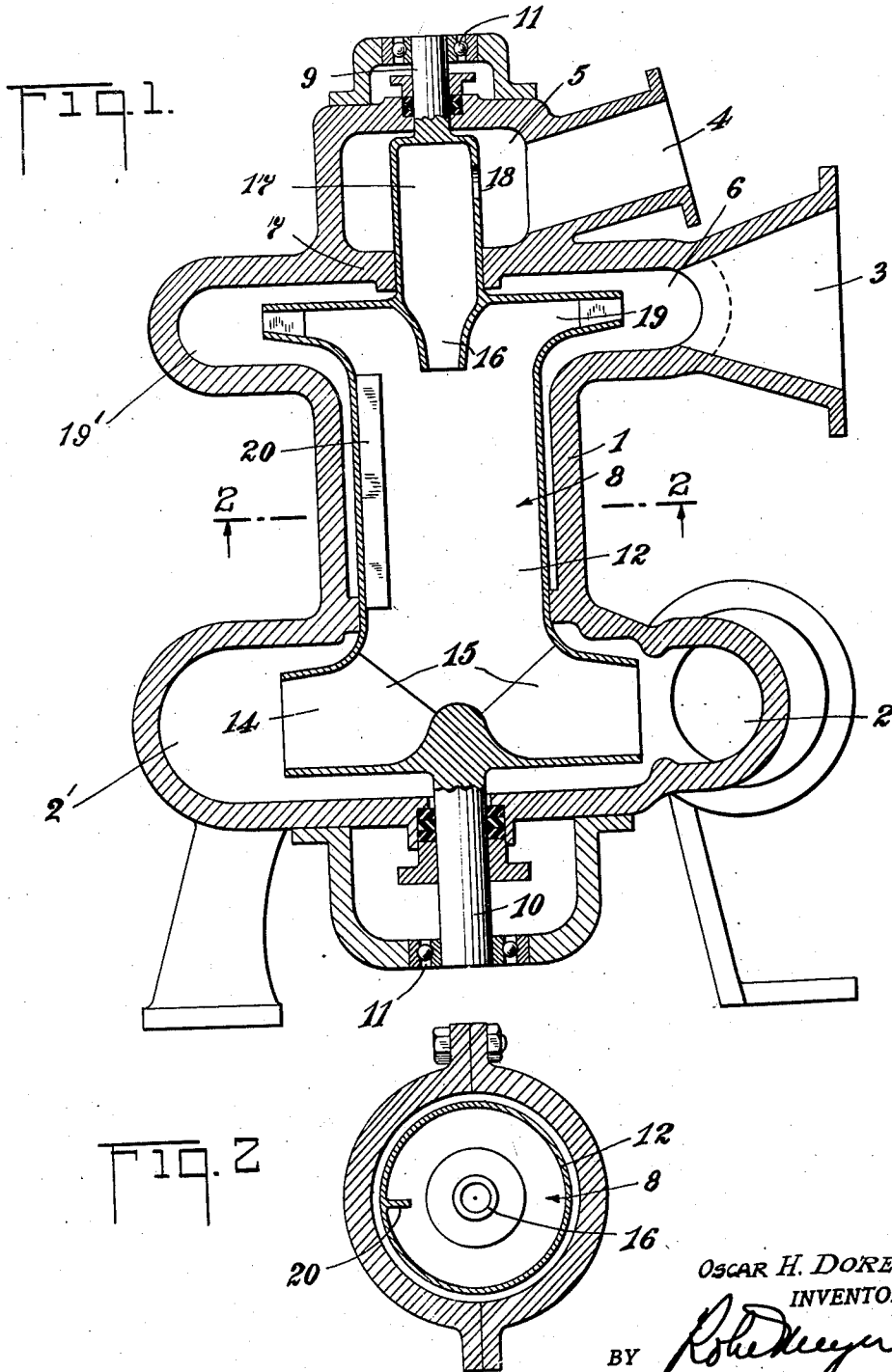


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2 Claims. (Cl. 233—24)

This invention relates to centrifugal separators, and an object of the invention is to provide a separator which will separate heavy or unclean liquid containing foreign matter from lighter or cleaner liquid by centrifugal action.

Another object of the invention is to provide a separator which is compact, relatively simple in construction and will separate or filter a relatively large quantity of liquid in proportion to its size and with relation to filters of approved type.

With these and other objects in view as may appear from the accompanying specification, the invention consists of various features of construction and combination of parts, which will be first described in connection with the accompanying drawing, showing a centrifugal separator of the preferred form, and the features forming the invention will be specifically pointed out in the claims.

In the drawing:

Fig. 1 is a longitudinal section through the improved separator.

Fig. 2 is a cross section through the separator taken on the line 2—2 of Fig. 1.

Referring more particularly to the drawing, the improved centrifugal separator includes a casing 1 which has an inlet 2 opening into the chamber 2' for liquid under pressure at one end thereof, and has two outlets; namely, the outlet 3 for the impure or heavy liquid and the outlet 4 for the clean, pure or lighter liquid. The outlet 4 communicates with a chamber 5 formed in the casing 1 which chamber is separated from the chamber 6 with which the outlet 3 communicates by means of a partition 7.

A rotor 8 is rotatably mounted in the casing 1 in any suitable manner such as by means of shaft ends 9 and 10 and suitable bearings 11.

The rotor 8 comprises a cylindrical body 12 having a liquid or propelling wheel 14 on one end thereof which is positioned adjacent to the inlet 2. The wheel 14 has vanes 15 therein so that the fluid flowing into the casing 1, under pressure, and engaging the wheel 14 will rotate the rotor 8.

The liquid to be filtered or separated, after passing into the casing 1 and through the liquid wheel 14, passes longitudinally through the cylindrical body 12 of the rotor where the centrifugal action set up by the wheel 14 will cause the lighter fluid to flow to the center and the heavy liquid or the impurities in the liquid to flow towards the periphery of the whirling column. The rotor 8 has a nozzle 16 centrally located at its end remote from the liquid wheel 14, which nozzle serves as an outlet for the lighter or clean liquid. The clean liquid passes from the nozzle 16 into the substantially cylindrical body 17 from which it flows through the outlet opening 18

into the chamber 5 and thence out through the outlet 4.

The heavy liquid containing the impurities is picked up by a pump impeller 19 formed on the rotor concentrically of the nozzle 16. The impeller 19 forces the impure or heavy liquid outwardly through the chamber 19' and outlet 3.

The cylindrical body 12 has a longitudinally extending radial vane 20 which is relatively narrow having its inner edge terminating a considerable distance from the longitudinal axis of the cylindrical body 12. The vane 20 facilitates the separation of the heavy or dirty fluid containing the impurities and the lighter or clean liquid.

It will be understood that the invention is not to be limited to the specific construction or arrangement of parts shown, but that these may be modified widely within the invention as defined by the claims.

What is claimed is:

1. In a centrifugal separator, a stationary casing having a pair of spaced chambers thereon and a cylindrical portion connecting said chambers, said casing having an outlet for clean or light liquid, and an outlet for impure or heavy liquid, said latter outlet opening into one of said chambers, a rotor in said casing including a hollow cylindrical body mounted within said cylindrical portion and in sealed relation therewith, a propeller wheel at one end of said body and positioned in one of said chambers, an impeller at the other end of said body and positioned in the other chamber, and a substantially cylindrical outlet for light liquid axially disposed opening into said rotor at one end and having an outlet communicating with said casing outlet for light liquid.

2. In a centrifugal separator, a stationary casing having a pair of spaced chambers thereon and a cylindrical portion connecting said chambers, said casing having an outlet for clean or light liquid, and an outlet for impure or heavy liquid, said latter outlet opening into one of said chambers, a rotor in said casing including a hollow cylindrical body mounted within said cylindrical portion and in sealed relation therewith, a propeller wheel at one end of said body and positioned in one of said chambers, an impeller at the other end of said body and positioned in the other chamber, a substantially cylindrical outlet for light liquid axially disposed opening into said rotor at one end and having an outlet communicating with said casing outlet for light liquid, and a radial rib extending longitudinally in said cylindrical body between said propeller and im-

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