flowing water, for any suitable depth, and which will be provided with appliances for dredging from the bottom and discharging sand and gravel therefrom into a suitable sluice or concentrator for separating all the precious minerals therefrom.

Another object is to provide a machine which is portable in character, easy to control, and capable of being made heavy to retain its position on the bottom, or light, so that it can be readily moved.

Further objects are to provide means for hauling the apparatus in or out, adjusting its level to the water-level, and for filling and emptying the cylinders or rollers upon which it moves and rests.

With the foregoing objects in view my invention consists in a truck adapted to be run out into the stream or ocean in connection with a platform hinged thereto and carrying mechanism for dredging and separating the sand and gravel taken from the bottom.

It further consists in a truck having hollow cylinders or rollers upon which it may be moved in connection with means for filling said cylinders or rollers with water or emptying them when occasion may require it.

My invention still further consists in a truck, a platform hinged thereto, with means for adjusting the platform at the required level with respect to the water-surface, and means for conveying material from the bottom and separating the precious minerals therefrom.

In the accompanying drawings, Figure 1 is a view in side elevation of my improved ap-

paratus. Fig. 2 is a view in front elevation, and Fig. 3 is an enlarged detail.

A represents a truck, the same being made solid and secure by suitable braces, substantially as shown, although it may of course be constructed in a variety of ways, as this particular part of the invention is obviously subject to a great variety of changes and modifications. The truck-frame is mounted on two or more, preferably four, hollow cylinders or rollers B. These cylinders or rollers have bearings 1, as shown in the frame, so that they turn readily, and by means of them the truck can be run out or in, as required, upon the bottom of the sea or stream, as the case may be, such distance as may be desired. Each roller or cylinder is provided at one end with a water-gate 2, operated after the usual manner of such appliances—as, for instance, by the hand-screws 3—their object being to open the rollers or cylinders and allow water to flow therein to give weight to the apparatus and keep it upon the bottom. Means are likewise provided for emptying these rollers or cylinders, and they consist of a pump 4 as a convenient appliance for the purpose, the pump being connected with the several cylinders or rollers by means of pipe 5 and hose 6. In order to empty the several rollers or cylinders, of course the water-gates are first closed, after which the pump is operated until all the desired amount of water shall have been pumped out. In this way the water is replaced by air, and the apparatus is lightened and made to rise from the bottom and float, so that it can be more easily towed or moved from place to place.

C denotes the frame or superstructure of the apparatus, it being hinged at the forward end, as at 7, to the forward end of the truck-frame and provided at or near the rear end with means—as an example, worm-gearing 8—for jacking said rear end up suitably above the water-level, the object being to make the platform 9 of the frame or superstructure as nearly level as possible, or, in fact, to regulate the level as occasion may require. Located upon this frame or superstructure is a sluice-box 10, preferably made in sections, one below another and extending throughout the length of the apparatus. These sections



are suspended, and means 11 is provided for imparting a lateral shake to the several sections, an engine or motive power of any desired species 12 being provided for the purpose.

D indicates a suction-dredge, and E a pump for operating the same, and F is an outlet for the discharge of the material sucked up from the bottom into the sluice-box. A boom 10 G is provided for the support of the dredging-pipe and for swinging it to different positions. Although I have shown this suction-dredge as a means for hoisting material from the bottom, yet it is evident that any form of 15 dredge or hoisting device might be employed, the dredge in itself not constituting a novel feature of my invention.

The details of the superstructure might of course be varied considerably as occasion 20 may require, the gist of the invention being to provide a self-contained apparatus for pumping up and separating the material from the bottom, and this apparatus is particularly designed for Cape Nome, Alaska, where the 25 sand is rich with precious minerals, my invention being designed to pump or elevate it up and separate it without further process.

The capstan H is provided as a successful means for moving the apparatus endwise 30 either forward or backward, it being connected by means of cables 14 14 with posts on land and out in the water.

It is evident that slight changes might be resorted to in the form and arrangement of 35 the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

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

1. The combination with hollow rollers, of a platform having a horizontally-hinged connection with said rollers, and a dredge carried 45 on said platform.

2. The combination with a truck constructed and adapted for support directly upon the water bottom whereby the truck is upon a 50 fixed and immovable support, of a platform carried by the truck and capable of vertical adjustment with respect thereto, and a dredge on the platform.

3. A truck adapted to run on soft soil without sinking and carrying a horizontally- 55 hinged platform, a sluice on this platform,

and means on the platform for hoisting material and discharging it into the sluice.

4. The combination with a truck-frame of hollow cylinders or rollers upon which said frame is mounted, and means for filling said 60 rollers or cylinders with water and for removing the water therefrom.

5. The combination with a truck-frame of hollow cylinders or rollers upon which said frame is mounted, a water-gate for letting 65 water into the hollow rollers or cylinders and means for removing the water therefrom.

6. The combination with a truck and rollers upon which it is mounted, of a platform hinged thereto and carrying dredging and separating 70 mechanism.

7. The combination with a truck and rollers upon which it is mounted, of a platform hinged thereto and carrying dredging and separating mechanism and means for adjusting the level 75 of the said platform.

8. The combination with a truck and a platform hinged thereto, of a capstan for drawing the apparatus endwise in either direction.

9. The combination with a truck and platform 80 connected therewith, of hollow cylinders or rollers upon which the truck is mounted, water-gates connected with each hollow cylinder or roller, pipes connecting said cylinders and a pump connected with a pipe for 85 withdrawing the water contained in the cylinders or rollers.

10. The combination with a truck and means for rolling it and retaining it in a submerged condition and means for withdrawing 90 a portion of its weight, of a superstructure or framework hinged to said truck and carrying dredging and separating mechanism.

11. A self-contained placer-mining apparatus comprising a truck mounted on suitable 95 rollers, said rollers being hollow and capable of being filled with water and having the water removed therefrom, a frame or superstructure hinged to the truck-frame and capable of having its level adjusted, a dredge, a laterally- 100 movable sluice into which the dredge discharges, carried by the frame or superstructure.

In testimony whereof I have signed my name to this specification in the presence of 105 two subscribing witnesses.

SAMUEL K. BEHREND.

Witnesses:

JETER BUTLER,  
W. H. BADEN.