

E. E. ROBERSON.
 SUCTION DREDGER.
 APPLICATION FILED JAN. 3, 1910.

1,028,387.

Patented June 4, 1912.

3 SHEETS-SHEET 1.

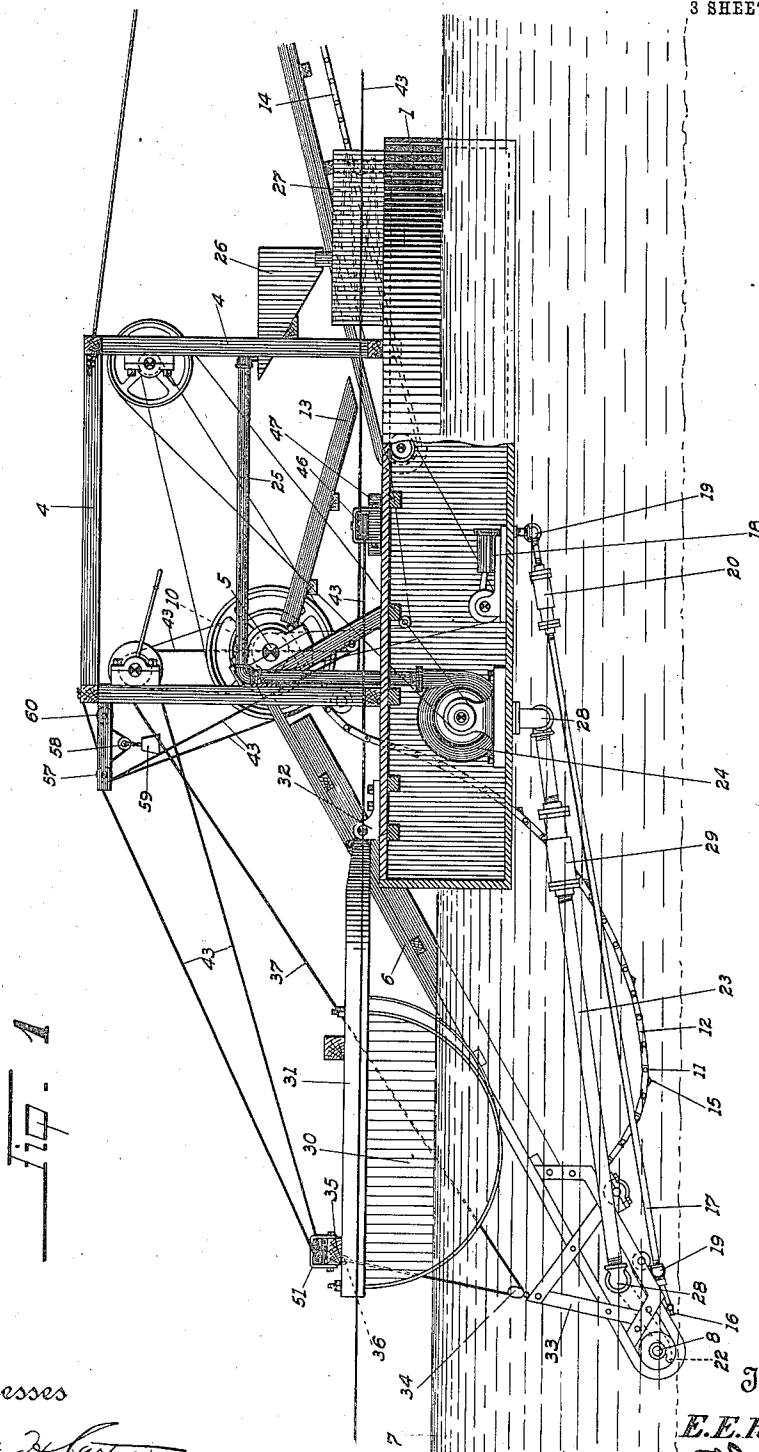


Fig. 1

Witnesses

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J. H. Webster

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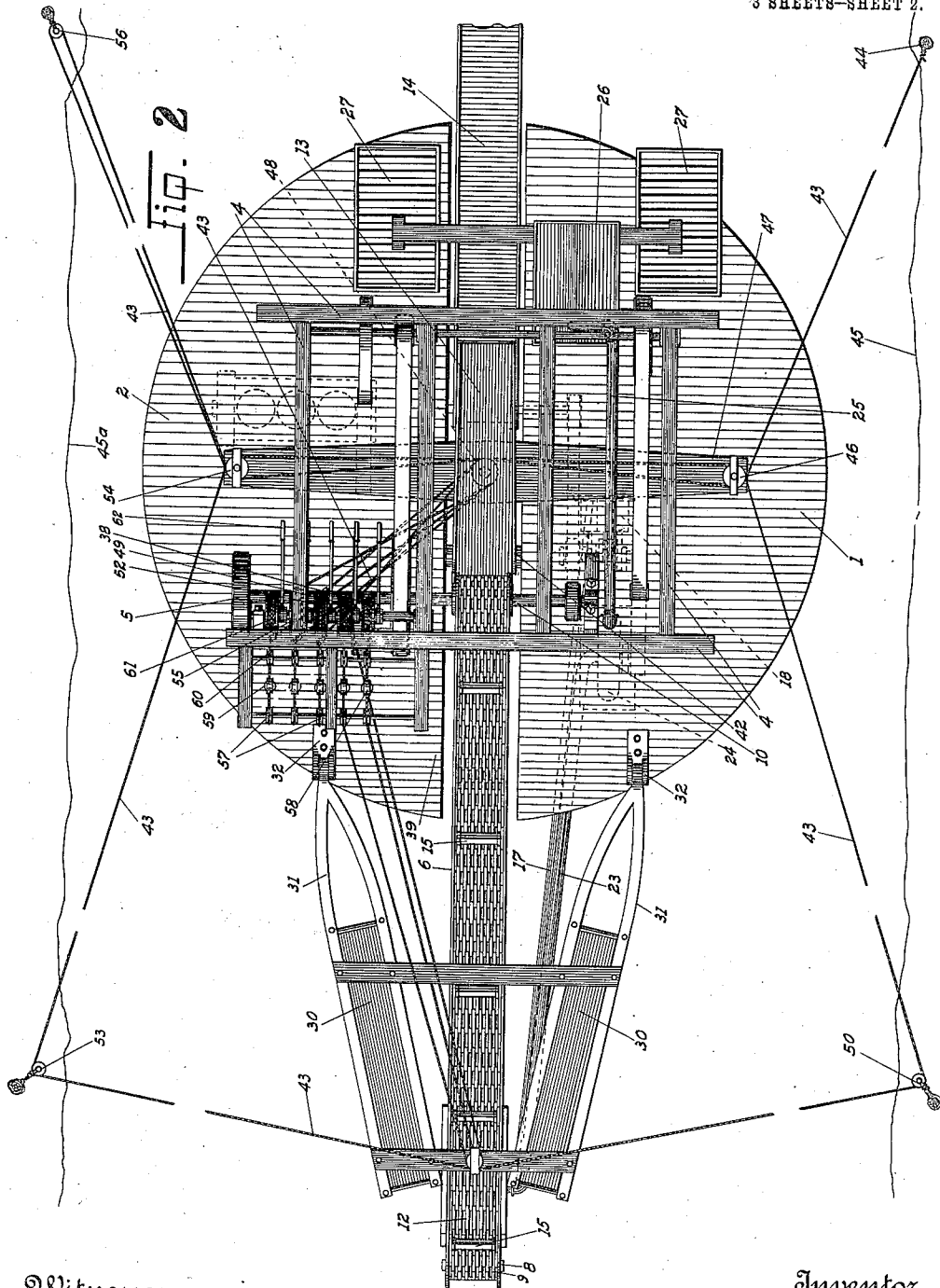
J. B. Bennett
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3 SHEETS-SHEET 2.



Witnesses

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Inventor

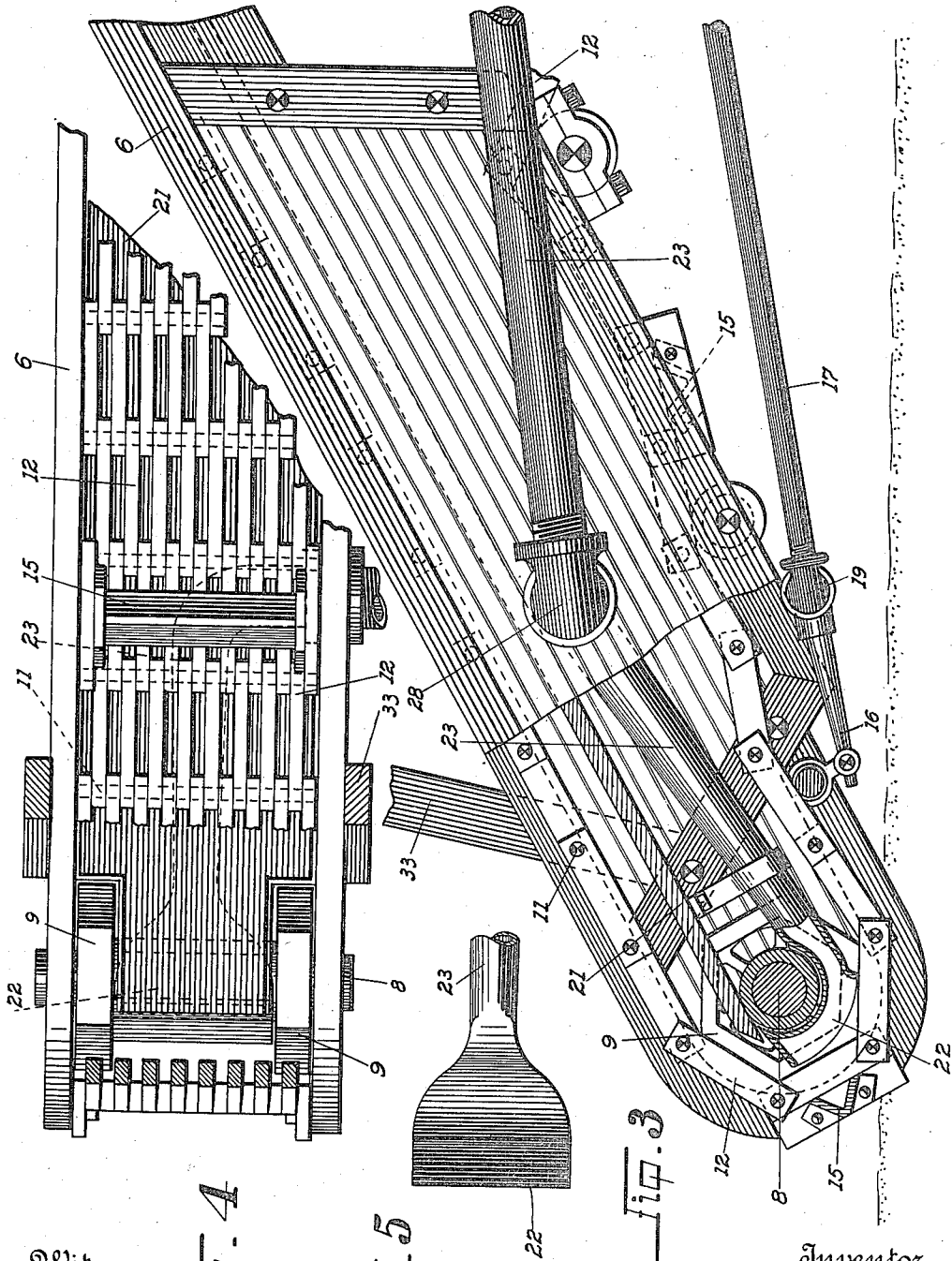
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Witnesses
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Fig. 4

Fig. 5

Fig. 3
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UNITED STATES PATENT OFFICE.

ERASTUS E. ROBERSON, OF LE GRAND, CALIFORNIA, ASSIGNOR OF TWO-THIRDS TO
WILLIAM A. HUELSDONK, OF LE GRAND, CALIFORNIA.

SUCTION-DREDGER.

1,028,387.

Specification of Letters Patent.

Patented June 4, 1912.

Application filed January 3, 1910. Serial No. 535,929.

To all whom it may concern:

Be it known that I, ERASTUS E. ROBERSON, a citizen of the United States, residing at Le Grand, in the county of Merced, State of California, have invented certain new and useful Improvements in Suction-Dredgers; and I do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in dredging apparatus and particularly to gold dredgers used for extracting gold from river beds and the like, the object of the present invention being to produce a suction dredger and an agitating and conveying means co-operating therewith whereby all the loose or free deposits of a river bed will be thoroughly stirred up and segregated to allow all the finer gold bearing material to be delivered to the suction tube, while the larger and valueless deposits of boulders and the like will be carried to the waste dump independently of the suction tube.

A further object of the invention is to have the suction, agitating, stirring and conveying means all flexibly supported whereby they will adjust themselves to fluctuations, in depth of streams, movement of the water or movement of the dredger barges as may occur.

A still further object of the invention is to produce such a device as will be simple and inexpensive and yet exceedingly effective for the purposes for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a side elevation partly broken out of the complete mechanism. Fig. 2 is a top plan view of the complete device. Fig. 3 is a side view partly broken out of the lower end of the conveyer, agitating and suction mechanism. Fig. 4 is a top plan view, partly broken out of the lower end of the conveyer mechanism. Fig. 5 is a top

plan view of the lower end of the suction tube.

Referring now more particularly to the characters of reference on the drawings, 1 and 2 designate two independent preferably semi-circular floats spaced apart and being suitably joined together. On the floats 1 and 2 are upright beams and cross beams to form a rectangular frame 4. Journaled in the frame 4 is a shaft 5 pivotally hung on which is a conveyer frame 6 inclining downward between the floats 1 and 2 to the bottom of the stream 7, in the lower end of which frame 6 is a shaft 8 carrying hexagonal pulleys 9 there being similar alined hexagonal pulleys 10 on the shaft 5 over which pulleys is mounted a chain formed of pins 11 on which are pivotally mounted in staggered order bars 12 or other similar material such as wire or the like, the staggered order described giving the chain a screen like or sieve effect, whereby the finer gold bearing material will fall through, but the heavier boulder like material will be carried on up the conveyer and be discharged onto a chute 13 which in turn delivers to a conveyer 14 which discharges upon waste dumps. On the said chain at spaced intervals are projecting agitating spades 15 which aid in agitating and delivering the gravel to the said conveyer chain. This stirring and agitating process is also increased and facilitated by means of a fluid pressure nozzle 16, which discharges underneath the lower end of said chain 11-12 such nozzle being supplied with air pressure through a pipe 17 from an air compressor 18 such pipe 17 having a flexible knuckle 19 at each end and a slip joint 20 at an intermediate point all for the purpose of compensating any movement of the barges or the conveyer frame.

The finer and gold bearing material in the river bottom and also that which sifts through the chain 11-12 onto an inclined chute 21 on the frame 6 is sucked or drawn into a suction mouth or box 22 having a tube 23 communicating with a suction pump 24 having a discharge pipe 25 leading to a hopper 26 discharging upon the concentrators 27, such tube 23 having flexible joints 28 at each end and an intermediate slip joint 29 all for the purpose of compensating the movement of the barge and conveyer frame. The weight of the frame 6 and coöperating

parts is sustained by two floats 30 having frames 31 hinged to the barges 1 and 2, as at 32. On a frame 33 on the lower end of the frame 6 is a pulley 34 while on a cross beam 5 35 on the frames 31 is a staple 36 to which is secured a cable 37 which cable passes through the pulley 34 and around a drum 38, which cable supports the outer end of the frame 6 on the floats 30 and the drum 38 10 is operated to raise and lower said frame 6.

For changing the position of the barges to facilitate operation I have produced a cable mechanism constructed substantially as follows:—I first anchor the cable 43 at one 15 point 44 on the shore 45 and then extend it around a pulley at a point 46 on a boom 47 mounted on barges 1 and 2 thence said cable passes around a pulley centrally of said boom 47 as at 48 then to and around a drum 20 49 thence to another pulley at the point 48 thence to another pulley at the point 46 thence around a pulley 50 on shore 45, thence around a pulley at a point 51 on the member 35, thence around a drum 52, thence 25 around another pulley at the point 51, thence around another pulley 53 on the opposite shore 45^a, thence around a pulley at a point 54 on the boom 47, thence around a pulley at the point 48 thence around a drum 30 55, thence around another pulley at the point 48, thence around another pulley at the point 54, thence around the pulley 56 on the shore 45^a, thence around another pulley at the point 54, thence around another 35 pulley at the point 48 thence over a pulley 57, thence through a pulley 58 on a depending weight 59 thence over a pulley 60, thence around a drum 61. Each of the drums described has a clutch and lever 62 and to 40 swing the barge in any desired direction the proper lever 62 is operated to connect the proper drum 49, 52, 55, or 61 respectively to connect the power therewith to turn the barge in the desired direction, the remaining 45 drums running free during the operation to permit the cable to slack up or pay out on them as the operating cable winds up. The

weight 59 takes up any slack and keeps the cable taut as is necessary.

From the foregoing description it will be 50 readily seen that I have produced a device which substantially fulfils the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction 55 of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention.

Having thus described my invention what 60 I claim as new and useful and desire to secure by Letters Patent is:

1. A dredger comprising two floats spaced apart, a conveyer pivotally mounted between said floats, a frame hinged to each of 65 said floats and spaced apart, an independent auxiliary float on the outer end of each of said frames, and means connecting said conveyer to said frames as described.

2. A dredger comprising the combination 70 of two floats spaced apart, a projecting frame hinged to each float, an independent auxiliary float on each of said frames, a conveyer pivotally mounted between said floats, means connecting said conveyer with said 75 frames, a suction means operating in connection with said conveyer and a fluid pressure discharge means operating at the base of said conveyer as described.

3. A dredger comprising the combination 80 of two floats spaced apart, an independent frame hinged to each of said floats, an auxiliary float on each of said independent frames a conveyer pivotally mounted between said floats and connected with said 85 frames and means for raising and lowering, said conveyer as described.

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

ERASTUS E. ROBERSON.

Witnesses:

JOSHUA B. WEBSTER,
PERCY S. WEBSTER.