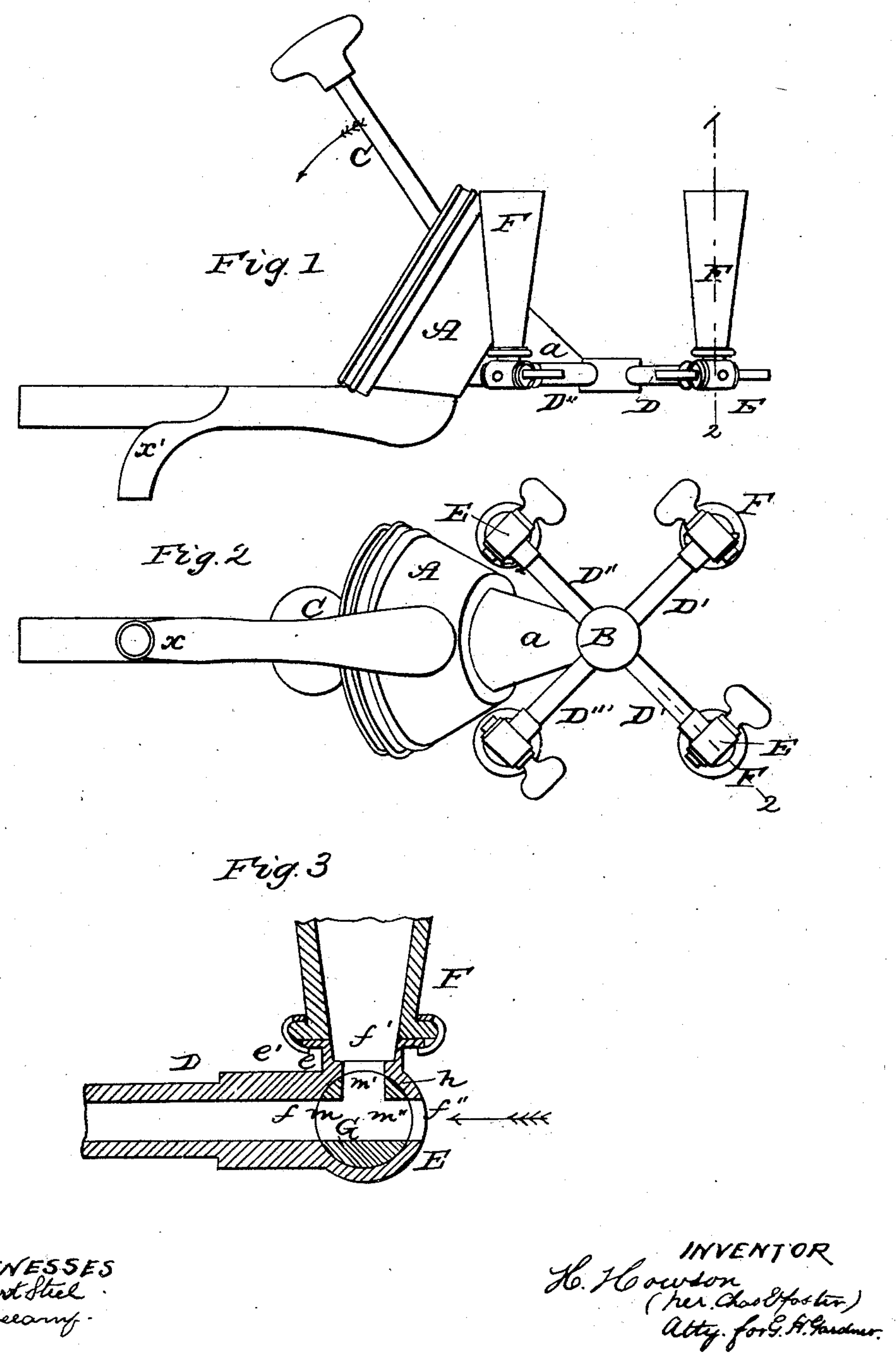
G. H. GARDNER.

Cow Milker.

No. 45.486. Patented Dec. 20, 1864.



UNITED STATES PATENT OFFICE.

G. H. GARDNER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVED COW-MILKER.

Specification forming part of Letters Patent No. **45,186**, dated December 20, 1864.

To all whom it may concern:

Be it known that I, G. H. GARDNER, of Philadelphia, Pennsylvania, have invented an Improvement in Cow-Milkers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to improvements in the cow-milker for which Letters Patent were granted to L. O. Colvin on the 12th day of January, 1864; and my improvement consists of stop-cocks so combined with a cow-milker so constructed and so arranged in respect to the teat-cups that the operation of the instrument on one or more of the teats may be discontinued while it is continued on the remaining teats.

My improvements are also such as to facilitate the cleansing of the instrument.

In order to enable others to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a side view of a cow-milker with my improvement; Fig. 2, an inverted plan view; and Fig. 3, a vertical section of part of the instrument on the line 1 2, Fig. 2, drawn to an enlarged scale.

Similar letters refer to similar parts throughout the several views.

A is the exhausting or pumping chamber of the apparatus, which communicates through a tapering tube, *a*, with the central chamber, B. Within the chamber A is an elastic diaphragm, so arranged and so operated in conjunction with valves that the imparting of a vibrating motion in the direction of the arrow to the handle C, which is secured to the said diaphragm, will tend to cause a vacuum in the chamber B. As this pumping apparatus is similar to that for which Letters Patent were granted to L. O. Colvin on the 12th day of January, 1864, a more minute description than the above will be unnecessary.

From the central chamber, B, project four tubes, D, D′, D″, and D‴, each of which is furnished at the outer end with a stop-cock, E, the latter having two branches, *e* and *e′*, as best observed on reference to Fig. 3. The branch *e′* is secured to one of the tubes D, and communicates with the central chamber, B, and to the other branch, *e*, of the cock is secured the conical cup F of gum-elastic, this cup being of a form adapted for the reception of one of the teats of the cow.

In the case *h* of the stop-cock are three openings, *f*, *f′*, and *f″*, the first forming a continuation of the interior of the tube D, the second communicating with the interior of the branch *e*, and the third, *f″*, communicating with the external air.

The plug G of the stop-cock has also three openings, *m*, *m′*, and *m″*, the openings *m* and *m′* being continuations one of the other, and the opening *m″* being situated at right angles to the other openings.

When each plug of the four stop cocks is so turned that its openings are situated in respect to those in the case *h*, as shown in Fig. 3, a suitable instrument can be passed in the direction of the arrow entirely through one stop-cock, through the tube D, central chamber, B, and through the opposite tube D″ and cock, this instrument being such as to thoroughly cleanse the passages in which it is moved backward and forward. This facility for cleansing the instrument is an important feature, as the fouling of other cow-milking machines and the difficulty of cleansing them have hitherto detracted from their utility.

When the plugs of the several cocks have been so turned that the opening *m″* of each coincides with the opening *f′* of the branch *e*, and the opening *m′* coincides with the opening *f* of the branch *e′*, the instrument is in a condition to be applied to the four teats of the cow when the handle C is vibrated and the milk is drawn from the four teats simultaneously, and passes first into the central chamber, B, thence into the chamber A, and thence through the spout *d* into any suitable receptacle.

It is desirable in many cases that one, two, or three only of the four teats should be operated on simultaneously. In that case the plug of that stop-cock immediately below the teat on which the operation has to cease is so turned as to close the opening *f*.

It will thus be seen that by a simple adjustment of the plugs of the cocks any one or more of the four teats of the cow can be operated on by the pumping apparatus.

Instead of one three-way cock situated be-

neath each of the cups F, it will be evident that two cocks may be used for obtaining the desired result, although the three-way cock must be preferred on account of its simplicity.

I wish it to be understood that I lay no claim to the flexible rubber exhaust, as the same is shown in several patents granted to L. O. Colvin; but

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

1. Stop cocks so combined with a cow-milker so constructed and so arranged in respect to the teat-cups of the same that the operation of the instrument on one or more of the teats may be discontinued while it is continued on the remaining teats.

2. The three-way cocks E, with their branches *e* and *e'*, and the several openings herein described, in combination with the four branches D, D', D'', and D'''.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

G. H. GARDNER.

Witnesses:

CHARLES E. FOSTER,

JOHN WHITE.