No. 850,976. PATENTED APR. 23, 1907.

W. S. SHELTON.

PUMP.

APPLICATION FILED JULY 10, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

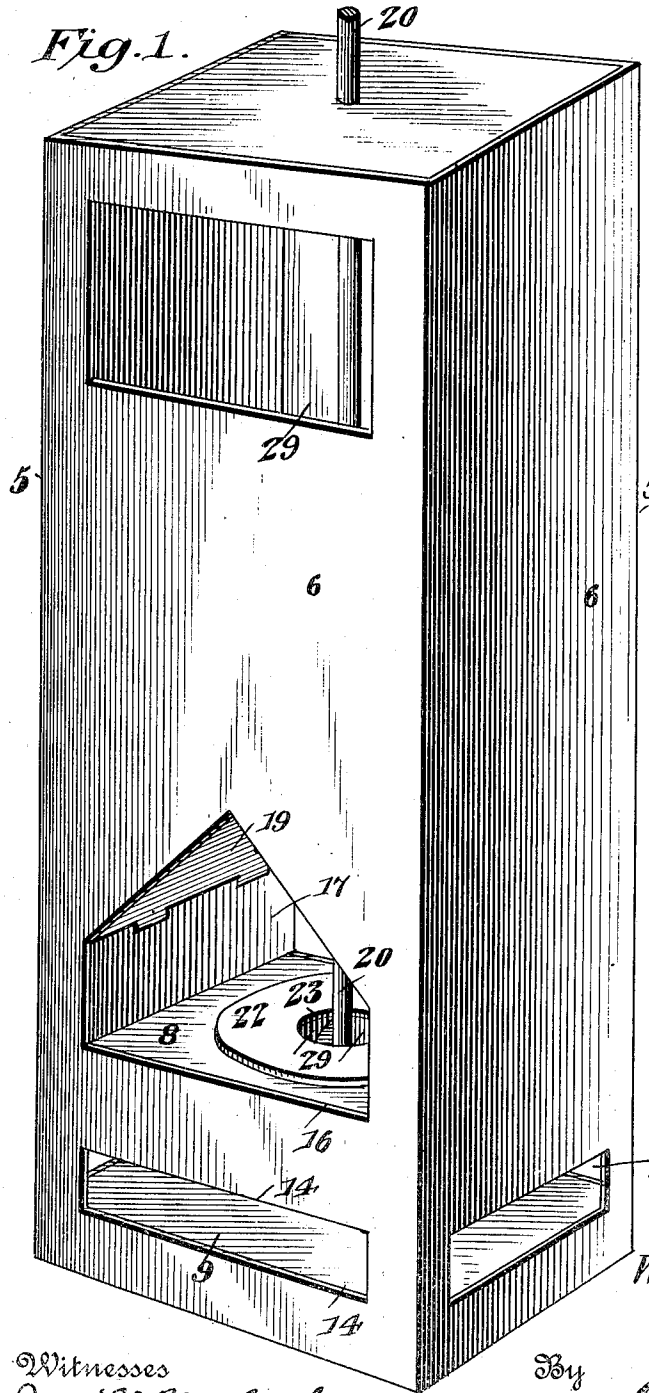
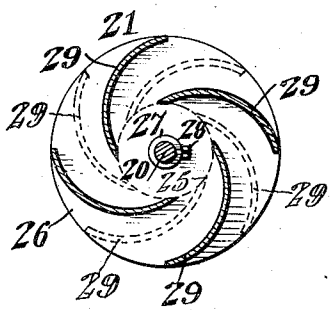


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 2.

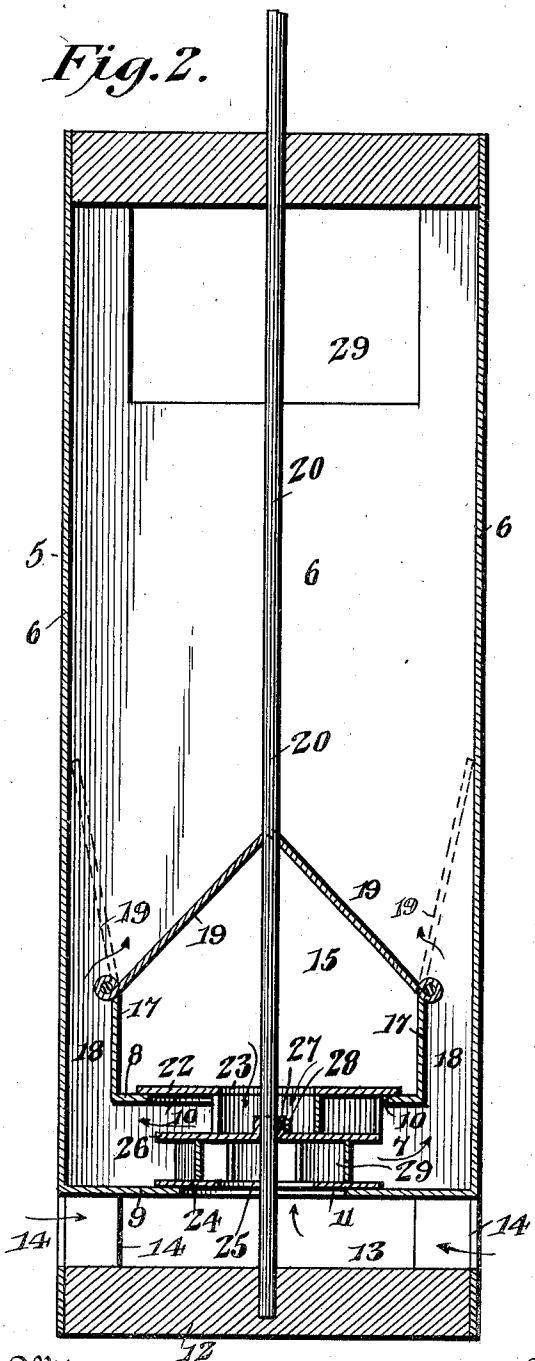
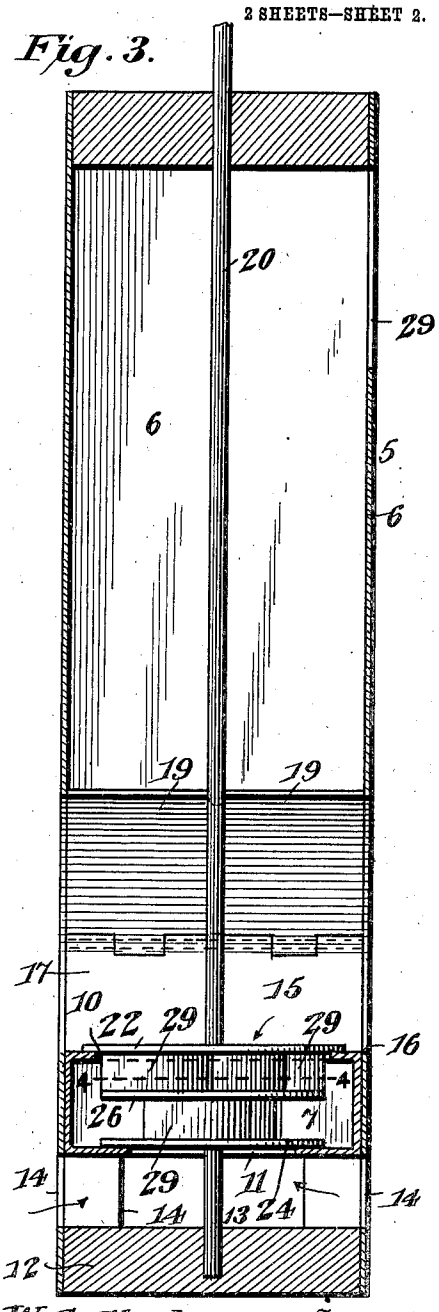


Fig. 3.



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PUMP.

No. 850,976. Specification of Letters Patent. Patented April 23, 1907.

Application filed July 10, 1906. Serial No. 325,519.

To all whom it may concern:

Be it known that I, WINFIELD S. SHELTON, a citizen of the United States, residing at Jennings, in Calcasieu parish and State of Louisiana, have invented a new and useful Pump, of which the following is a specification.

This invention relates more particularly to pumps of that character wherein rotary pistons are employed; and one of the principal objects is to provide an exceedingly-simple structure which will permit the ready removal of the piston without the necessity of dismembering the remaining portions of the pump.

A still further and important object is to provide novel pump mechanism that will have a comparatively great capacity without materially increasing the size or bulk of the same as a whole.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of the pump. Fig. 2 is a vertical sectional view therethrough. Fig. 3 is a sectional view at right angles to Fig. 2. Fig. 4 is a horizontal sectional view through the piston member and on the line 4 4 of Fig. 3.

Similar reference-numerals designate corresponding parts in all the figures of the drawings.

In the structure disclosed a casing 5 is employed, which in the present embodiment consists of angularly-disposed upright walls 6. It will of course be understood that the shape of this casing may be varied as desired. A piston-chamber 7 is located in the lower portion of the casing and comprises a top wall 8 and a bottom wall 9, said walls being respectively provided with upper and lower openings 10 and 11. The bottom wall 9 is disposed above a base 12, that constitutes the lower end of the casing and forms therewith a lower inlet 13, communicating with the piston member 7 through the bottom opening 11. The side walls are provided with suitable openings 14, that permit the fluid to be elevated to flow freely into the inlet 13 and thence into the chamber 7. An upper inlet 15 is formed over the piston-chamber 7 and opens, as shown at 16, through opposite side walls of the casing. The inner side walls 17 of the inlet 15 are spaced from the other opposite side walls of the casing and form therewith discharge-channels 18, communicating at their lower ends with the piston-chamber and discharging into the main body of the casing above the inlet 15. The inlet 15 is separated from said main portion of the interior of the casing by a partition comprising angularly-disposed sections 19, hinged at their outer edges to the upper ends of the walls 17, the inner edges of the sections being abutted. The sections thus constitute supports for each other and are capable of swinging outwardly, as shown in dotted lines in Fig. 2, so as to throw the inlet 15 into direct communication with the interior of the casing. Under ordinary conditions, however, the sections are disposed in abutted relation, as shown in full lines in Fig. 2, in which case the inlet 15 is cut off from the interior of the casing.

A driving-shaft 20 extends longitudinally down into the casing between the sections 19 and through the piston-chamber 7, said driving-shaft being capable of upward longitudinal movement. Mounted on this shaft and normally located in the piston-chamber is a piston, (designated as a whole by the reference-numeral 21.) The piston comprises an upper disk 22, provided with a central opening 23, a lower disk 24, provided with a central opening 25, and an intermediate disk 26, through which the shaft snugly passes, said intermediate disk being preferably provided with a hub 27, having a set-screw 28, that engages the shaft. Interposed between and secured to the different disks are outwardly-extending curved blades 29, that have their inner ends terminating at the openings 23 and 24. The upper disk 22 is larger than the opening 10 in the upper chamber-wall 8 and covers the same. The opening 11 in the lower chamber-wall 9 is smaller than the upper opening 10 and is covered by the lowermost disk 24, said disk 24 overlapping the wall 9, as shown in Fig. 2, and being of small enough diameter to pass freely through the upper chamber-wall opening 10. The same is true of the intermediate disk 26.

With the parts assembled as shown in the drawings the operation of the structure may be briefly described as follows: The pump is placed in the liquid to be elevated until the level of the liquid is above the piston-chamber, or, in other words, until said liquid will flow freely into the upper inlet 15. If now the driving-shaft 20 is rotated in the proper direction, it will be evident that the liquid will be thrown outwardly in the piston-cham-

ber and drawn inwardly through the central openings 23 and 25 of the piston. The liquid discharged from said chamber will be elevated through the channels 18 and on passing over the partition 19 will fill the casing and discharge through the outlet 29. Inasmuch as the piston has a doubled inlet and a double set of upper and lower blades, it will be evident that its capacity is comparatively great, so that the pump will elevate a correspondingly great amount of liquid. At the same time the said piston is readily removable from the chamber, for upon raising the driving-shaft 20 this piston can pass freely through the inlet and upwardly into the casing, inasmuch as the partition-sections 19 will swing freely outwardly to permit the passage of said piston. It will be thus evident that the piston can be removed whenever desired without the necessity of dismembering the remainder of the structure.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pump of the character described, the combination with a casing, of a partition movably mounted in and extending across the casing, and a rotary piston detachably journaled in the casing below the partition and movable upwardly past the same, said partition being movable out of the way of the piston during the detachment of the latter.

2. In a pump of the character described, the combination with a casing, of a partition hingedly mounted in and extending across the casing, and a rotary piston detachably mounted in the casing below the partition and movable upwardly past the same, said partition being capable of a swinging movement out of the path of movement of the piston when the latter is raised.

3. In a pump of the character described, the combination with a casing, of a partition hingedly mounted in the casing and disposed at an inclination therein, a rotary piston detachably journaled in the casing below the partition and movable upwardly past the same, said partition swinging upwardly out of the way of the piston, and a driving-shaft connected to the piston and passing through the partition.

4. In a pump of the character described, the combination with a casing, of a partition comprising separable sections movably mounted in the casing and extending across the same, and a rotary piston detachably mounted in the casing below the partition, the sections of said partition being movable out of the way of the piston when the same is detached.

5. In a pump of the character described, the combination with a casing, of a rotary piston detachably journaled in the lower portion thereof, a driving-shaft extending longitudinally of the casing and connected to the piston, and a partition extending across the casing above the piston and comprising separable sections hinged on opposite sides of the casing and swinging upwardly and outwardly out of the path of movement of the piston when the same is detached, said driving-shaft extending downwardly between the sections.

6. In a pump of the character described, the combination with a casing, of a piston-chamber located therein, upwardly-extending discharge-channels communicating with the chamber, a rotary piston detachably journaled in the chamber, a driving-shaft extending longitudinally in the casing and connected to the piston, and a partition arranged over the chamber and piston, said partition comprising separable sections hinged at their outer edges to the inner walls of the discharge-channels, said sections being disposed in angular relation and having their inner edges abutted, said inner edges being provided with an opening through which the driving-shaft passes.

7. In a pump of the character described, the combination with a casing having a piston-chamber and an inlet located over the same, of a partition hinged in the casing and constituting the top of the inlet, and a piston operating in the chamber, said piston being removable through the top of the chamber, through the inlet and past the partition, said partition swinging out of the way of the piston during the removal of the latter.

8. In a pump of the character described, the combination with a casing having a piston-chamber and an inlet located over the same, of a partition comprising angularly-disposed sections hinged at their outer sides within the casing, and constituting the top of the inlet, the inner portions of said sections being detachably abutted, a piston operating in the chamber, said piston being removable through the top of said chamber, through the inlet and past the partition, the sections of said partitions swinging outwardly to permit its passage, and a driving-shaft extending longitudinally in the casing and connected to the piston, said driving-shaft being disposed between the inner portions of the partition-sections.

9. In a pump of the character described, the combination with a casing having a piston-chamber, and inlets communicating with the top and bottom of said chamber, of a par-

tition constituting the top of the upper inlet, said partition comprising angularly-disposed sections hinged at their outer sides within the casing and having their inner portions abutted, discharge-channels communicating with the piston-chamber and discharging into the casing outside the partition-sections, a rotary piston mounted in the piston-chamber and having upper and lower inlets, said piston being movable upwardly through the upper inlet and past the sections of the partition, and a driving-shaft for rotating the piston.

10. In a pump of the character described, the combination with a casing, of a piston-chamber located therein between its top and bottom and comprising a top wall and a bottom wall, said walls having openings, the upper of which is larger than the lower, a driving-shaft, and a piston mounted on the shaft within the piston-chamber, said piston comprising upper and lower disks having inlet-openings, the upper disk operating over the opening in the upper chamber-wall, the lower disk operating over the opening in the lower chamber-wall and being of less diameter than the upper disk, an intermediate disk interposed between the upper and lower disks and of less diameter than the upper disks, blades interposed between the disks, means for rotating the piston, and means for carrying the discharge away from the piston-chamber.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WINFIELD S. SHELTON.

Witnseses:

ELMER E. DOBBINS,

S. J. JOHNSON.