No. 675,123. Patented May 28, 1901.

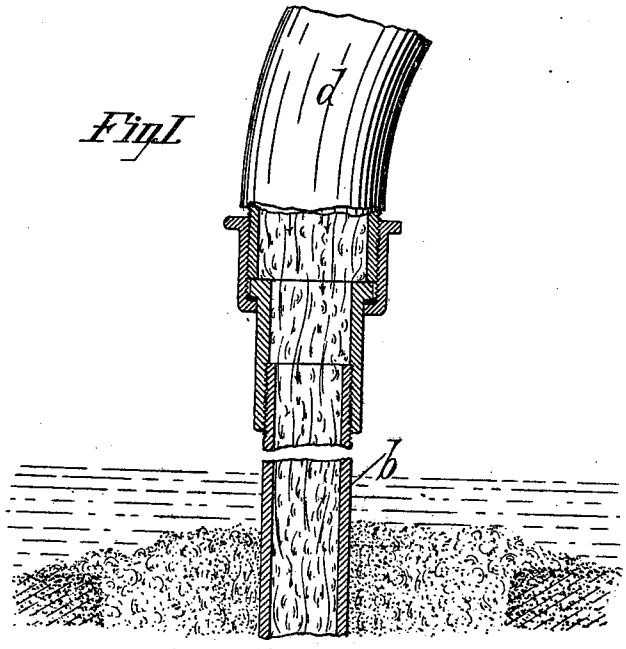
G. S. BARTHOLOMEW, Dec'd.

E. A. BECK, Administrator.

HYDRAULIC MACHINE FOR EXTRACTING GOLD FROM SAND IN PLACE.

(No Model.) (Application filed May 18, 1900.)

Fig. I.



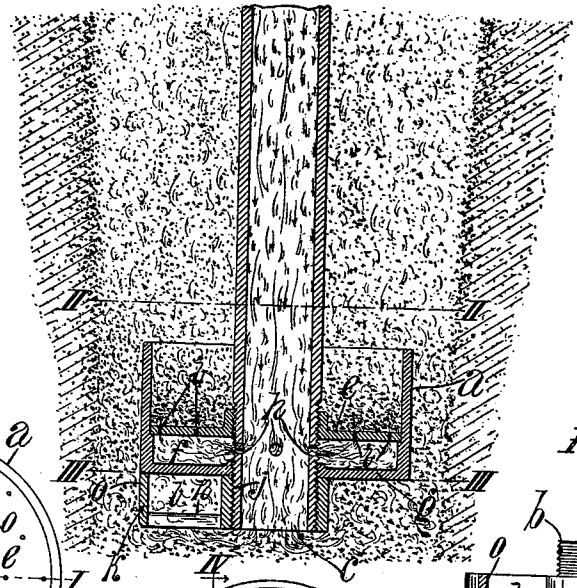


Fig. II.

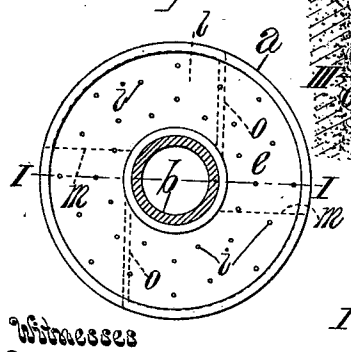


Fig. IV.

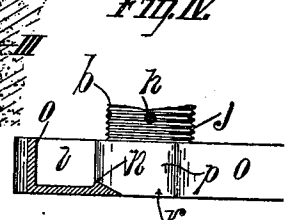
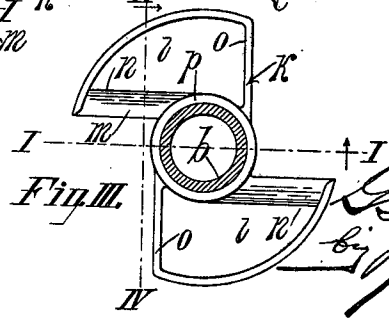


Fig. III.



Witnesses
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F. Townsend.

Inventor
G. S. Bartholomew
by Townsend Bros
his Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GROVE S. BARTHOLOMEW, OF LOS ANGELES, CALIFORNIA; E. A. BECK ADMINISTRATOR OF SAID BARTHOLOMEW, DECEASED.

HYDRAULIC MACHINE FOR EXTRACTING GOLD FROM SAND IN PLACE.

SPECIFICATION forming part of Letters Patent No. 675,123, dated May 28, 1901.

Application filed May 18, 1900. Serial No. 17,162. (No model.)

To all whom it may concern:

Be it known that I, GROVE S. BARTHOLOMEW, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Hydraulic Machine for Extracting Gold from Sand in Place, of which the following is a specification.

The object of this invention is to provide extremely simple and effective means by which to obtain from loose and finely-divided material, such as sand in place, the gold or other material of heavy specific gravity which may be contained in said sand or other fine and loosely-divided material in place.

In my invention I provide a cup, means for lowering the cup into the sand, and means for discharging water below the cup close to the bottom of the cup to thereby wash the sand and other material away from beneath the cup and allow the cup to sink, while the sand and other material is carried up and over the edge of the cup. The space between the discharge-outlet and the bottom of the cup should be very slight, and in no instance should exceed the radius of the cup, in order that the bottom of the cup will confine the discharge fluid sufficiently to cause it to forcibly eject the heavy and light material from below the cup and cause it to ascend around the walls of the cup close to the cup, so that the heavy material will be thrown over the cup to fall thereinto. The water and a portion of the lighter material flow out at the top of the hole made by the water as the cup sinks. While the lighter portion of the loosened material is held in suspension over the cup, the particles of great specific gravity will sink to the bottom of the cup, there to be retained until the cup is withdrawn from the mass. In order to keep the material within the cup lively and to avoid packing, a false bottom is arranged in the cup, and means are provided for forcing water into the space between the bottom of the cup and the false bottom, passages being provided to allow the water to pass upward from below the false bottom to act upon the material within the cup.

In order to gather up any gold or other valuables that may not be washed up from the bottom of the hole made by the water in sinking the cup, I provide one or more pockets below the cup, a cutting edge being provided at the inlets to said pockets, extending inward from the periphery of the cup, so that by rotating the device any loose material at the bottom of the hole may be gathered into the pocket or pockets and withdrawn from the hole with the appliance.

The accompanying drawings illustrate my invention.

Figure I is an axial section of an appliance embodying my invention and shown in operation. Line I I, Figs. II and III, indicates the line of section. Fig. II is a plan section on line II II, Fig. I. Fig. III is a plan section on line III III, Fig. I. Fig. IV is a sectional detail on line IV IV, Fig. III.

a indicates a cup, *b* a tube opening at *c* below the cup.

d shows a pipe indicating means for forcing water through the tube to drive the sand and other material from below the cup upward and over the cup.

e indicates a false bottom in the cup, leaving a chamber *f* between the bottom *g* of the cup and the false bottom *e*. Passages or openings *h* are provided in the tube *b* to allow water to flow from said pipe into the chamber *f*.

i indicates passages or openings leading upwardly from the chamber *f* to allow the water to escape therefrom into the cup above the false bottom *e* to keep the material within the cup loose and lively, so that the heaviest matter may fall to the bottom of the cup.

The tube *b* is preferably screw-threaded at the lower end, as indicated at *j*, and the cup-bottom *g* and the false bottom *e* are detachably fastened to the tube *b* by being screwed onto the screw-threaded portion thereof. The body of the tube affords means for handling the cup.

In practical operation the water will be introduced into the tube *b*, through the pipe or hose *d*, under a considerable pressure, and the mouth *c* of the tube will be placed on the surface of the sand from which the gold or other heavy materials are to be obtained. The water flowing out at the mouth *c* of the tube *b* will wash away the sand and other loose material from underneath the bottom *g* of the cup and will allow the cup to sink.

The cup will be lowered until the desired depth has been reached.

k indicates a pocket member detachably fastened on the tube below the bottom of the cup. It is preferably screwed onto said tube, as shown. One or more pockets *l* will be thus provided, and the mouths or inlets *m* of said pockets extend inward from the periphery of the cup, so that when the appliance has been sunk as deep as required it will be rotated by the workman, thus to cause the edges of the pocket member at the mouths *m* of the pockets to scrape up any loose material remaining at the bottom of the hole. Such material will be received into the pocket or pockets *l* and will be carried up by the appliance. Preferably the edge at the mouth of the pocket is provided with an upwardly-extending bead *n*, as shown in Figs. III and IV, to prevent the escape of the contents of the pocket while the appliance is being withdrawn from the mass into which it has been sunk.

o indicates the wall of the pocket, and *p* the central collar, which screws onto the end of the tube. When the appliance has been withdrawn, the cup will be emptied and the pocket member and other parts may be detached from the tube, if desired, and all the gold caught by the device can be obtained.

It is to be understood that the sizes and proportions of the parts may be varied within the judgment of the constructor without departing from the spirit of my invention.

The appliance may be used for working in submerged sands or unsubmerged sands or other loose material.

In Fig. I, *s* indicates the sand in place, and *t* the mingled sand and water which is being driven up from the bottom.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A hydraulic machine for extracting gold from sand in place, comprising a cup; means for handling the cup; means for discharging water below the cup, close to the bottom thereof; and means for discharging water into the cup above the bottom thereof.

2. A hydraulic machine for extracting gold from sand in place, comprising a cup; a tube fastened to the cup and extending through the bottom thereof; opening beneath the cup and furnished with openings inside the cup; and means for forcing water through the tube.

3. A hydraulic machine for extracting gold from sand in place, comprising a cup; a tube fastened to the cup and extending through an opening beneath the cup and provided with openings inside the cup; means for forcing water through the tube; and a false bottom in the cup surrounding the tube above the openings of the tube within the cup; openings being provided to allow water to flow into the cup above the false bottom from the openings in the tube within the cup.

4. A hydraulic machine for extracting gold from sand in place, comprising a cup; a tube fastened to the cup and extending through the bottom thereof, and opening beneath the cup; means for forcing water through the tube; and one or more pockets fastened on the tube beneath the cup, and provided with inlet-openings extending inward from the periphery of the cup.

5. A hydraulic machine for extracting gold from sand in place, comprising a cup; a tube fastened to the cup and extending through the bottom thereof and opening beneath the cup; means for forcing water through the tube; and one or more pockets screwed onto the tube beneath the cup and provided with inlet-openings extending inward from the periphery of the cup.

6. A hydraulic machine for extracting gold from sand in place, comprising a tube provided near one end with lateral openings; means for forcing water through the tube; a false bottom fastened to the tube above said lateral openings; a cup detachably secured to the tube and inclosing the false bottom and forming a chamber between the false bottom and the bottom of the cup and into which chamber the said lateral openings discharge; and openings from said chamber into the cup above said false bottom.

7. A hydraulic machine for extracting gold from sand in place, comprising a tube provided near one end with lateral openings; means for forcing water through the tube; a false bottom fastened to the tube above said lateral openings; a cup detachably secured to the tube and inclosing the false bottom and forming a chamber between the false bottom and the bottom of the cup and into which chamber the said lateral openings discharge; openings from said chamber into the cup above said false bottom; and a pocket-forming member detachably fastened to the tube below the bottom of the cup and provided with inlet-openings extending inward from the periphery of the cup.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, California, this 11th day of May, 1900.

G. S. BARTHOLOMEW.

Witnesses:
JAMES R. TOWNSEND,
JULIA TOWNSEND.