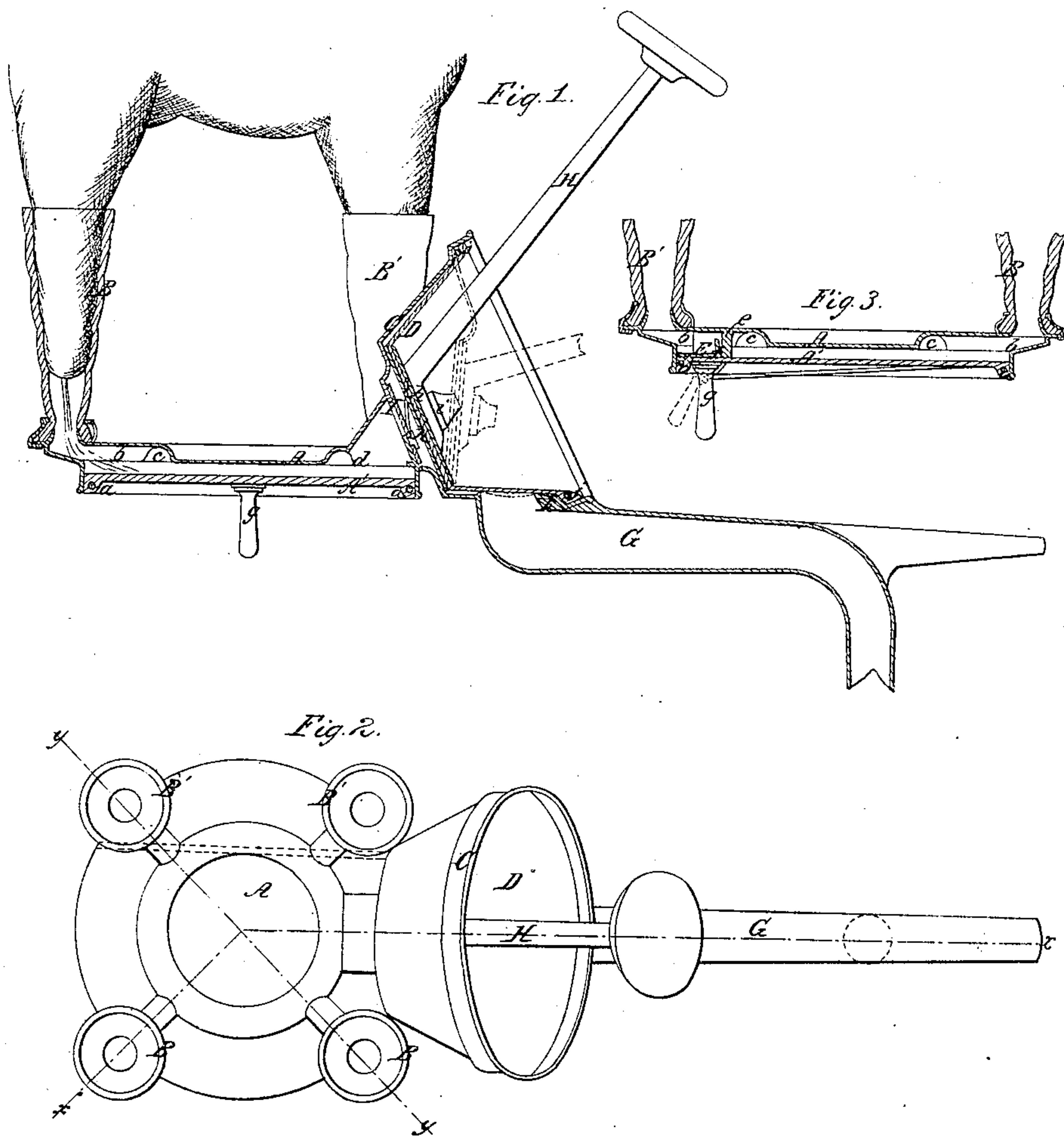


L. O. COLVIN.
COW MILKER.

No. 41,196.

Patented Jan. 12, 1864.



Witnesses;

Thos H Douglas
Geo W Reed

Inventor;

L O Colvin

UNITED STATES PATENT OFFICE.

L. O. COLVIN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN COW-MILKERS.

Specification forming part of Letters Patent No. 41,196, dated January 12, 1864.

To all whom it may concern:

Be it known that I, L. O. COLVIN, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Device for Milking Cows; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a plan or top view of the same; Fig. 3, a section of the same, taken in the line *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain improvements on a cow-milking device for which Letters Patent were granted to me bearing date May 22 and 29, 1860, and February 17, 1863.

The object of the present invention is to reduce the milking device to the simplest possible form, render it capable of being operated or manipulated with greater facility than heretofore, and also capable of having, when necessary or desired, two of the teat-tubes cut off from the suction-chamber, so as to leave only two of the teat tubes operative.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a circular flat box or chamber, which may be termed a "suction-chamber," and to which the four teat-tubes B B B' B' are attached. These teat-tubes may be constructed and connected to the box A in the same way as described in my patent of February 17, 1863. The bottom A' of the box A is composed of india-rubber, cloth, or other flexible material, having a metal hoop, *a*, in its edge of such diameter that it may be fitted snugly within the box and retained in position by the elasticity of the hoop. The other portion of the box A may be struck up or swaged out of sheet metal, the top of the box being formed with grooves or channels *b* in its under side, which constitute milk channels or ducts leading to the teat-tubes B, and these grooves or channels communicate at their inner ends with an annular channel, *c*, which communicates with a passage, *d*, leading to a chamber, C, in which the piston D is fitted. (See Fig. 1.)

The milk channels or ducts *b c* may be

formed by swaging, so as to leave projections on the outer side of the top of the box A corresponding to the grooves in its under side.

Within the box A there is placed a partition, *e*, which extends across the ducts *b b* of two of the teat-tubes, B' B'. This partition causes, when a suction is produced in the box A, the teat-tubes B' B' to be cut off from the passage *d* in consequence of the external pressure forcing the elastic bottom A' of the box A against the partition *e*; hence were no means employed to obviate this the other two teat-tubes, B B, would only be operative. When, however, it is desired to milk the four teats of a cow simultaneously, the elastic bottom A' is kept free from the partition *e* by means of a metal plate, E, which is at the inner side of the bottom A', and is provided with a lip, *f*, at one end. The plate E is attached to a short handle, *g*, at the outer side of the bottom A', and by pressing the handle *g* laterally the lip *f* of the plate E will catch under the partition *e* and force down the bottom A' so as to keep it, when a suction is formed in the box A, free from the partition *e*, as shown in red in Fig. 3. Thus by this simple arrangement two or the whole four of the teat-tubes may be rendered operative, and two or four teats of the cow milked simultaneously, as desired. The chamber C is of conical form and is attached to the box A in an oblique position, as shown in Fig. 1. The plunger or piston D is constructed of india-rubber, cloth, or any suitable elastic material, so as to conform to the shape of the interior of C, and serve, when forced inward, as a valve to cover the inner orifice of a tube, G, which communicates with C and is an eduction-tube, and also serves as a handle for the device. The plunger or piston D has circular disks *h h* attached to its inner and outer sides, and a bar, H, which serves as a handle to operate the plunger or piston, D, is attached to said plates by a bolt, *i*.

I is a valve which covers the orifice of the passage *d* at its junction with C. This valve I opens outward or into C, as shown in red in Fig. 1.

The operation is as follows: The implement is held in the left hand by grasping the handle and tube G, and the plunger or piston D is operated through the medium of the handle H, which is worked back and forth with the lower edges of the disks *h h* in contact with

C. As the plunger or piston D is drawn outward, the valve I opens, and a suction is produced in the box A, as well as in the teat-tubes, two or all of the latter being operative according as the elastic bottom A' is adjusted, as previously described. The box A and the chamber C, in front of the plunger or piston D, become filled with milk as the plunger or piston is drawn outward, the orifice of G being closed by the plunger or piston, as previously referred to. When the plunger or piston is forced inward, the valve I of course closes, and the milk is forced into the tube G, and discharged into the pail or receptacle prepared to receive it, placed underneath the outer end of G.

The plunger or piston D has a metal hoop or wire, *j*, at its outer edge which is fitted snugly in the outer end of C, bearing against a shoulder, *k*, therein, the elasticity of *j* keeping the plunger or piston in proper position. It will be seen that the elastic bottom A' of the box A, as well as the plunger or piston D, may be readily removed or detached at any time and all the internal parts of the device rendered accessible for cleansing.

The working of the plunger or piston will, in consequence of the device being held with one hand, give a gentle up-and-down movement to the device, which greatly aids in the

abstraction of the milk from the cow, while the suction or draw of the device, although not strictly constant, is sufficiently so to prevent the teat-tubes becoming casually loosened from the teats.

The device is under the complete control of the operator.

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

1. The elastic bottom A', applied to the box or suction chamber A, in connection with the partition *e* in said box or chamber, the plate E, and the teat-tubes B B B' B', all arranged to operate in the manner substantially as and for the purpose herein set forth.

2. The chamber C, provided with the elastic plunger or piston D, arranged relatively with the tube G, as shown, so as to perform the double function of a plunger and valve, substantially as set forth.

3. The combination and arrangement of the box A, chamber C, and tube G with the valve I and teat-tubes B B B' B', to form a new and improved device, for the purpose specified.

L. O. COLVIN.

Witnesses:

THOS. L. J. DOUGLAS,
GEO. W. REED.