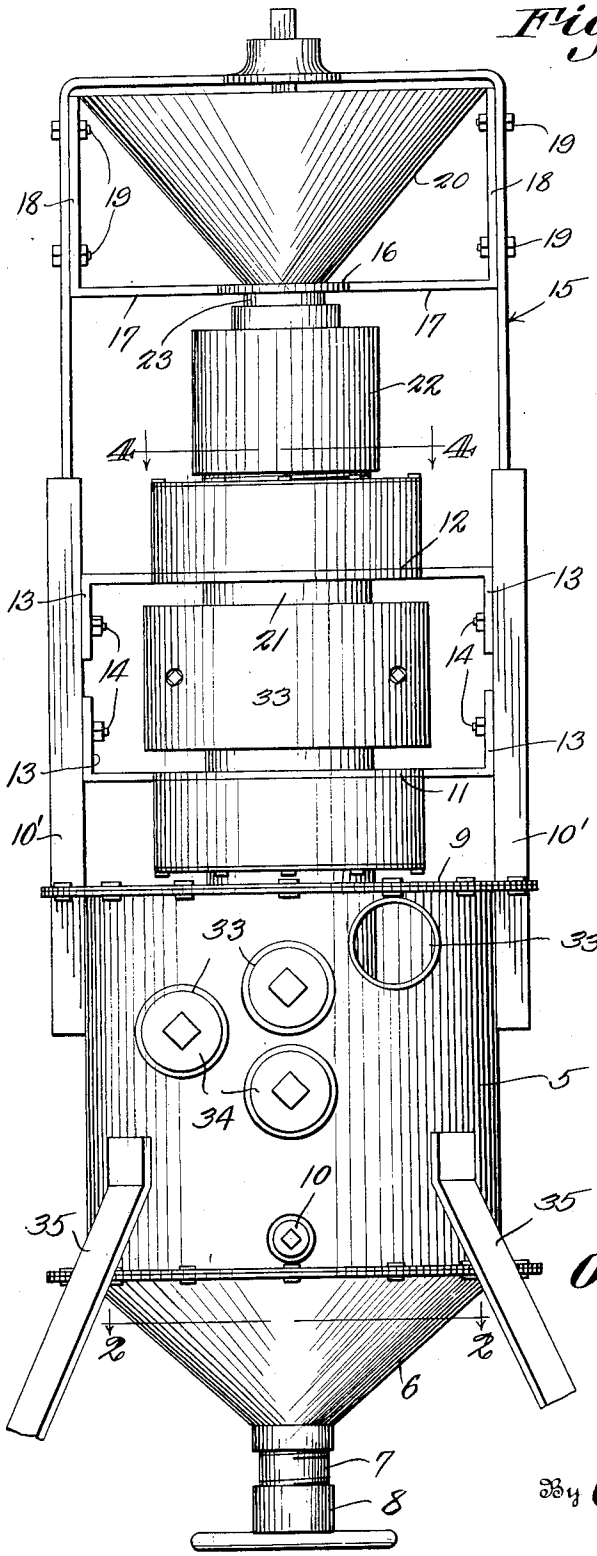
Nov. 21, 1933. O. B. GERMOND 1,936,130

CENTRIFUGAL SEPARATOR

Filed Dec. 28, 1931 2 Sheets-Sheet 1

Fig. 1.



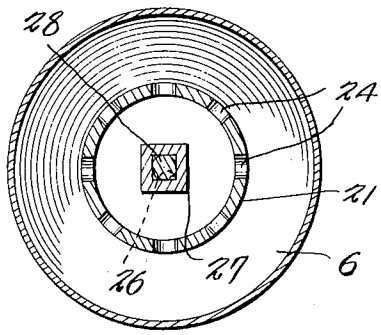


Fig. 2.

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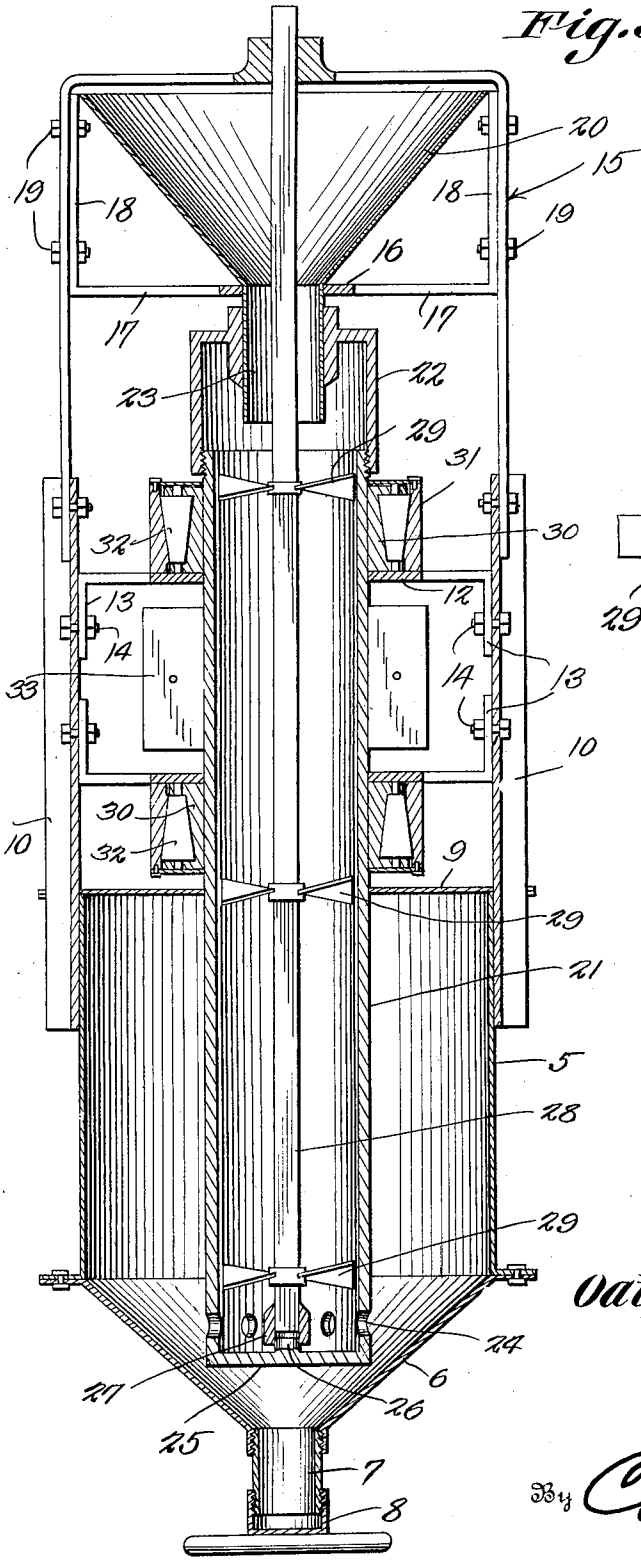
Attorneys

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CENTRIFUGAL SEPARATOR

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Fig. 3.



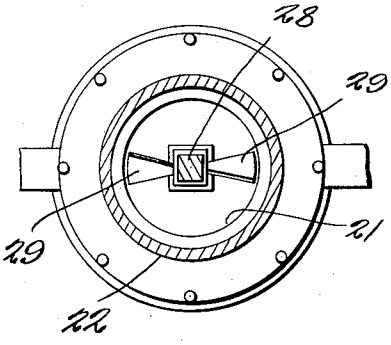


Fig. 4.

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1,936,130

CENTRIFUGAL SEPARATOR

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Application December 28, 1931
Serial No. 583,484

2 Claims. (Cl. 209—159)

This invention relates to a separator designed for use in recovering gold and other precious metal from ocean or beach sand.

An important object of the invention is the provision of a machine of this character so constructed that the material will be agitated and forced downwardly into the lower end of the cylinder, the heavier particles falling to the bottom of the cylinder while the lighter particles are forced laterally through the discharge openings of the cylinder.

Another object of the invention is to provide a bowl into which the material is deposited during the separating operation, the bowl having discharge openings disposed at various levels, thereby adapting the device for use in separating metals from liquids of various specific gravities.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is a front elevational view of a separator constructed in accordance with the invention.

Figure 2 is a sectional view taken on line 2—2 of Figure 1.

Figure 3 is a vertical sectional view through the separator.

Figure 4 is a sectional view taken on line 4—4 of Figure 1.

Referring to the drawings in detail, the device comprises a body portion or bowl indicated by the reference character 5, the same being provided with a funnel-like bottom 6 to which the pipe 7 is connected, the pipe 7 being formed with external threads to cooperate with the threads of the cup 8 which forms a cap for the pipe 7.

The upper end of the body portion is closed by means of the disk-like closure 9, which is bolted to the body portion.

Disposed in the wall of the body portion, near the funnel-like bottom 6, is an opening normally closed by means of the plug 10, which opening permits of the draining of the body portion 5, while the cap 8 remains in position.

Openings 33 are formed in the wall of the body portion, the openings being arranged in vertical spaced relation with each other, all of the openings with the exception of one being closed, during the operation of the machine, the openings allowing the material to flow from the body portion.

Caps 34 close the openings, and in the use of the device, one of the caps is removed, to allow the material to flow therefrom.

The cap selected to be removed, is determined by the specific gravity of the material under treatment, since it will be obvious that it is necessary to discharge the material of a low specific gravity, at a much higher level than a material of a high specific gravity, in order to properly separate the valuable or heavy particles from the valueless or light material.

Angle bars 10′ extend upwardly from the body portion with which they are connected, and provide supports for the bearing rings 11 and 12, which have right angled portions 13 formed with openings to receive the bolts 14, whereby the bearing rings are secured in position.

The reference character 15 designates a frame that has its lower end bolted to the angle bars 10′, the frame being extended above the upper ends of the angle bars.

Forming a part of the frame 15, is a supporting ring 16 that has laterally extended arms 17 formed with upstanding end portions 18 that are bolted to the frame 15, at 19.

This supporting ring 16 provides a support for the feed hopper 20. The device also includes a rotary cylinder 21 that has a threaded upper extremity to receive threads of the cylinder cap 22, which cylinder cap is formed with a bearing to receive the spout 23 of the hopper 20, to the end that the cylinder 22 may rotate within the body portion.

This cylinder is of a length to extend to a point an appreciable distance between the funnel-like bottom 6, the lower end of the cylinder being formed with openings 24 to permit the heavier particles to pass lateraly from the cylinder and be deposited in the bowl 5.

As shown, the lower end of the cylinder is closed by means of the bottom 25, which is formed with an upstanding central bearing 26 which is in the form of a pin over which the bearing socket 27 is positioned, the bearing socket being carried by the shaft 28, which extends upwardly and passes through an opening formed in the frame 15, at the top of the device.

This shaft 28 is square in cross section, and supports the feed vanes or agitators 29, there being one of these vanes at the lower end of the shaft 28, another near the upper end of the cylinder 22, and still another arranged on the

shaft 28 to operate at a point intermediate the ends of the cylinder.

These feed vanes are arranged in such a way that they will direct material downwardly, as the cylinder rotates.

Secured to the cylinder 22, are bearing races 30 that cooperate with the races 31 carried by the bearing rings 11 and 12, there being provided roller bearings 32 between the bearing races, to permit the cylinder to rotate freely, regardless of the weight it carries.

The reference character 33 designates a pulley over which a power belt may operate, in order to rotate the cylinder 22.

The device is supported by means of the supporting legs 35 which are secured to the body portion or bowl 5, as clearly shown by Figure 1 of the drawings.

From the foregoing it will be seen that as the cylinder 22 is rotated, and material is fed to the cylinder, the vanes 29 will act to direct the material towards the bottom of the cylinder, the heavier particles dropping into the cup 8, while the lighter particles pass off through the body portion.

Having thus described the invention what is claimed is.

1. A separator comprising a bowl-like body portion, supporting bars rising from the body portion, a rotary cylinder extending into the body portion and having a closed lower end, horizontal bars connected with the supporting bars, bearing rings connected with the horizontal bars and in which the cylinder rotates, said cylinder having openings spaced from the closed end thereof to permit material to collect at the bottom of the cylinder and overflow through the openings, a stationary shaft extending into the cylinder, agitators on the shaft and disposed at angles to direct material downwardly as the cylinder rotates, and a funnel for directing material into the upper end of the cylinder.

2. A separator for recovering precious metals, comprising a body portion, vertical supporting bars rising from the body portion, a vertical rotary cylinder extending into the body portion and having a closed lower end, said cylinder having openings spaced from the closed end thereof to permit material collecting on the bottom of the cylinder to overflow into the body portion, bearings carried by the cylinder, arms secured to the supporting bars, stationary bearings on the horizontal bars and cooperating with the first mentioned bearings in supporting the cylinder for rotary movement, a stationary shaft extending into the cylinder, agitators mounted on the shaft and extending to points adjacent to the wall of the cylinder, said agitators being disposed to direct material downwardly when the cylinder is rotated around the shaft, and a funnel-like member for directing material into the cylinder.

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