A. FUROWICZ.

CENTRIFUGAL MIXING APPARATUS.

APPLICATION FILED AUG. 20, 1908.

954,951.

Patented Apr. 12, 1910.

Fig. 1.

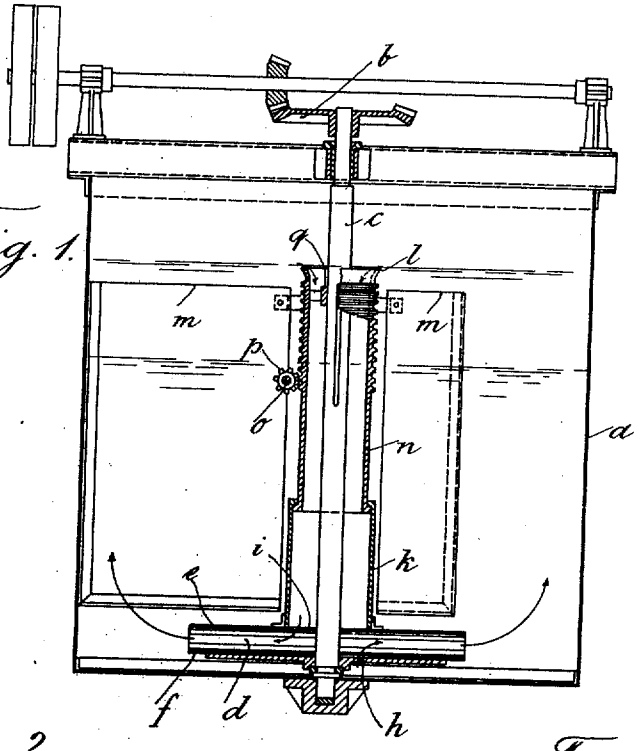


Fig. 2.

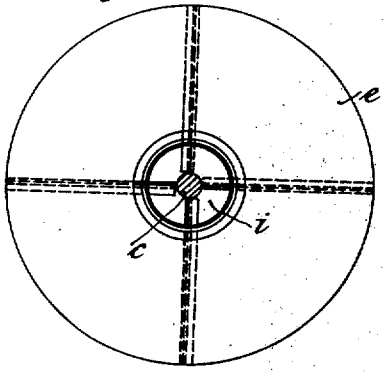
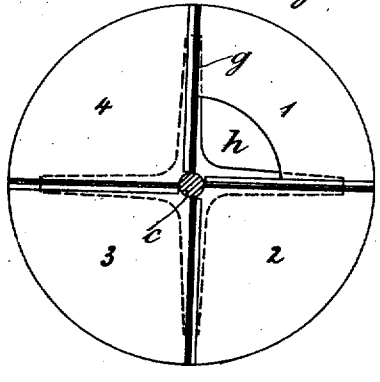


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

ALEKSANDER FUROWICZ, OF FASTOV, RUSSIA.

CENTRIFUGAL MIXING APPARATUS.

954,951. Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed August 20, 1908. Serial No. 449,505.

To all whom it may concern:

Be it known that I, ALEKSANDER FUROWICZ, engineer, a citizen of the Empire of Russia, residing in Fastov, Kiew, in said Empire of Russia, have invented certain new and useful Improvements in Centrifugal Mixing Apparatus, of which the following is a specification.

The invention relates to centrifugal agitating or mixing apparatus of the kind which comprises a vane wheel and a pipe fixed to and rotating with it, in which, owing to the centrifugal action of the vane wheel, a powerful suction effect and consequently a vigorous circulation of the mass passing over the edge of the pipe are produced.

The invention resides in the provision in the suction pipe fixed to the vane wheel of a pipe telescopically displaceable in it and if necessary of another such pipe and so forth in order to enable the topmost edge of the pipe to be adjusted to the level of the mass under treatment.

In the accompanying drawing:—Figure 1 represents a vertical section through the middle of the apparatus. Figs. 2 and 3 are plan views of the upper and the lower inclosing plates of the vane wheel respectively on slightly larger scale.

The vane wheel *d* is fixed on a vertical shaft *c* driven by transmission gear *b* and arranged in the vessel *a*. This vane wheel consists of the upper and lower inclosing plates *e*, *f* and a number, say four, radial walls fixed between these plates, forming the vanes *g* and constituting the four closed wheel-chambers 1 to 4 separated one from the other. The lower inclosing plate *f* stands somewhat away from the bottom of the vessel *a* and in one of the chambers, say the chamber 1, it is provided in proximity to the shaft *c* with a recess *h* through which during the rotation of the vane wheel a suction effect in the upward direction is produced, that is to say a circulation of the mass standing on the bottom through the corresponding chamber of the vane wheel toward the exterior and over the bottom, so that, when the mass contains solid constituents, they are constantly agitated in settling and mixed with the mass. The other three chambers 2, 3, and 4 of the vane wheel are in communication with the interior of the pipe *k* arranged upon and rotating with the vane wheel, by means of a recess *i* in the upper inclosing plate *e;* during the rotation of the vane wheel the mass is drawn through this pipe over the edge *l*, which is preferably bent outward, and caused to circulate in the part located above the vane wheel. Walls *m* extending inward from the walls of the vessel *a* prevent rotation of the mass contained in the vessel around the shaft *c*.

The parts described above are known and do not constitute the essence of the present invention which consists in the fact that in the pipe *k* another pipe *n* displaceable telescopically is arranged. In the pipe *n* still another telescopically displaceable pipe (not here shown) can be mounted. The same object can be attained by arranging the pipe *n* outside the pipe *k* and the free width of the suction pipe may increase stepwise toward its upper part.

The adjustment is conveniently effected by means of a gear wheel *p* mounted on a shaft *o* journaled in the wall of the vessel; this gear wheel meshes with the upper toothed part of the pipe *n*. As the pipe *n* rotates the teeth formed around its upper part make it possible to adjust the edge of the pipe from the outside even when the apparatus is working. The pipe *n* may also be guided on the shaft *c* at *q*.

This apparatus is especially adapted for intimately mixing liquids and pasty masses of all kinds with solid constituents.

What I claim is:—

1. In a device of the type set forth, in combination with a vane wheel, a multi-section suction pipe rotatable with the wheel, and means whereby said suction pipe may be adjustably extended or collapsed during the rotation thereof.

2. In a device of the type set forth, in combination with a vane wheel having chambers, a collapsible and extensible suction pipe rotatable with said wheel and communicating with said chambers, a vessel within which said parts are mounted, and means carried by the vessel and engaging said pipe whereby the latter may be extended or collapsed during rotation thereof.

3. In a device of the type set forth, in combination with a vane wheel divided into chambers, a multi-section suction pipe rotatable with the wheel, the uppermost of the sections of said pipe being formed with a series of annular teeth, and a rotatable

gear meshing with said teeth and adapted upon rotation thereof to extend or collapse said uppermost section.

4. In a device of the type set forth, in combination with a vane wheel, a suction pipe connected to said wheel and composed of a plurality of telescopic sections, a vessel in which said parts are mounted, and rotatable means carried by said vessel and engaging one of the sections whereby by rotation of said means said section may be adjusted.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ALEKSANDER FUROWICZ.

Witnesses:

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ALEKSANDER KOBUSREWSKI.