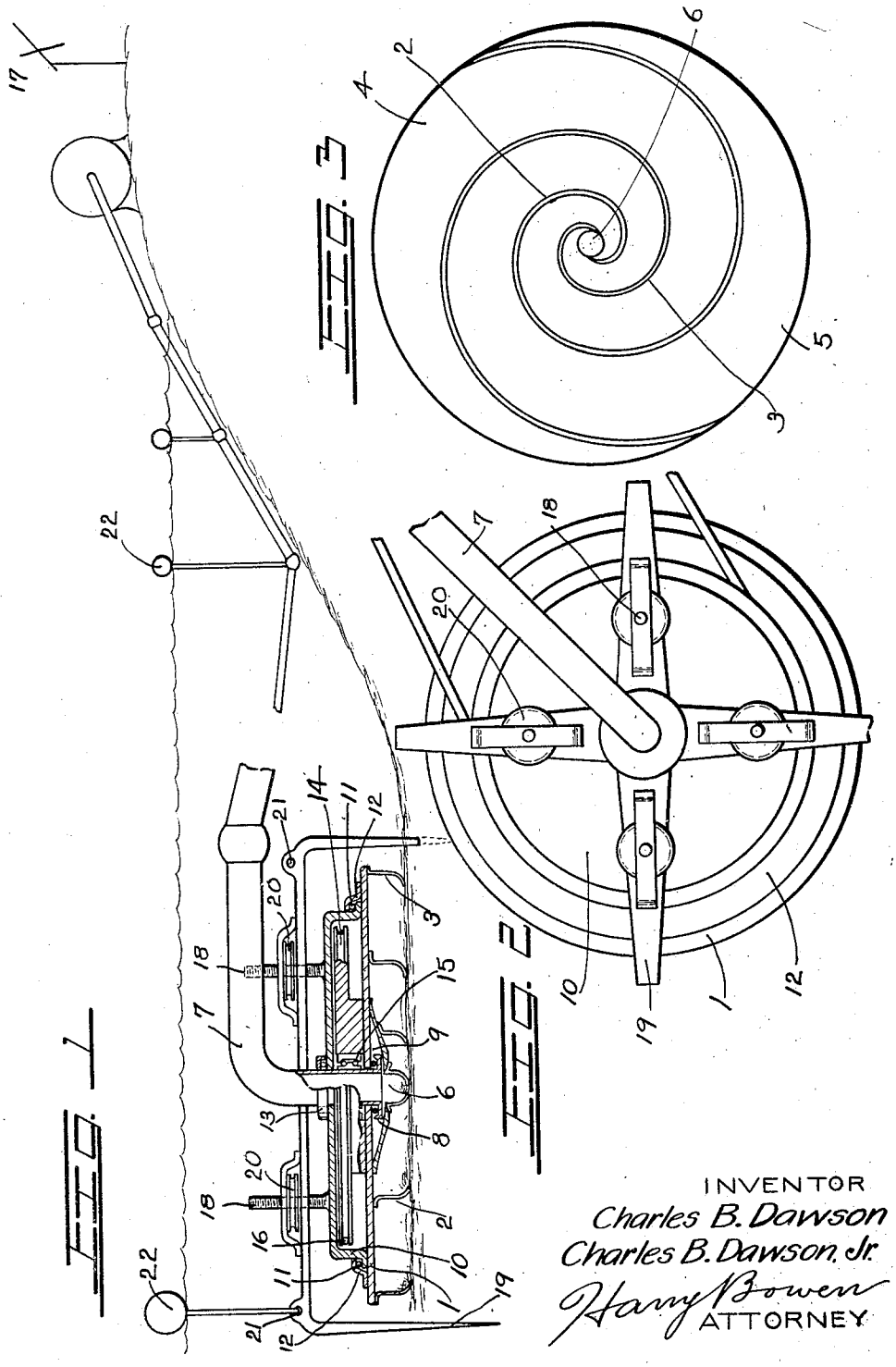
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C. B. DAWSON ET AL

GOLD PLACER MINING SUBMARINE DREDGE

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INVENTOR
Charles B. Dawson
Charles B. Dawson, Jr.
Harry Bowen
ATTORNEY

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CHARLES B. DAWSON AND CHARLES B. DAWSON, JR., OF SEATTLE, WASHINGTON.

GOLD-PLACER-MINING SUBMARINE DREDGE.

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To all whom it may concern:

Be it known that we, CHARLES B. DAWSON and CHARLES B. DAWSON, Jr., citizens of the United States, residing at Seattle, county of King, and State of Washington, have invented a new and useful Gold-Placer-Mining Submarine Dredge; and we do hereby declare that the following is a full, clear, and exact specification, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention is a device for picking up material on the bottom of the ocean and for conveying it to the shore.

The object of the invention is to provide a device that will scoop up material and force it up a pipe in the center of the device by centrifugal motion.

Another object of the invention is to provide a device that may be placed on any surface under water and adjusted so that its working surface will rest in the same plane as the surface upon which it is placed.

And a further object of the invention is to provide a large pan with spiral veins in it that lead to an opening in its center which when rotated will scoop up any material with which it comes in contact and force it up through the opening in its center.

With these ends in view the invention embodies a large flat circular casing with spiral veins in it leading to an opening in its center and a large sheave on the upper side of the casing. This casing is supported through ball-bearings from another casing and the latter casing is adjustably supported through bolts from the legs of a spider that supports the device. Anchors may be attached to the legs of the spider for holding it rigid and small sheaves may be screwed on the bolts that support the latter casing from the spider legs and these sheaves may be operated by cables from the shore. A large cable may be placed around the sheave on the casing with the spiral veins in it and this cable may also extend to another sheave on an engine in a power house on the shore which will operate it. A pipe with universal joints in it may extend from the opening in the center of the large casing to a pump on the shore so that the material forced up through the opening may be pumped to the shore.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings, wherein:—

Figure 1 is a side elevation with the casings broken away on the center line and the continuation of the pipe and cable to the shore shown on a somewhat smaller scale.

Figure 2 is a top plan view of the dredge.

Figure 3 is the bottom view.

In the drawings we have shown our device as it would be constructed wherein numeral 1 indicates the large flat circular casing which has spirals in it formed by the veins 2 and 3 and these lead from openings 4 and 5 in the outer edge to the opening 6 in the center. The center of the casing 1 slopes downward as shown in Figure 1 and a pipe 7 with a flange 8 on its lower end extends through the opening, and into the space 9 in the casing. Balls are placed between the flange 8 and the inner side of the casing which form a ball thrust bearing at the end of the pipe. The pipe 7 has universal joints in it and extends to a pump on the shore. The casing 1 is supported from a somewhat smaller casing 10 through the ball bearings 11 which are formed by placing balls on flanges around the outer and lower edge of the casing 10 and by placing a projection 12 from the casing 1 over them. The pipe 7 has a collar 13 around it above the casing 10 and balls are placed between this collar and the top of the casing to form a ball bearing between the pipe and casing.

A large sheave 14 inside of the casing 10, is fixedly attached to the casing 1 and rotates on bearings 15 on the pipe. The casing 10 has openings in it to permit a cable 16 to pass through it, around the sheave 14, and out again. This cable 16 extends through the water and up to an engine in a power house 17 on the shore from which it is driven.

The casing 10 is supported through bolts 18 from the legs 19 of a spider and these bolts have sheaves 20 screwed on them which may be turned from small cables not shown extending from the shore so that either side of the casings 1 and 10 may be raised or lowered until the working surface is parallel with the surface of the material upon which it is working. The legs of the spider may also have eyes 21 on them through which cables from anchors may be attached, and buoys 22 may also be attached to them for locating the dredge.

It will be understood that changes may be made in the construction without departing from the spirit of the invention. One of which changes may be in the number of spiral veins used, another may be in the number of legs 19 of the spider and still another may be in the means for adjusting the working surface of the device.

The construction will be readily understood from the foregoing description. To use the device it may be lowered at any desired location and as it reaches the surface of the material to be dredged the pointed ends of the legs 19 will be forced down into the material by the weight of the device and then the lower surface of the casing 1 may be adjusted by turning the sheaves 20 with small cables from the shore until it is parallel with the surface of the material. The engine and power house 17 and the pump 9 may then be started and as the cable 16 moves it will rotate the casing 1 and the spiral veins 2 and 3, will scrape up the material and force it up through the opening 6. The pump will then suck this material up through the pipe 7 to any desired container on the shore. It will also be seen that additional cables may be placed through the eyes 21 and attached to anchors in order to hold the device rigid.

Having thus fully described the invention, what we claim as new and desire to secure by Letters Patent, is:—

In a dredge having spiral veins supported in a spider and in which the veins lead to an opening in the center and are provided with a sheave by which they may be rotated; the carrying of the pipe leading from the opening up through the spiders supporting the veins, and the arranging of said veins so that they are somewhat shorter in the center in order to decrease the area between them so that the velocity of the material passing through them will be increased.

CHARLES B. DAWSON.
CHARLES B. DAWSON, JR.