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PATENTED AUG. 27, 1907.

J. E. NELSON.
SIPHON SEPARATOR.
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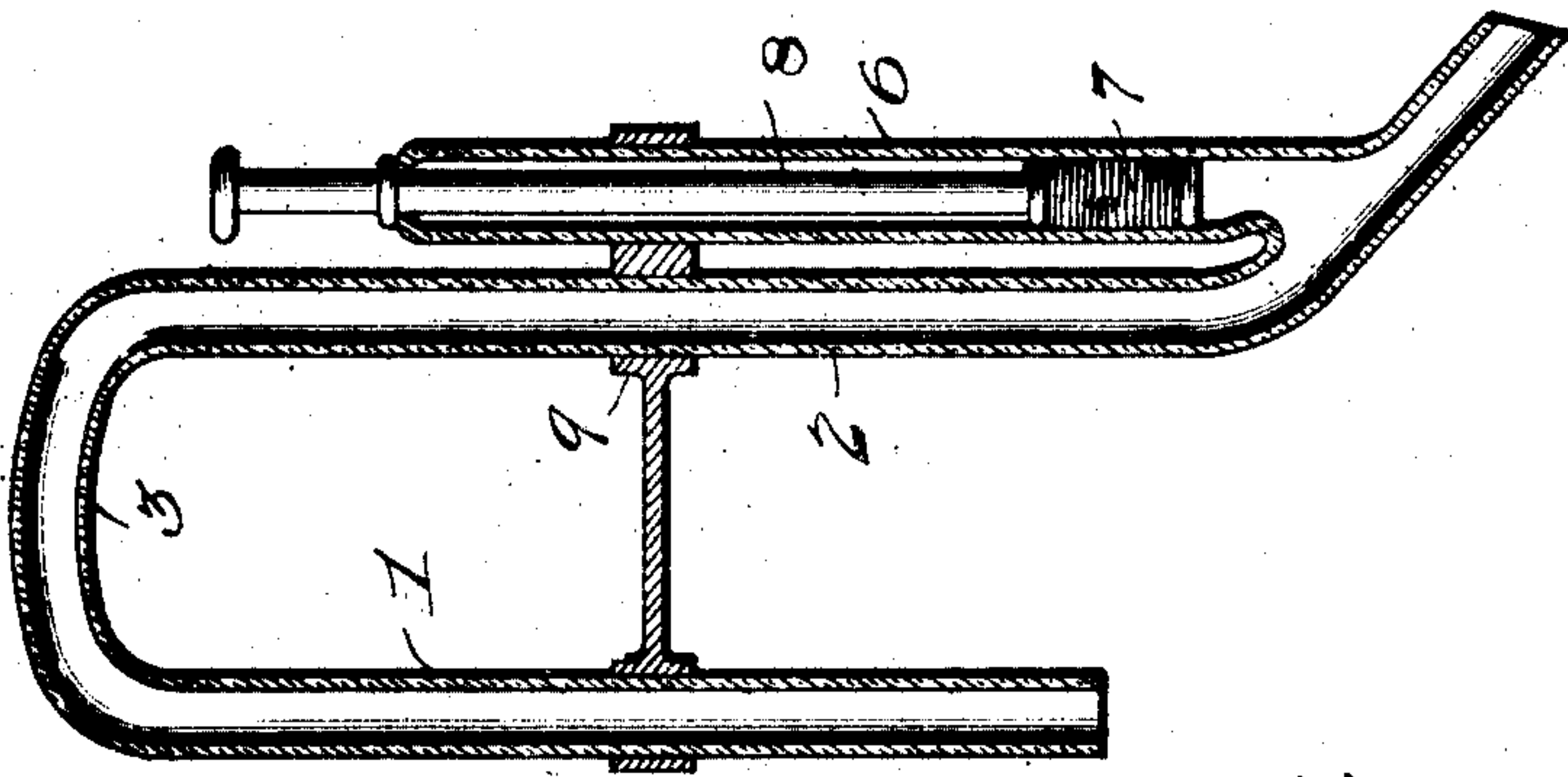


Fig. 2.

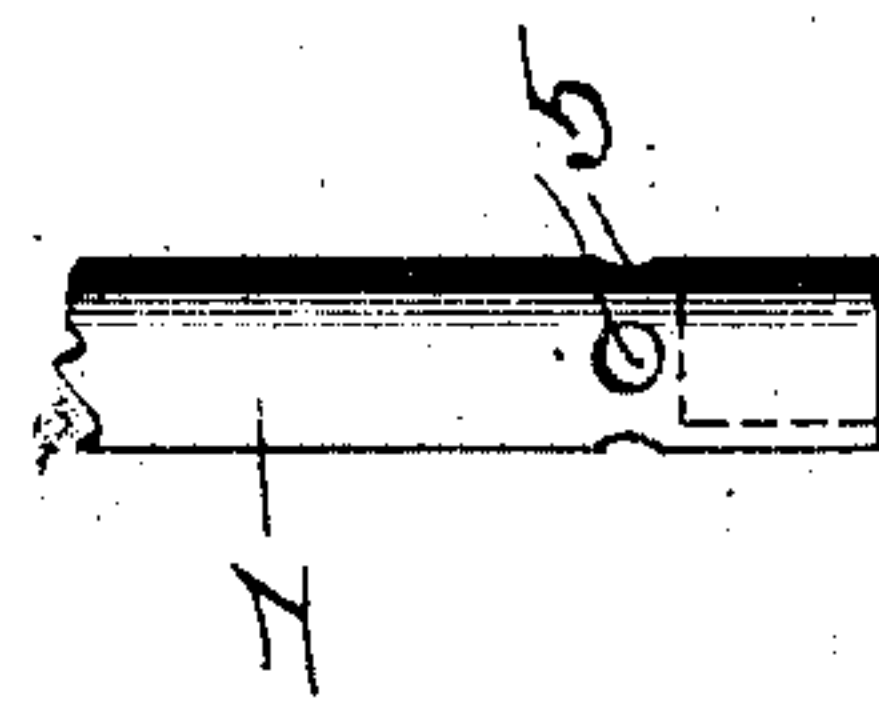


Fig. 3.

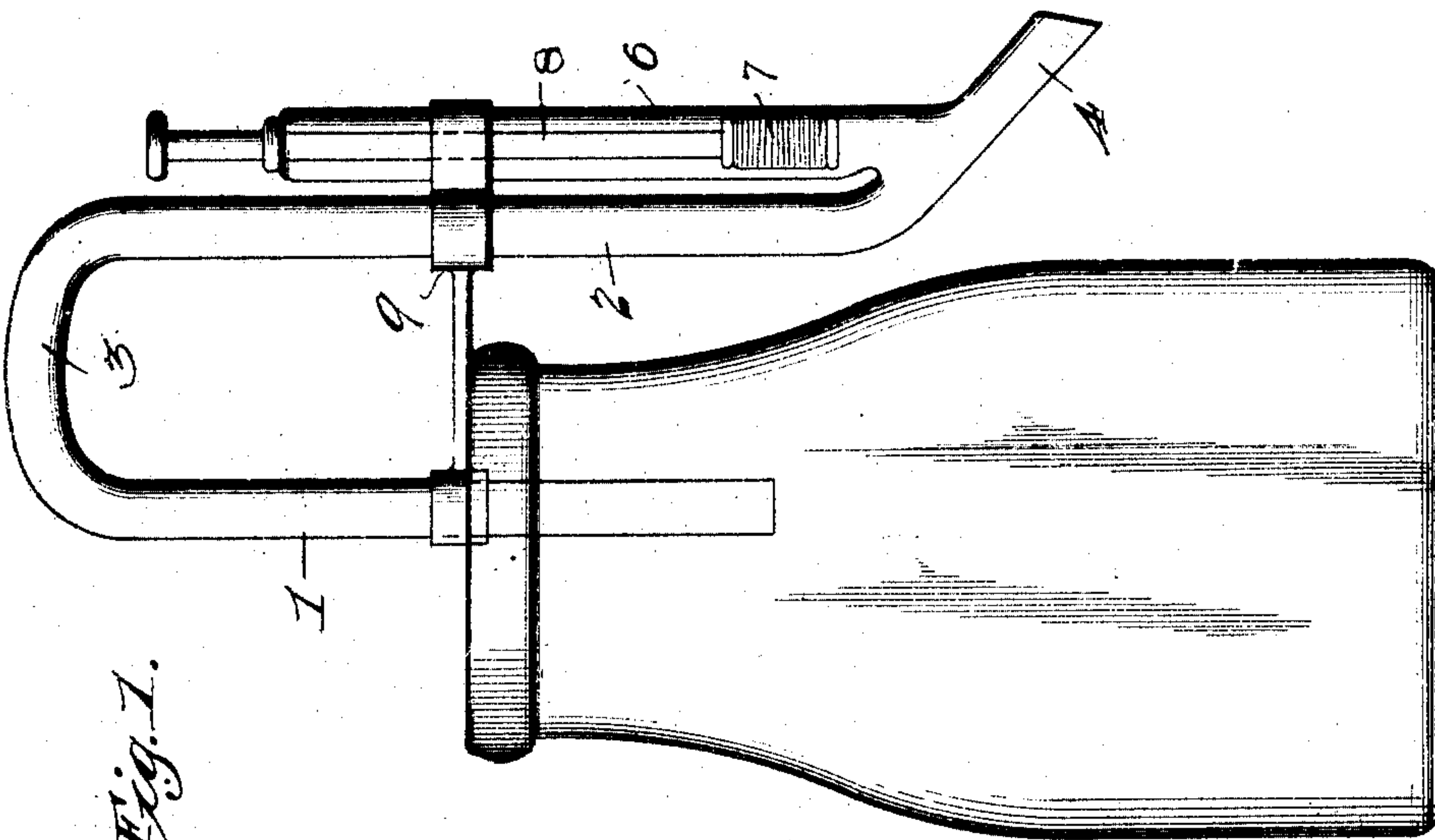


Fig. 1.

Witnesses
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SIPHON-SEPARATOR.

No. 864,678.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN E. NELSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Siphon-Separators, of which the following is a specification.

This invention relates to a siphon separator or decanting device, particularly adapted for separating cream and milk as usually delivered in bottles, or for any other purposes to which it may be found applicable.

The improved siphon separator is simple and compact in form and will be preferably constructed wholly of glass and has directly attached to the outlet extremity of the long leg thereof a pump device for starting the flow or creating the necessary suction in such leg. This pump device is disposed longitudinally with respect to the legs of the siphon or main body of the device to facilitate an operation thereof without disturbing the applied position of the separator and in contradistinction to siphon devices of this class wherein a suction bulb or other pumping device is disposed in a plane at an angle to the legs.

The improved separator embodies means for readily adjusting the depth of penetration or submergence of the shorter leg thereof with respect to the milk and cream or other liquid and to accommodate the use of the device in connection with bottles or vessels varying in depth.

In the drawings, Figure 1 is an elevation of a siphon separator shown applied to a milk bottle and embodying the features of the invention. Fig. 2 is a section through the separator. Fig. 3 is a detail elevation of the lower portion of the short leg of the siphon illustrating a slight modification.

Similar numerals of reference are used to indicate corresponding parts in the views.

The numeral 1 designates the short leg, 2 the long leg, and 3 the elbow connecting the legs of the siphon. At its lower extremity the long leg 2 is deflected at a downward angle of inclination, as at 4, to encourage an outflow or to facilitate the operation of the siphon. In starting operations the terminal of this downwardly deflected portion 4 may be closed by a suitable stopper (not shown). The lower end of the short leg 1 may be fully open as shown by Figs. 1 and 2 or closed at the lower end as shown by Fig. 3 and provided with perforations 5 therein at a distance above said lower closed end.

Integrally formed with or otherwise attached to the lower downwardly inclined extremity 4 of the long leg 2 is a pump device consisting of a cylindrical body 6 having a piston 7 therein provided with a piston rod 8

with its upper terminal projecting above the said body. The disposition of the cylindrical body 6, or the pump device as an entirety longitudinally with respect to the long leg 2 of the siphon is materially advantageous in that such pump device may be more readily operated in starting the siphon and also overcome any tendency of displacement of the latter.

The longitudinal disposition of the pump device or suction creating means just specified renders the complete separator compact in form and convenient in storage as well as in application. As shown it is preferred that the cylindrical body 6 have its lower end integrally formed with the downwardly inclined extremity 4 of the long leg 2, so that the separator as a whole may be structurally completed at one operation and without requiring connection of the parts of the formation of joints which would require packing or other treatment to render the same air tight.

The separator embodies very simple means for regulating the depth of penetration or submergence of the short leg 1, and also controlling the application of the separator to receptacles of varying depths. This regulating means consists of a surrounding band or strand 9 of suitable material which is adapted to be shifted longitudinally with respect to the legs 1 and 2 and may be of material of such nature as to naturally adhere to the legs, or frictionally engage the latter with sufficient resistance to avoid accidental displacement thereof. The advantages of this regulating means will be readily appreciated and in the use thereof it bears on the rim or upper edge of the receptacle into which the short leg 1 is projected to carry on the separating or decanting operation. This regulating means has the further function of reinforcing the pump device and the longer leg of the siphon.

The short leg 1 is inserted in the milk bottle or other device containing a liquid adapted to be separated, and after it is disposed in proper position the pump device is operated to create sufficient suction in the long leg 2 to start the flow of the liquid through the siphon and during such flow the pump device remains idle or is not operated unless there be a tendency to check of the flow, and if the latter condition is present or apparent it can be quickly modified and a regular flow caused by again actuating the pump device. As before indicated a suitable stopper may be inserted in the open end of the projection 4 in the starting operation, or the finger of the operator may be temporarily held against such open end. As soon as the suction has been created in the long leg by the use of the pump device it will be understood that if a plug or stopper be inserted in the open

end of the projection 4 such closing device will be immediately removed to avoid any obstacle to the free flow of the liquid through the long leg 2.

What I claim is:

- 5 A separating device of the class set forth comprising a siphon having two legs and a pump connected with a portion of the longer leg and in parallel relation to said latter, and a device adjustably engaging the siphon legs

and pump and operating to regulate the depth of penetration of the upper leg with respect to the locality operated upon and also reinforcing the pump and longer leg of the siphon adjacent to which the pump is located. 10

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

JOHN E. NELSON.

Witnesses:

CHARLES S. HYER,
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