P. L. KIMBALL.

APPARATUS FOR WASHING SEPARATOR SKIMMERS.

APPLICATION FILED JAN. 12, 1914.

1,121,731. Patented Dec. 22, 1914.

Fig. 1.

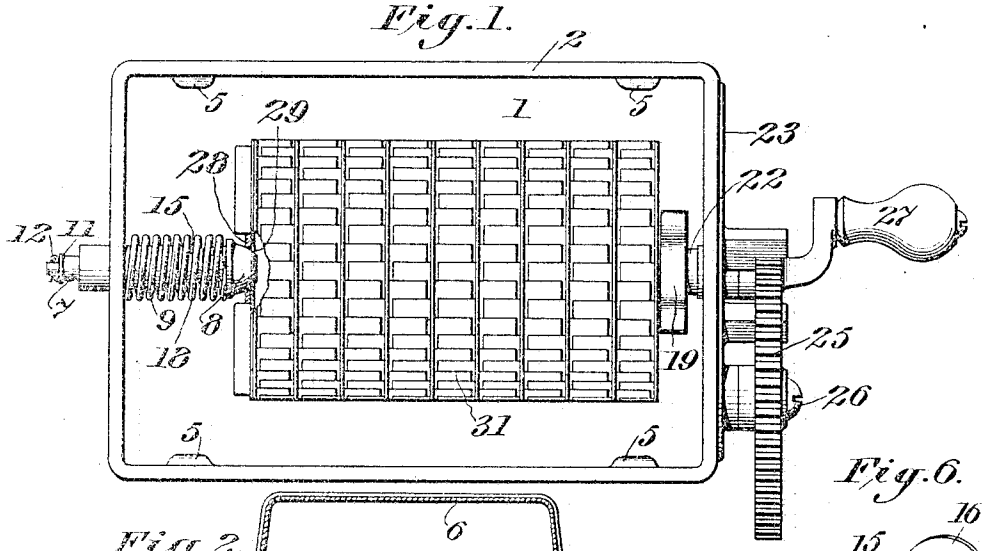


Fig. 2.

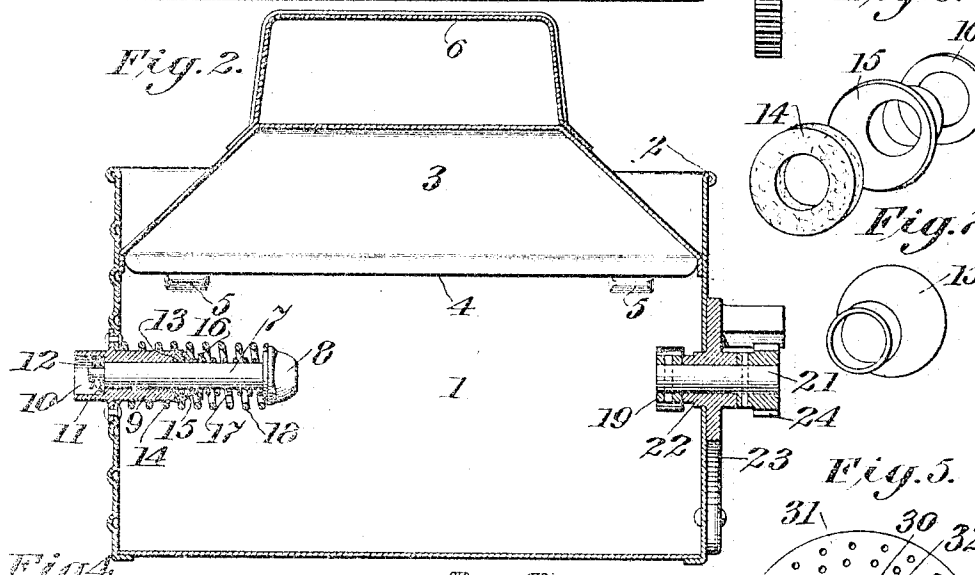


Fig. 6.

Fig. 7.

Fig. 5.

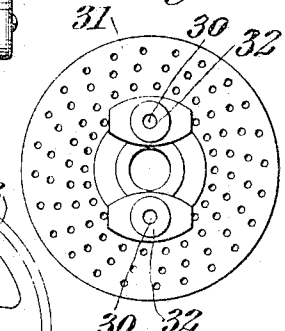


Fig. 4.

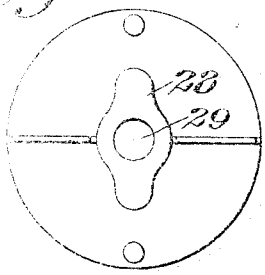
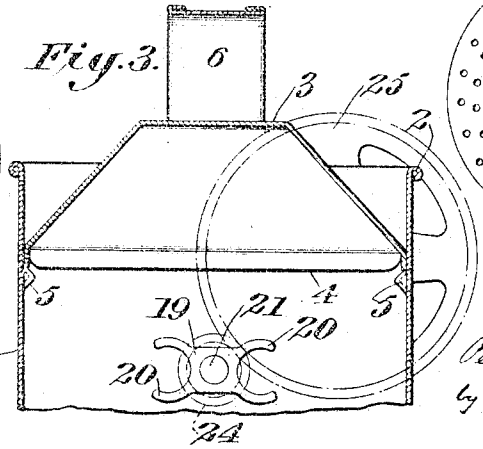


Fig. 3.



WITNESSES

W. N. Finnell Jr.

E. L. Finnell.

INVENTOR

Perley L. Kimball

by W. N. Finnell

Atty.

UNITED STATES PATENT OFFICE.

PERLEY L. KIMBALL, OF BELLOWS FALLS, VERMONT, ASSIGNOR TO VERMONT FARM MACHINE COMPANY, OF BELLOWS FALLS, VERMONT, A CORPORATION OF VERMONT.

APPARATUS FOR WASHING SEPARATOR-SKIMMERS.

1,121,731. Specification of Letters Patent. Patented Dec. 22, 1914.

Application filed January 12, 1914. Serial No. 811,665.

To all whom it may concern:

Be it known that I, PERLEY L. KIMBALL, a citizen of the United States, residing at Bellows Falls, in the county of Windham and State of Vermont, have invented a certain new and useful Improvement in Apparatus for Washing Separator-Skimmers, of which the following is a full, clear, and exact description.

The primary object of this invention is to provide a self-contained, portable apparatus for thoroughly and expeditiously cleaning the skimmers or liners of centrifugal cream separators, without taking them apart.

The invention is in the nature of improvements upon the washing apparatus of my case filed November 18, 1912, Serial No. 732,076, said improvements consisting, first, in the spring-pressed spindle for engaging one end of the skimmer or liner to hold it within the washer, and, second, in the whirl or head block to engage the other end of the skimmer or liner which in coöperation with the spindle supports the skimmer or liner within the washer in a horizontal position so that it may be turned, as I will proceed now to explain and finally claim.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a top plan view, with the cover removed, and showing the skimmer or liner in position to be cleaned, part of the skimmer being broken out next to the spindle. Fig. 2 is a central longitudinal section, with the cover in place. Fig. 3 is a central transverse section, the lower part of the tank broken away. Fig. 4 is an elevation of that end of the skimmer which is engaged by the spindle. Fig. 5 is an elevation of that end of the skimmer which is engaged by the whirl or head block. Fig. 6 shows in perspective the component parts of the spindle packing, and Fig. 7 is a perspective view of the conical washer of such packing.

The invention is herein shown as designed for use in connection with a well-known skimmer or liner, a type of which is illustrated in the Patent No. 920,481, dated May 4, 1909—although it is not thus limited, and may be adapted for use in cleaning or washing other forms of skimmers or liners, particularly those that need not be taken apart for cleaning.

The tank 1 may be of any suitable construction, but preferably is of greater length than height or width, and its upper edge 2 may be beaded or wired for reinforcement.

The cover 3 is of the general outline of a truncated pyramid, having the flanged edges 4 and of a size to fit within the tank, in which it is supported upon any suitable supports, such as dents 5 made in the sides of the tank. This cover is provided with a handle 6 which is useful in handling the cover and in gripping the apparatus when in use. The cover is of such height as to project above the walls of the tank. It is to be noted that the sides and ends of the cover slope toward the walls of the tank, so that any water escaping from the tank while the washer is in operation, will be returned to the tank. In other words, the dropping of the cover inside the tank and below its upper edge and making it with sloping sides and ends extending centrally above the tank, results in the prevention of the slopping over of the washing agent when the apparatus is in operation.

The spindle 7 has at its inner end a head 8 adapted to engage one end of the skimmer or liner, and it is arranged in a sleeve 9 which is fitted to one end of the tank and extends both inside and outside of the tank. The outer end of the sleeve is counterbored at 10 to receive a washer 11 and the cotter-pin 12 or other fastening medium for securing the spindle in the sleeve. The inner end of the sleeve is concave preferably, as indicated at 13, and against this end is placed a packing ring 14 which encircles the spindle. This packing ring preferably is made of felt or equivalent resilient or yielding material that will not harden under the action of water, as do leather and other solid materials. Furthermore, felt has been found particularly serviceable in this connection because of its compressibility, and the facility with which it may be packed about the spindle and sleeve so as to insure a water-tight joint. To obtain the full value of these characteristics of the felt packing, there is used a conical or funnel-shaped metal washer 15 which embraces the felt packing and not only tends to force it into the concave inner end of the sleeve 9, but also to compress it diametrically about the spindle. Next to this conical washer is a flat metal washer 16 which bears against the conical washer, and placed on the spindle

between washer 16 and the head of the spindle is a coiled spring 17 which keeps the packing ring and the two washers pressed toward the sleeve and so under efficient working conditions. 18 is a heavy coiled spring which surrounds the spindle, spring 17, washers and sleeve, between the head of the spindle and the adjacent end of the tank and normally exerting its force against the head of the spindle to project the spindle inwardly with relation to the tank.

19 is the whirl or head block, having at its opposite ends the forks 20 to engage parts on the skimmer or liner. This whirl is mounted upon a shaft 21 which has a bearing in a boss 22 forming part of a plate 23 which is fixed to the end of the tank opposite the spindle, the axes of the spindle and whirl being alined. On the outer end of the shaft 21 is a pinion 24 which is meshed by a gear wheel 25 having a bearing on a stud shaft 26 mounted on the plate 23, and provided with an operating handle 27, so that the whirl may be rotated.

As shown in Figs. 1 and 4, one end of the skimmer or liner has a plate 28 provided with a hole 29 into which the head of the spindle enters, and as shown in Fig. 5, the other end of the skimmer or liner has the rods 30 for connecting its several sections 31, on which rods are the clamping nuts 32, and these nuts are engaged by the forks 20 on the whirl. The skimmer or liner is taken bodily from the separator bowl, and its hole 29 is alined with the spindle head, and pressure is then applied to the skimmer in the direction of the sleeve 9 thereby compressing the springs 17 and 18 sufficiently to permit the nuts 32 to come opposite the forks of the whirl, and then the pressure is released so as to permit the springs to force the skimmer toward the opposite end of the tank and effect the support of the skimmer by and between the spindle and whirl in a horizontal plane, in readiness to be rotated by the gearing.

The provision of the forks on the ends of the whirl to engage the nuts on the skimmer, gives access to these nuts so that they may be tightened should they work loose in the operation of the apparatus, and also enables the operator to see the condition of the nuts as the washing operation progresses.

The apparatus of the present invention has all of the advantages of the apparatus of the case hereinabove referred to, with the additional advantages incident to the new construction of cover, and the new construction of spindle packing, and the new construction of whirl.

Variations in the construction are deemed to be within the scope of the claims following.

What I claim is:—

1. In an apparatus for washing separator skimmers, a tank having a skimmer support comprising a spring-pressed spindle at one end having a head adapted to engage one end of the skimmer, a whirl having open ends and mounted to turn in the opposite end of the tank, its open ends adapted to engage projecting parts on the skimmer so as to cause it to turn with the whirl and expose such projecting parts so that they may be accessible and visible whenever desired, and means to rotate the whirl a d the attached skimmer.

2. In an apparatus for washing separator skimmers, a tank having a skimmer support comprising a spring-pressed spindle fitted substantially water-tight in one end of the tank, and a whirl fitted in the tank at its opposite end, said whirl having its opposite ends forked and adapted to engage projecting parts on the skimmer thereby rendering such projecting parts accessible and visible whenever desired.

In testimony whereof I have hereunto set my hand this eighth day of January, A. D. 1914.

PERLEY L. KIMBALL.

Witnesses:
FRED C. HILDRETH,
M. J. PIKE.