

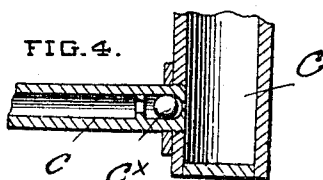
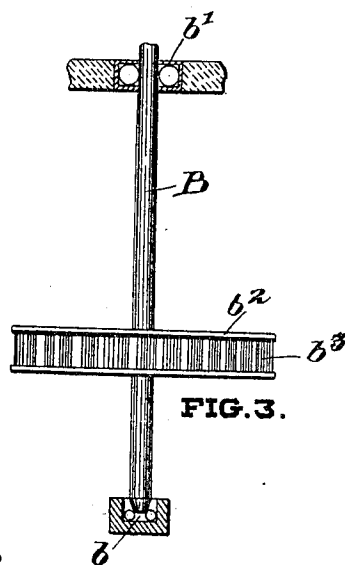
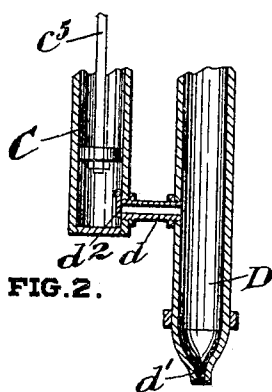
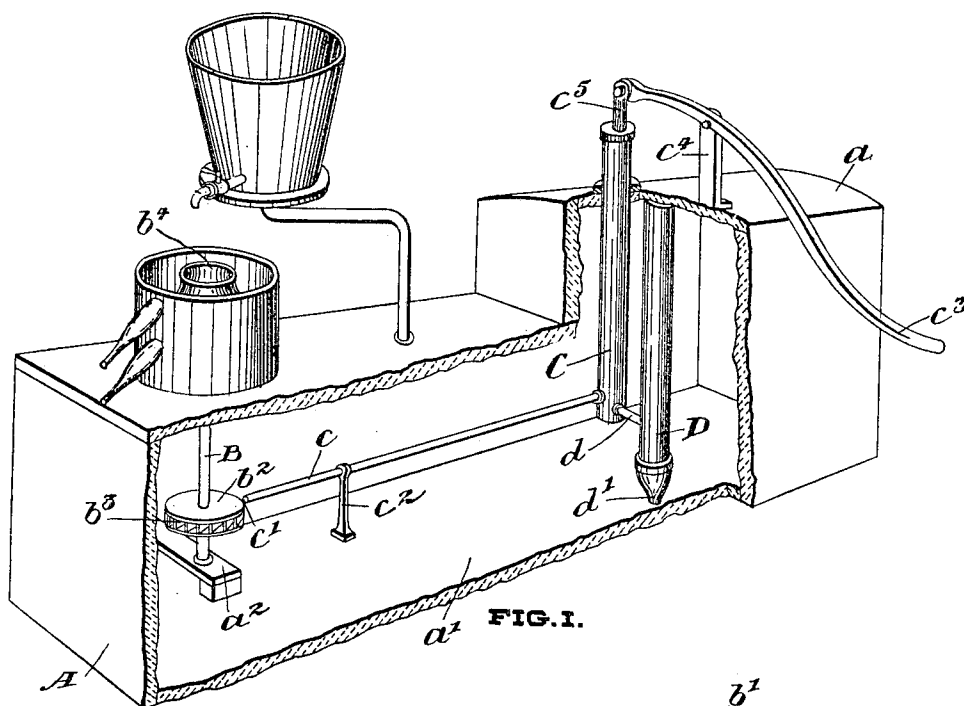
No. 819,087.

PATENTED MAY 1, 1906.

J. SHARPE.

WATER MOTOR FOR CREAM SEPARATING MACHINES.

APPLICATION FILED SEPT. 8, 1905.



WITNESSES.

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WATER-MOTOR FOR CREAM-SEPARATING MACHINES.

No. 819,087.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed September 8, 1905. Serial No. 277,518.

To all whom it may concern:

Be it known that I, JOHN SHARPE, gentleman, of Bloomfield, in the county of Prince Edward, Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Water-Motors for Cream-Separating Machines, of which the following is a specification.

My invention relates to improvements in water-motors for cream-separating machines; and the objects of my invention are to provide simple and economical means whereby the power may be transmitted to the cream-separating vessel without any gearing being in contact therewith, and consequently with a minimum loss of power due to friction; and it consists, essentially, of a casing, a shaft mounted therein and adapted to support a cream-separating vessel, a water-wheel secured to the shaft, a lift and force pump extending through the top of the casing and having discharge - orifice operating against the blades of the water-wheel, an intake-nozzle, and an inlet-pipe connecting the intake-nozzle to the intake of the pump, and operating means for said pump external to the casing, the various parts of the device being constructed and arranged in detail as hereinafter more particularly described.

Figure 1 shows a perspective view of my water-motor for cream-separating machines, a portion thereof being in section to more clearly show the construction thereof. Fig. 2 shows an enlarged sectional view through a portion of the bottom of the lift and force pump and nozzle therefor. Fig. 3 shows an enlarged elevation of the shaft and water-wheel supported thereon. Fig. 4 is a sectional detail view.

In the drawings like letters of reference indicate corresponding parts in each figure.

Referring to the drawings, A is the outside casing of the separator, which may be of any suitable form and material. *a* is the top thereof, and *a'* the bottom.

B is the main shaft stepped in a bottom ball-bearing *b*, supported on a frame *a*² and having an upper side bearing *b'*, also provided with a ball-race. Intermediate of the length of the shaft a water-wheel *b*² is secured, preferably extending horizontally. This may be of any well-known construction, comprising a plurality of curved blades *b*³, by means of which the wheel is rotated when a jet of water

impinges on the blades. To the top of the shaft the centrifugal separator vessel *b*⁴ is secured, which may be of any suitable form. The cream-separating portion of my device forms no part of my invention and might be made of any form commonly in use, so it need not be here described in detail.

A nozzle *c'*, to which is secured the outlet-pipe *c* of the lift and force pump C, is arranged in operative position to the blades of the water-wheel. A standard *c*² may be provided to suitably secure the same in position. This pump may be of any well-known type, and to the piston-rod *c*⁵ thereof a handle *c*³ is secured, supported on a standard *c*⁴, secured to the top *a* of the casing, whereby the pump may be conveniently operated from the outside of the casing. A valve *c*^x is placed in the pipe *c* to prevent back draft on the water-wheel.

The pump draws its water through a large intake-pipe D, connected to the bottom of the pump by a small pipe *d* or other means. The nozzle *d'* of the intake-pipe extends quite near the bottom of the casing. The usual valve *d*² of the flapper type is provided at the end of the pipe *d*. The object of having a separate nozzle *d'* and intake-pipe D for the lift and force pump is to enable a supply of water to be accumulated in the large intake-pipe D, from whence it will quickly flow into the pump - cylinder as soon as the piston starts on its upstroke. Under the action of the pump the intake-pipe D will normally remain half-full, and will thus by its own pressure open the flapper-valve *d*² and flow into the pump-chamber when the piston is on the return stroke.

In the operation of my device the water after it has been pumped through the nozzle *c'*, operating on the water-wheel *b*², drops to the bottom of the casing, whence it is sucked up by the nozzle *d'* of the intake-pipe D. It will thus be seen that a few pails of water will serve to continuously run my separator. Three or four strokes of the handle *c*³ I have found quite sufficient to rotate the separator vessel with the required rapidity, and there being no loss due to frictional contact of gear-wheels or other mechanism very little power is required to operate the mechanism.

What I claim as my invention is—

1. A motor for cream-separating vessels comprising a casing, a shaft mounted therein,

a water-wheel secured thereto, a water-nozzle adapted to discharge against the blades of the water-wheel, a vertical lift and force pump extending through the top of said casing, a pipe connecting the discharge-orifice of said pump to said nozzle, an intake-nozzle for the pump adapted to withdraw the water from the bottom of the inside of the casing after it has been through the water-wheel, an inlet-pipe connecting said intake-nozzle to the intake of the pump, an operating-handle for said pump and a standard secured to the top of the casing to which the handle is pivoted as and for the purpose specified.

2. A motor for cream-separating vessels comprising a casing, a shaft mounted therein, a water-wheel secured thereto, a water-nozzle adapted to discharge against the blades of the water-wheel, a vertical lift and force pump extending through the top of the casing, a pipe connecting the discharge-orifice of said pump to said nozzle, an intake-nozzle for the pump adapted to withdraw the water from the bottom of the inside of the casing after it has been passed through the water-wheel, a vertically-extending intake-pipe

adapted to serve as a temporary reservoir for the water, a connecting-pipe connecting said reservoir-pipe to the intake of the pump and operating means for the pump external to the casing as and for the purpose specified.

3. A motor for cream-separating vessels comprising a casing, a shaft mounted therein, a water-wheel secured thereto, a water-nozzle adapted to discharge against the blades of the water-wheel, a vertical lift and force pump extending through the top of said casing, a pipe connecting the discharge-orifice of said pump to said nozzle, an intake-nozzle for the pump adapted to withdraw the water from the bottom of the inside of the casing after it has been through the water-wheel an inlet-pipe connecting said intake-nozzle to the intake of the pump and operating means for said pump external to the casing as and for the purpose specified.

Signed at Picton, in the Province of Ontario, this 24th day of August, 1905.

JOHN SHARPE.

Witnesses:

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