

(No Model.)

H. PETERSEN.

CENTRIFUGAL CREAMING MACHINE.

No. 288,732.

Patented Nov. 20, 1883.

Fig. 1.

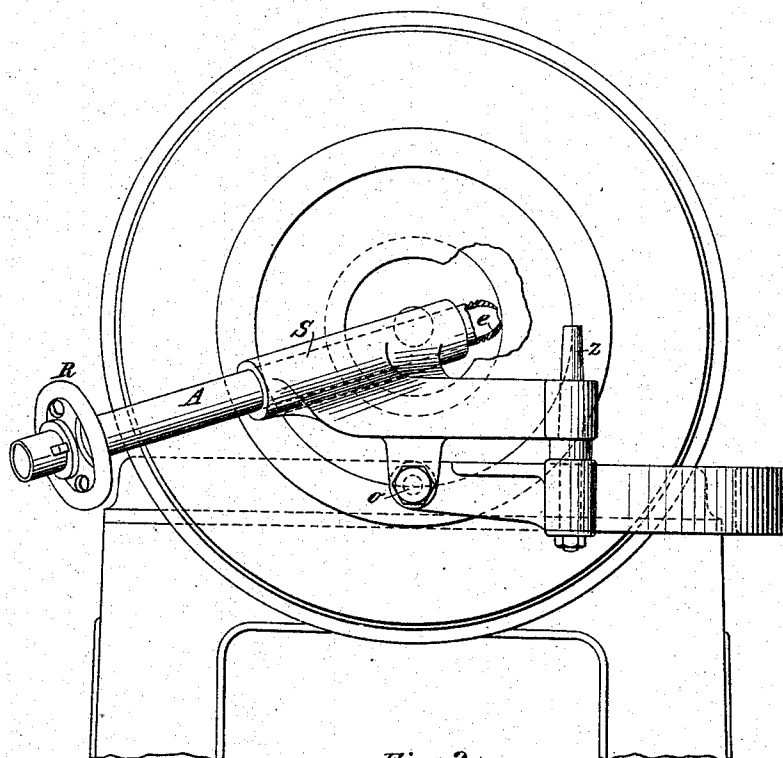
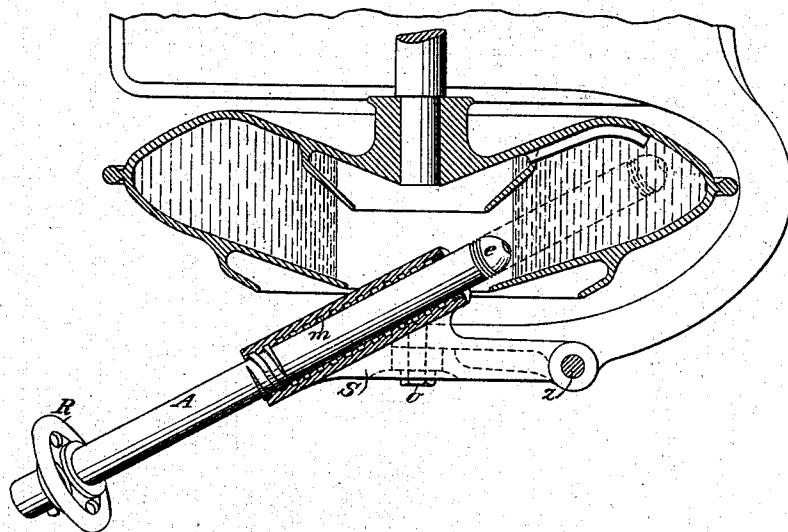


Fig. 2.



Witnesses:

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CENTRIFUGAL CREAMING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 288,732, dated November 20, 1883.

Application filed February 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH PETERSEN, engineer, of Hamburg, in the Empire of Germany, have invented certain new and useful
5 Improvements in Centrifugal Creaming-Machines and in Apparatus Connected Therewith, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to a certain class of centrifugal machines used for separating liquids of different specific gravity—such as cream from milk—and in which cutters or peeling-off devices are employed for removing
15 one, several, or all separated part or parts of the liquid out of the machine, and has for its object to simplify the construction and to improve the action of such machines.

The new or improved apparatus employed
20 herein consists of a straight tube or pipe, furnished at the inner end with a cutting-edge, which tube or pipe is supported by an arm or other part of the frame, in which it can be turned round its own axis, as well as be moved
25 forward and backward. The sharp cutting-edge of the tube is placed against the rotating ring of liquid that has to be removed from the centrifugal vessel. Consequently liquid is, by the said cutting-edge, peeled off from the
30 rotating ring and runs through the tube out of the machine. As the tube can be turned about its axis within the supporting-frame, a new part of the circular cutting-edge can be brought in contact with the liquid in case this
35 should be desirable, either because one part of the said edge is worn, or in case impurities should collect against the cutting part of the edge, or on account of other circumstances which may occur to render such turning desir-
40 able. This can be done without interrupting the operation of the machine. The forward and backward motion that can be given to the tube in the direction of its longitudinal axis provides for the adjustment of the cutter in
45 proper position in relation to the liquid ring that has to be removed, or the forcing of the cutting-edge to a greater or less depth into the surface of the rotating ring of liquid. In case the cutting-tube is introduced into the
50 interior of the centrifugal vessel, this vessel can, by stopping the feeding of the machine with compound liquid, fully or partly be emp-

5 tied of its contents by gradually introducing the tube deeper into the centrifugal vessel. The forward and backward motion of the
55 tube-cutter may be executed by giving the tube an outer thread, and by furnishing the support with a corresponding inner thread. If the tube is then turned by a hand-wheel at-
60 tached to its outer end, the distance to which it is introduced into the rotating vessel toward its inner circumference may be varied; or it may be removed from out the vessel by turning it in reverse direction. The forward and
65 backward motion of the tube may also be executed by a rack and pinion, or by lever transmission, or other mechanical means well known to practical engineers.

The invention is illustrated by the accompanying sheet of drawings as applied to a
70 centrifugal drum fixed to the end of a horizontal rotating shaft.

Figure 1 is a front view, partly in section; Fig. 2, a sectional plan of drum and cutter.

The cutter A consists of a straight tube, hav-
75 ing a sharp circular edge, *e*, which tube is supported by a bracket, S, in which it can be turned about its own axis by a hand-wheel, R, lever, or other device, so as to bring a new
80 part of the cutting-edge in contact with the liquid that has to be removed out of the drum, if the part before used is worn, or it is for any other reason desirable to present another
85 part of the edge. The circumferential channeling of the exterior of the front part of the tube has for its purpose to prevent parts of the liquid that might, by splashing or other-
90 wise, come onto the outer surface of the tube, from running down along this surface. Such parts of liquid will drip off from the channels.

For the purpose of emptying the centrifugal drum, partly or wholly, by cutter A, the
95 latter can be shifted forward in its support S, so as to enter the drum more or less. This may be done by giving the tube an outer
100 thread to fit a female-thread, *m*, of the support, as shown in Fig. 2 of the drawings, in consequence of which the cutter, if turned in one direction, will enter the drum more or less, while, if turned in the other direction, it will
be removed from the deeper part of the drum. In Fig. 2 of the drawings, in full lines, the cutter is shown in its position as peeling off the lighter liquid placed nearest to the axle of the

machine, while in dotted lines its position is shown when nearly all liquid contained in the drum is drawn off by this cutter. The support S is pivoted onto a vertical post or fixed pin, z, round which it can be swung to bring the cutter into or out of acting position. o is a screw to fix the support when the cutter is in working position.

I am aware that tubes have been used before for the purpose of removing liquids out of centrifugal apparatus, and I do not claim this, generally.

I am also aware that such tubes have had their ends bent into U shape, and have been adjusted longitudinally without turning, so as to project more or less into the liquid to be removed; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a centrifugal separating-machine of the kind herein described, the combination of a straight tube provided at the inner end with a circular cutting-edge, and a support or bracket in which the said tube is adapted to turn to present different parts of its edge in

an operative position, substantially as herein described.

2. In a centrifugal separating-machine of the kind herein described, the combination, with a straight tube having a circular cutting-edge at the inner end, and the support or bracket in which it is capable of turning to bring different portions of its edge into operation, of a screw or its equivalent for projecting the said tube forward or drawing it back in said support or bracket, substantially as described.

3. The cutter or peeling-off device, for use in a centrifugal separating-machine of the kind herein described, consisting of a straight tube provided at the inner end with a circular cutting-edge, and having immediately in rear of the inner end circumferential channels or grooves, which prevent the flow of liquid backward along the exterior of the tube, substantially as described.

HEINRICH PETERSEN.

Witnesses:

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F. CLAIRMONT.