L. F. FRASER.

SEPARATOR.

APPLICATION FILED MAY 18, 1920.

1,390,898.

Patented Sept. 13, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

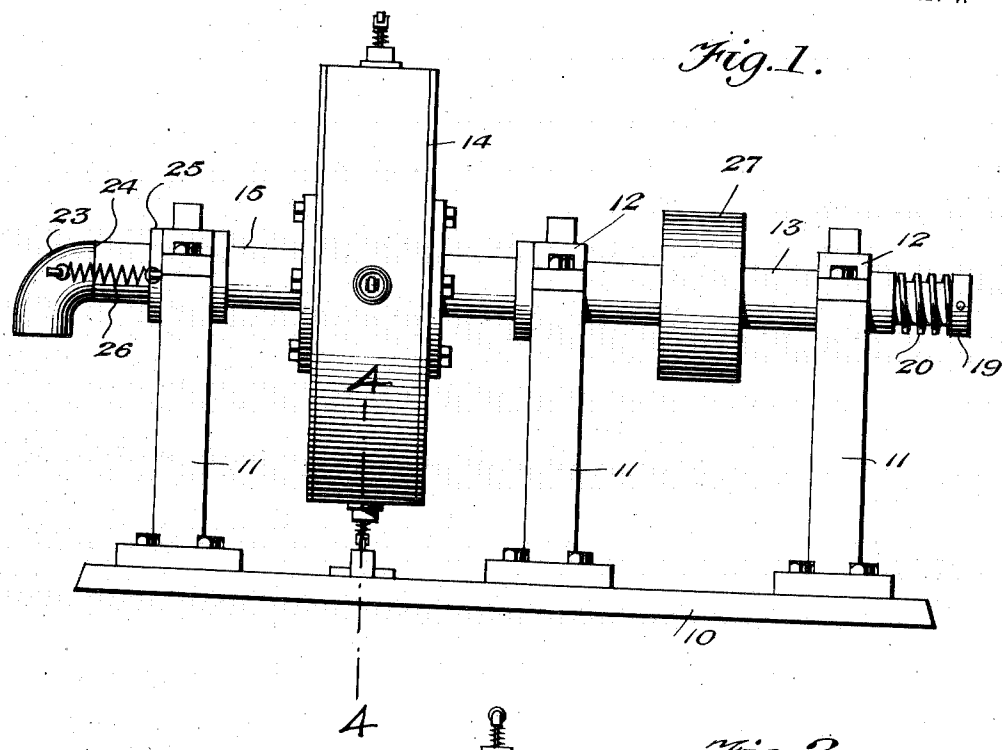
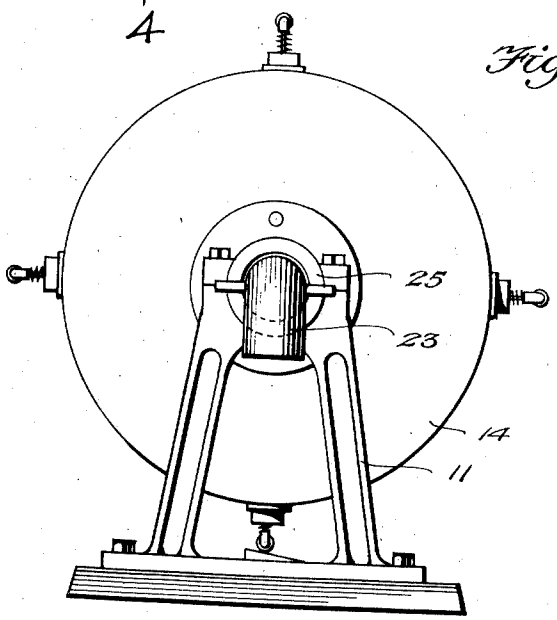


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

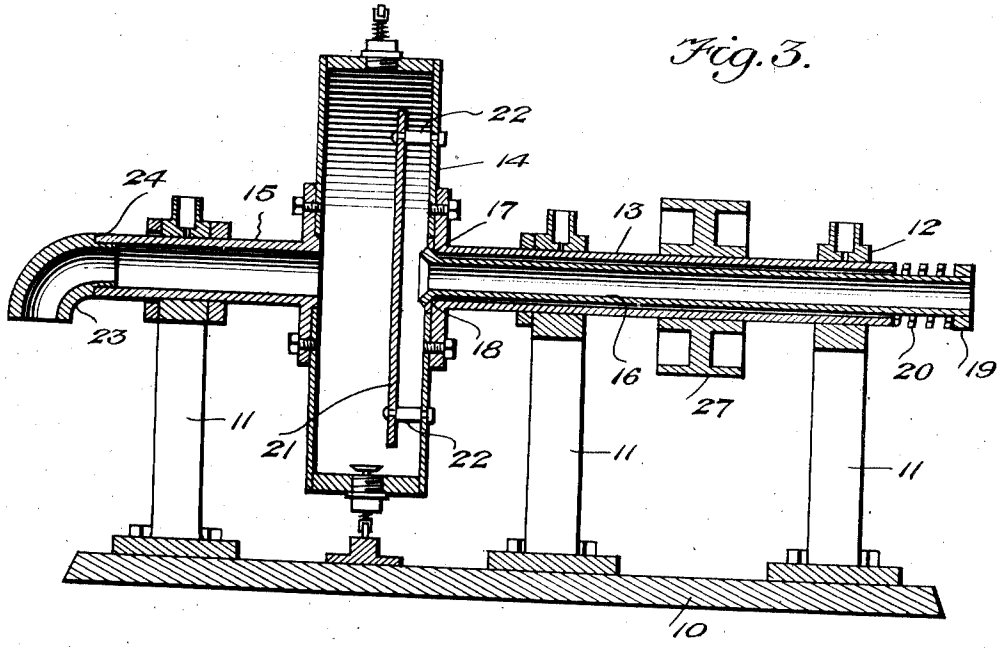
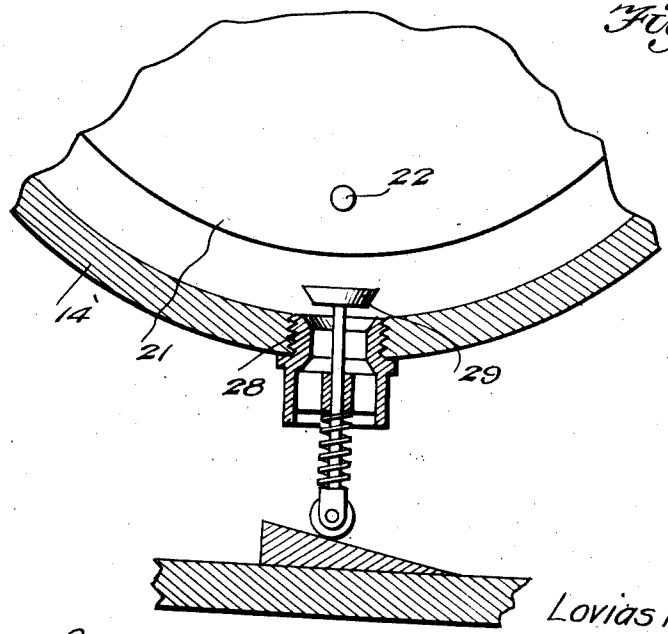


Fig. 4.



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UNITED STATES PATENT OFFICE.

LOVIAS F. FRASER, OF SHAMROCK, OKLAHOMA.

SEPARATOR.

1,390,898. Specification of Letters Patent. Patented Sept. 13, 1921.

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To all whom it may concern:

Be it known that I, LOVIAS F. FRASER, citizen of United States of America, residing at Shamrock, in the county of Creek and State of Oklahoma, have invented new and useful Improvements in Separators, of which the following is a specification.

Separator.

This invention relates to separators especially designed for separating B. S. and water from crude oil.

An object of the present invention is the provision of a separator of the centrifugal type in which the B. S. and water is separated from the oil and settled in the bottom of the device from where it is automatically discharged, the lighter oil passing out through the centrally disposed outlet.

Another object is the provision of a device of this character which is simple in construction and efficient in operation.

Other objects and advantages of the invention will appear as the following description is read in connection with the accompanying drawings.

In the drawings:—

Figure 1 is a side elevation of a separator embodying the present invention.

Fig. 2 is an end view of the same.

Fig. 3 is a vertical longitudinal section.

Fig. 4 is an enlarged section on the line 4—4 of Fig. 1.

Referring to the drawings in detail, wherein like characters of reference denote corresponding parts, the invention comprises a base 10 upon which are mounted a plurality of standards 11, carrying bearings 12. Two of these bearings provide bearings for the rotation of a tubular shaft or sleeve 13, to one end of which is connected a cylinder or drum 14. Also connected to the cylinder or drum in alinement with the tubular shaft or sleeve 13, is another tubular shaft or sleeve 15, the latter revolving in the bearing of the other standard 11. The sleeves 13 and 15, are suitably connected to the drum casing connecting with the interior thereof as shown in Fig. 3.

Extending through the sleeve 13 is a pipe 16, the inner end of which is flared as shown at 17 for engagement with a seat 18 provided at the point of connection of the sleeve 13 with the drum. The opposite end of this pipe is adapted for connection with a suitable source of crude oil supply and is provided with a collar 19 at this end. Located upon the pipes 16 between the sleeve 13 and the collar 19 is a coiled spring 20, the latter acting to maintain the flared end of the pipe upon the seat 18.

Located within the drum 14 is a baffle wall in the form of a circular plate or disk 21, the latter being spaced from the inner wall of the drum and supported upon bolts 22 carried by the drum.

The outer end of the pipe 15 is provided with an elbow 23, one arm of this elbow being reduced to form a shoulder 24 which engages the adjacent end of the pipe 15. Surrounding this pipe is a stationary yoke or collar 25 which is connected to the elbow 23 by springs 26 located upon opposite sides of the pipe.

Mounted upon the sleeve 13 is a pulley 27 which is driven from any suitable source of power so as to revolve the drum 14, whereupon oil entering the drum through the pipe 16 will contact with the baffle wall or disk 21. The oil will thus be separated and its heavier products (the B. S. and water) will be turned outward against the inner periphery of the drum, and will supply to the drum the refined oil passing outward through the pipe 15 and the elbow 23, from where it is conveyed through suitable piping to tanks or reservoirs (not shown).

The drum 13 is provided around its periphery with spaced outlet ports 28 which are controlled by valves 29, the said valves being normally closed and of spring actuated type. Secured to the base 10 and located in the path of the valves 29 is a trip 30 which engages and opens the valves as they reach their lowermost position and provide for the discharge of the B. S. and water which has been separated from the oil.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having described the invention what is claimed is: —

A separator comprising a rotatable drum, a sleeve extending from one end of the drum, a supply pipe extending from said sleeve and communicating with the interior of the drum and forming a bearing for said drum, a flared inner end for said pipe, a seat for said end, yieldable means for holding the flared end of the pipe upon the seat, a discharge pipe leading from the drum and automatically operated valve controlled outlet ports arranged around the periphery of the drum.

In testimony whereof I affix my signature.

LOVIAS F. FRASER.