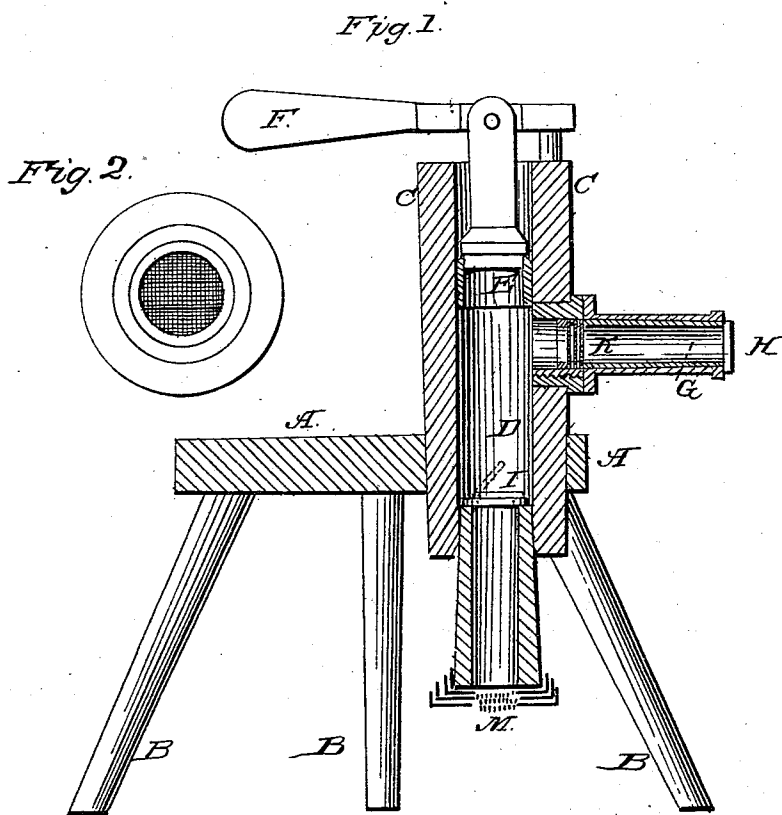


M. A. RICHARDSON.

Cream Pump.

No. 36,530.

Patented Sept. 23, 1862.



Witnesses
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J. D. Hilloughby.

Inventor
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UNITED STATES PATENT OFFICE.

M. A. RICHARDSON, OF SHERMAN, NEW YORK.

IMPROVEMENT IN CREAM-PUMPS.

Specification forming part of Letters Patent No. 36,530, dated September 23, 1862.

To all whom it may concern:

Be it known that I, M. A. RICHARDSON, of Sherman, Chautauqua county, State of New York, have invented a new Cream-Pump; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in forcing cream through one or more wire screens before churning it to break and thoroughly disunite the particles of cream that usually unite and become tough on the surface while standing in vessels.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 is a vertical section of my invention, showing the interior of the cream-pump and its general formation. Fig. 2 is a horizontal view of a wire-cloth screen, a section of which is seen on the lower end of the pump in Fig. 1.

In Fig. 1, A A is a bench or platform mounted on three legs, B B B. The pump stock C C passes through the bench A A and is fastened to it. D is the bore or opening in the pump. E is a piston with packing around it. F is a lever by which the piston is operated. G is a spout from which the cream is discharged. H is a valve on the end of the spout. I is a valve that opens upward in the pump.

K represents three screens placed in the rear end of the spout G, and are held there by a shoulder in front and a rubber ring, which fits tightly in the tube behind them. These screens are made by fastening a circular piece of wire cloth to a flat metallic ring. The wire on the ring first inserted is quite fine, the second is not so fine, and the third is coarser than the second. These screens are separated from each other by intervening metallic rings.

M represents three wire screens made of the same material as those at K. The wire is fastened to metallic cups of different sizes, so as to fit into each other, and are then slipped or forced onto the lower end of the pump.

Fig. 2 is a horizontal view of the screens and cups seen at M in Fig. 1.

I will now describe the operation of my cream-pump.

When the piston E is raised by lifting the

lever F, a vacuum is formed in the bore of the pump D. The air cannot enter at the spout G to fill the empty space, because the valve H excludes it by fitting tightly on the outer end of the spout. The lower end of the pump at M, being immersed in the cream, prevents the air from entering at that point; but the atmospheric pressure will cause the cream to pass upward through the screens at M to fill the empty space. When the piston is forced downward, the valve I closes and a part of the cream above the valve is forced out through the wire screens at K into the spout G, from which it can be discharged into any desired vessel. It is clearly seen that every time the piston E is raised a quantity of cream will rise up through the wire screens at M to fill the empty space above the valve I. It is equally clear that every downward stroke of the piston will force a quantity of cream out through the screens at K. The meshes of the finest screen at K are about twenty-five thousand to a square inch. The other screens are not so fine, but are a support to the fine wire and aid very much in disintegrating the tough substance that forms on the top or surface of milk or cream.

It is well known to many now engaged in the manufacture of butter that the tough top coating of cream is not converted into butter by the ordinary mode of churning, but remains in the milk and butter, and is called by butter-manufacturers "white flakes" or "cream specks." The non-conversion of these cream flakes into butter is not only a positive loss of cream, but imparts a bad taste to fresh butter and brings on rancidity in a very short space of time, both of which evils are removed by my invention, and a further good result obtained which at first I did not contemplate. I find by experiment that the globules of cream or little sacks that contain the butter are completely broken by being forced through the wire screens, and when the cream is put into a churn it is only necessary to agitate it to gather the butter.

To break the globules of cream or little sacks that contain the butter is the object aimed at by all modes of churning, and I firmly believe that my method accomplishes it more effectually than any other, and in addition completely disintegrates the tough cov-

ering found on the surface of milk and cream, which has heretofore greatly injured the appearance, taste, and keeping qualities of butter.

The screen M can be removed from the end of the pump and the cups separated and cleansed, and can easily be replaced again when desired. The screens K can be taken out by unscrewing the spout G from the pump and removing the rubber ring that is in the rear end of the spout.

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

The use of the wire screens M and K, or their equivalents, in combination with the spout G, valves H and I, pump-stock C C, lever F, and piston E, in the manner and for the purposes specified.

In witness that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

M. A. RICHARDSON.

Witnesses:

WILLIAM H. KEELER,
SYLVENUS H. MYRICK.