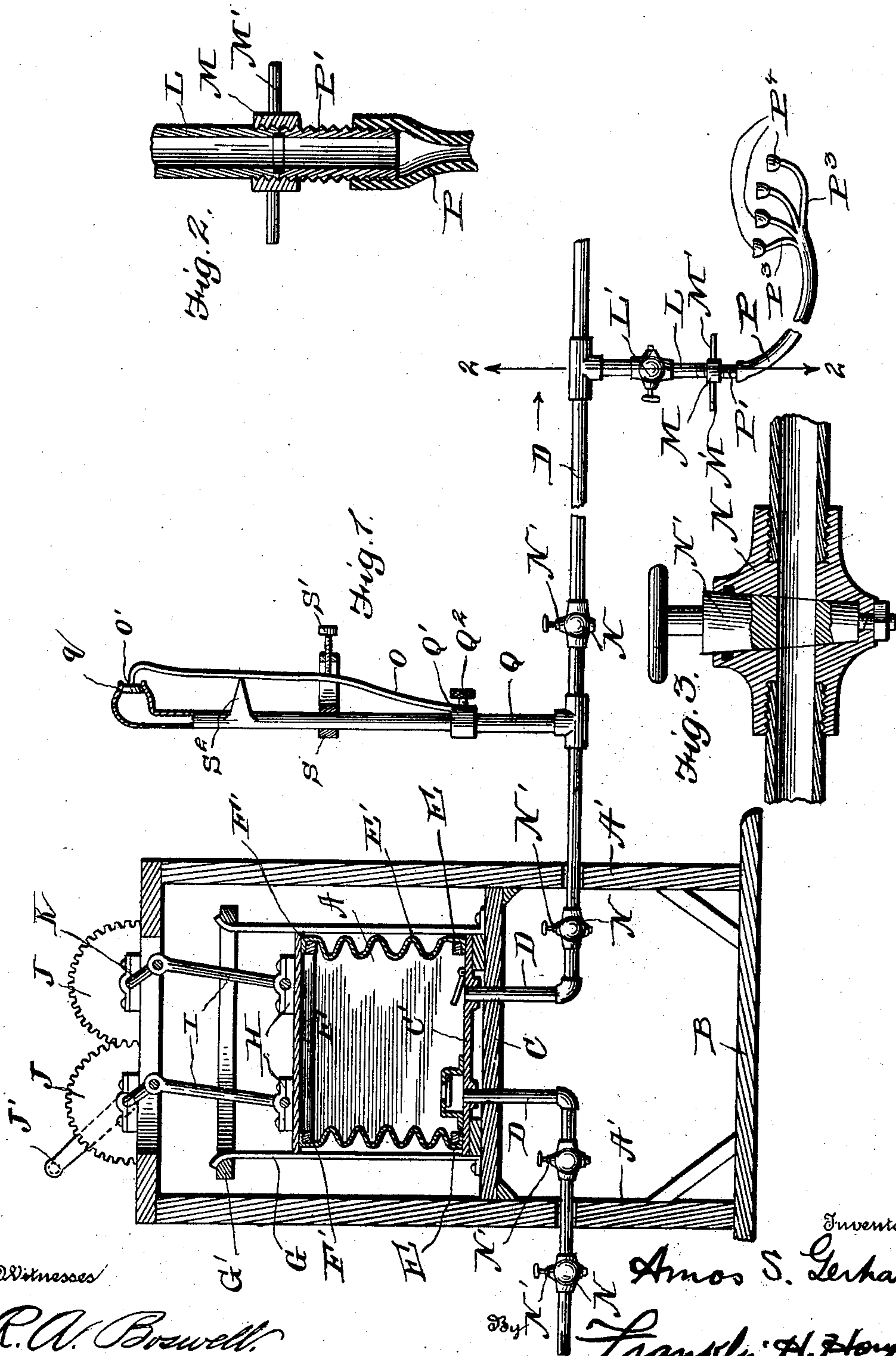


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A. S. GERHARD.
MILKING APPARATUS.
APPLICATION FILED FEB. 24, 1904.

NO MODEL.



Witnesses

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UNITED STATES PATENT OFFICE.

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MILKING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 762,819, dated June 14, 1904.

Application filed February 24, 1904. Serial No. 195,095. (No model.)

To all whom it may concern:

Be it known that I, AMOS S. GERHARD, a citizen of the United States, residing at Clayton, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Milking Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in cow-milking apparatus; and the object of the invention is to produce an apparatus which may be conveniently located and so adapted as to milk several cows at the same time by means of branching suction-pipes running from the apparatus to the various cows.

The invention consists, further, in various details of construction and combinations and arrangements of parts, which will be hereinafter fully described and then specifically defined in the appended claim.

My invention is illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which drawings similar letters of reference indicate like parts in the views, in which—

Figure 1 is a vertical sectional view through my apparatus, parts being shown in elevation. Fig. 2 is a detail sectional view on line 2 2 of Fig. 1. Fig. 3 is a detail section through one of the valve-chambers and valves.

Reference now being had to the details of the drawings by letter, A designates a receptacle, which may be of any size or shape and supported upon legs A', rising from a base B, and C designates the bottom of the receptacle, which is adapted to hold the milk which is extracted from the cows, and positioned upon the bottom of said receptacle is a false bottom C', and D designates pipes leading through said false bottom and through the legs A'. Fastened to said false bottom are the strips E, to which the lower edge of the bellows E'

is fastened, while a plunger F is fastened to the upper portion of the bellows, being held thereto by means of the cleats F'. Rising from the bottom C is a sheath G, which is made, preferably, of metal and is provided with a hoop G' about its top and serves to protect the bellows and hold the same from bulging outward. Mounted upon said plunger F are the bearing-blocks H, in which the lower ends of the crank-arms I are journaled, the upper ends of said crank-arms being pivotally connected to the crank-shafts K, which are journaled in suitable bearings on the cross-piece or top to said receptacle. Pinion-wheels J are fixed to said shafts K and intermesh with each other, and an operating-handle J' is fastened to one of said shafts, whereby the apparatus may be operated.

The pipes D have valve-chambers N, positioned at different locations, and N' designates plug-valves positioned therein. Branching from the pipe D is a pipe Q, which has a collar Q' fastened thereon by means of a thumb-screw Q², and O designates a spring-arm projecting from said collar and having a plate O' at one end adapted to close over the nozzle or inlet end of said pipe Q. Carried by the pipe Q is a collar S, having a screw S' mounted in a threaded aperture therein, the end of which is adapted to bear against said spring-arm O, while a fulcrum S² projects from the pipe Q and against which the arm O is adapted to frictionally bear. By turning in the screw S' toward the pipe Q the plate O' will be held with greater pressure against the inlet end of the pipe Q, requiring a heavier suction to open said plate or valve, while if the screw S' is turned away from the spring-arm the plate or valve will be held with a less pressure, allowing the same to open under a less suction. The purpose of said pipe Q and the spring-actuated plate governing the inlet thereto is to provide means whereby when the suction is stronger than the spring the latter will permit the plate O' to be pushed into the inlet end of the pipe Q, allowing air to rush in to fill the vacancy caused by the suction, thereby regulating the suction during the milking operation.

Leading from the pipe D is a branching

pipe L, having a valve L' therein, and a flexible hose P is fastened to a thimble P', which is held in said hose by means of a union M, having oppositely-projecting fingers M'. The
5 bore of said union is threaded and adapted to engage the threaded end of said pipe L. The hose P is adapted to have branching pipes P³, with suction-cups P⁴ at the ends thereof, which are adapted to be applied to the teats
10 of the cow and held thereto either by suction or in any other suitable manner.

The operation of my apparatus is as follows: The receptacle may be positioned at any location away from the dirt of the stable
15 and the pipes D led to the stable, and any number of flexible branching tubes may lead from the pipe, whereby any number of cows may be milked at the same time. As the crank-shaft K is rotated motion is imparted
20 to the plunger F and suction is caused to be exerted through the pipes D, whereby the milk as it is drawn from the cow will be conveyed to the receptacle A, from which it may be drawn in any suitable manner by
25 valves. In order to prevent the backflow of the milk, check-valves are provided. In order to regulate the suction, the branching pipe Q will come into play by allowing a certain quantity of air to enter to break the force of
30 the suction.

While I have shown a particular construction of apparatus embodying the features of

my invention, it will be understood that I may make alterations in the same, if desired, without in any way departing from the spirit 35 of the invention.

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

A cow-milking apparatus comprising a receptacle, a false bottom thereto, valve-regulated pipes leading through said bottom, a bellows fastened to said false bottom, a plunger to which the top of the bellows is secured, crank-shafts, connections between the same 45 and said plunger, gear mechanism connecting said shafts, sheaths surrounding said false bottom and bellows apparatus, a suction-regulating branching pipe leading from said valve-pipe, a collar mounted upon said branching 50 pipe, a spring-arm projecting from said collar, and a plate at the end of said arm regulating the ingress of air at the end of said branching pipe, and means for regulating the tension of said spring-arm, and a branching pipe with 55 suction-cups thereon communicating with said receptacle, as set forth.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

AMOS S. GERHARD.

Witnesses:

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