

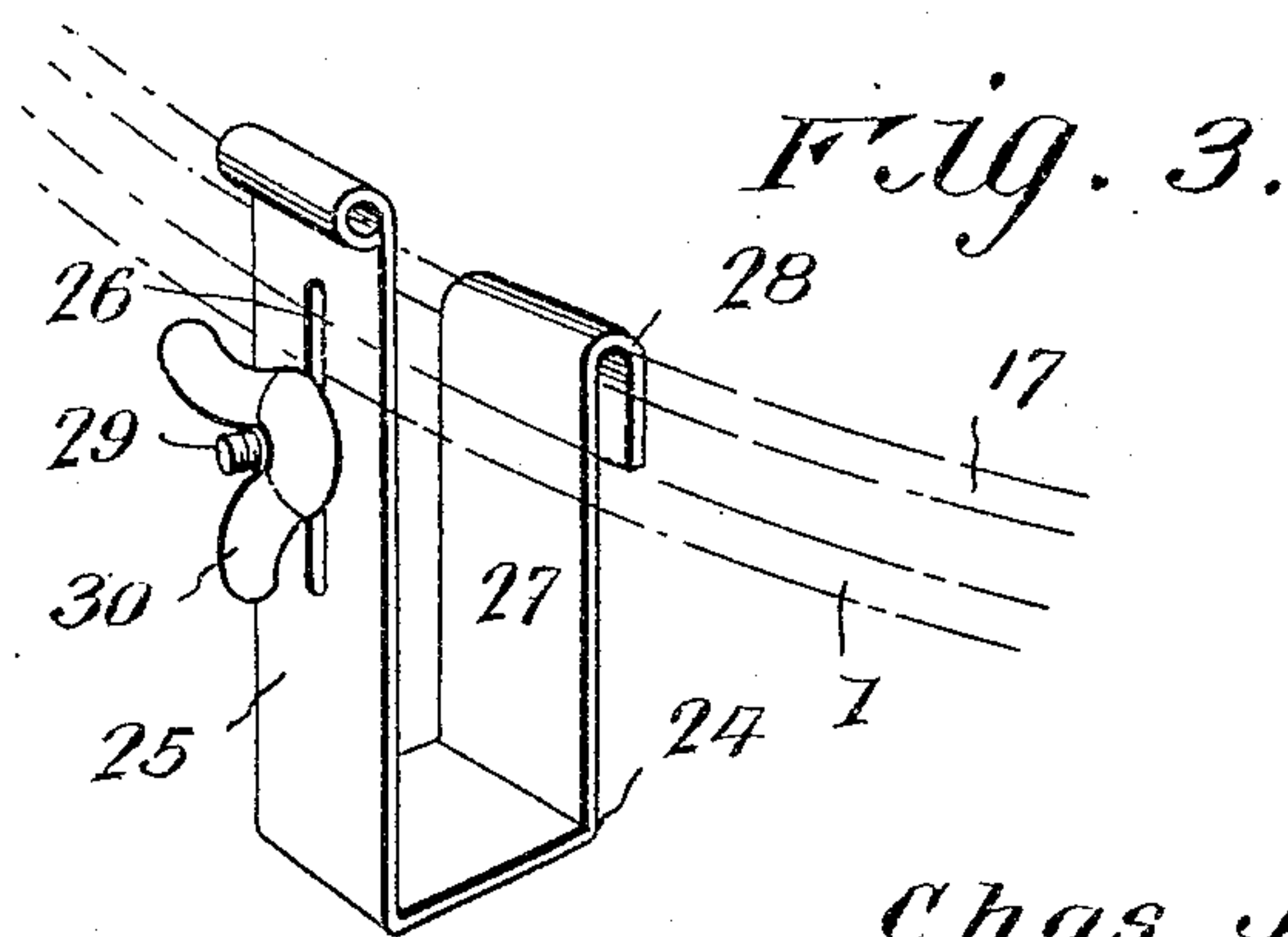
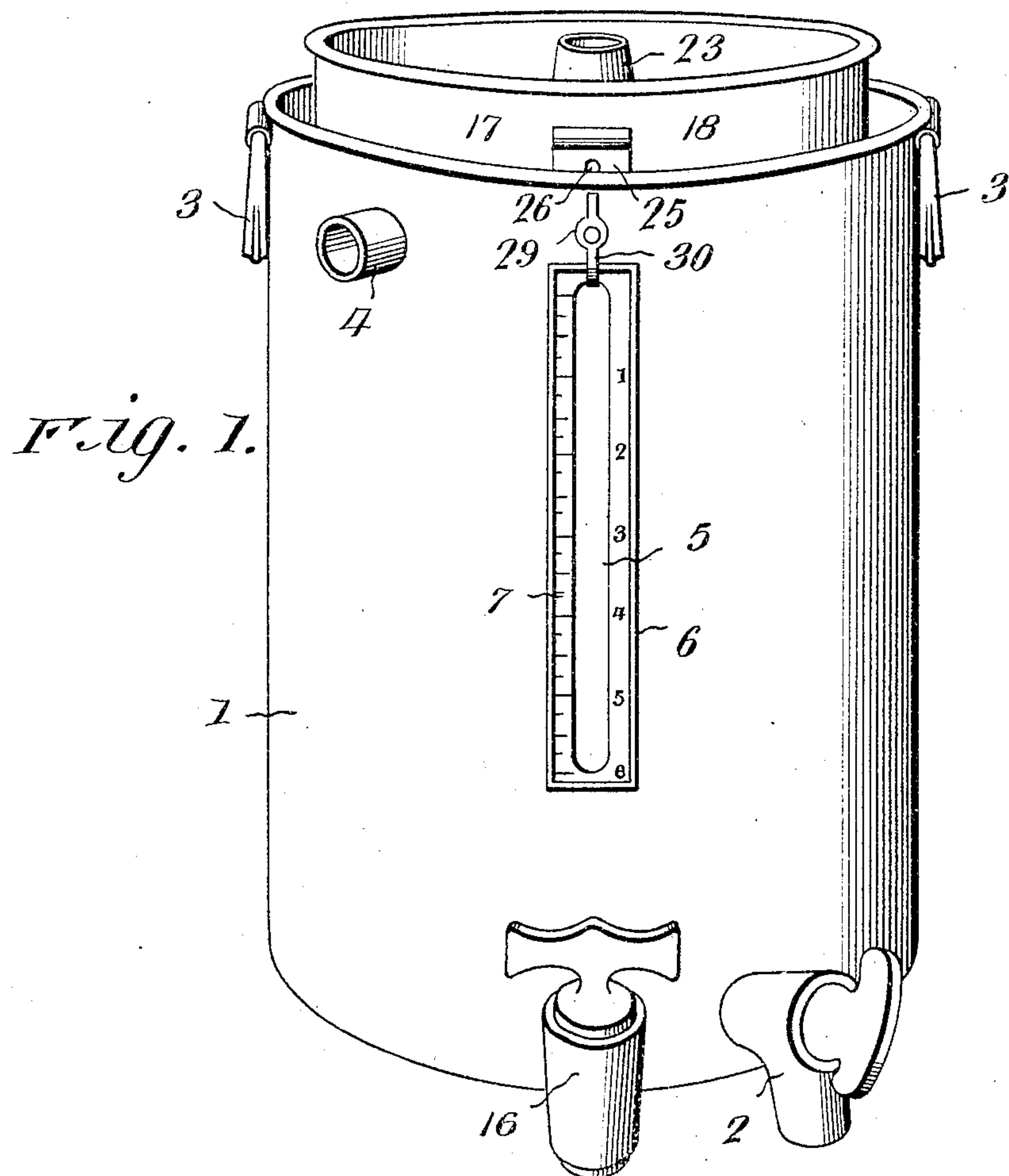
No. 778,679.

PATENTED DEC. 27, 1904.

C. J. KIRCH.
CREAM SEPARATOR.

APPLICATION FILED MAR. 1, 1904.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 2.

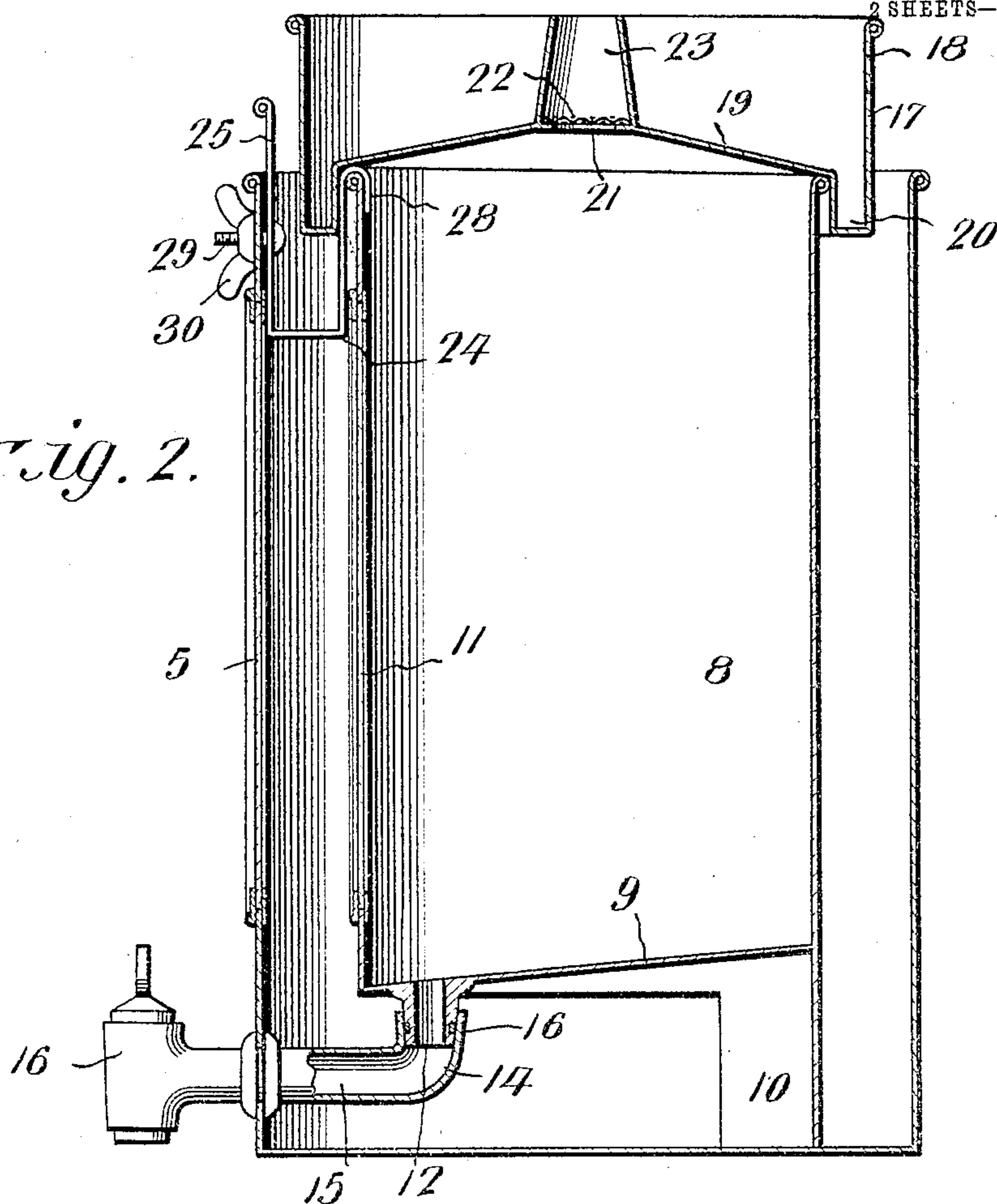
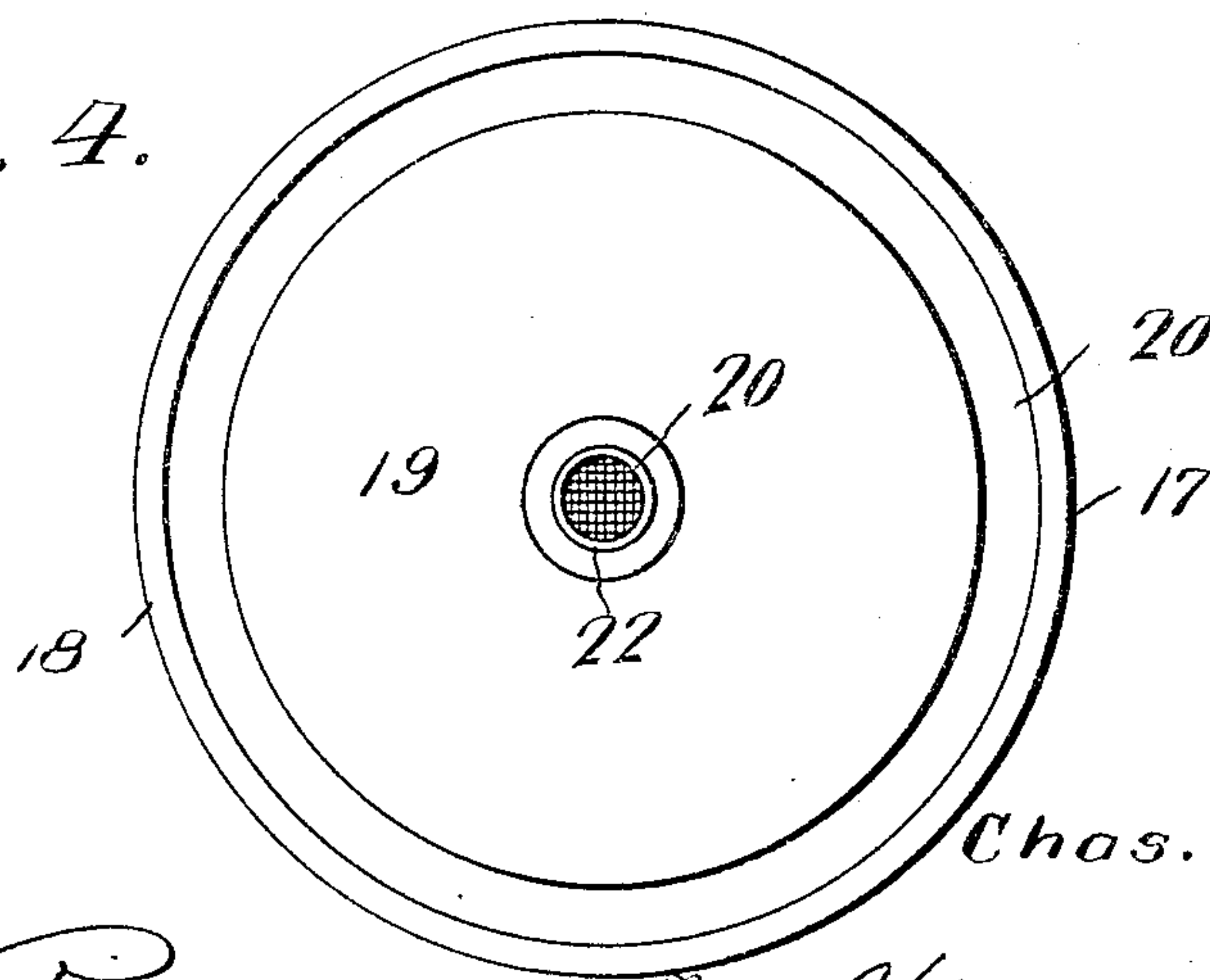


Fig. 4.



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CREAM-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 778,679, dated December 27, 1904.

Application filed March 1, 1904. Serial No. 195,995.

To all whom it may concern:

Be it known that I, CHARLES J. KIRCH, a citizen of the United States, residing at Keokuk, in the county of Lee and State of Iowa, have
5 invented new and useful Improvements in Cream-Separators, of which the following is a specification.

This invention relates to a cream-separator; and the primary object of the improved construction is to provide simple and effective
10 means for obtaining the greatest amount of cooling-surface and arranging these several parts in such manner that they may be practically entirely surrounded and covered by water.

A further object of the invention is to provide a cover, which may also be used as a strainer, with a water-chamber, the cover being adapted to absolutely seal an inner can and render it impossible for insects or dust to
15 get into the cream.

A still further object of the invention is to provide simple means for holding an inner can firmly down within an outer receptacle or larger can without interfering with the application and removal of the cover for the inner can.
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The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter set forth.

In the drawings, Figure 1 is a perspective view of a cream-separator embodying the features of the invention. Fig. 2 is a transverse vertical section through the same. Fig. 3 is a detail perspective view of a holder for the
25 inner can, a portion of the rim of the latter being shown in dotted lines. Fig. 4 is a top plan view of the cover.

Similar numerals of reference are employed to indicate corresponding parts in the several
30 views.

The numeral 1 designates an outer receptacle or can which is fully open at the top and has a flat bottom. At a suitable distance above the bottom of the can a drain-cock 2 is applied, and for convenience in transporting the can and its contents from one point to another grips or handles 3 are secured to the upper portion thereof at diametrically opposite points. At the upper end of the can or
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receptacle is an overflow-pipe or outlet means 4, and at the center of what may be termed the "front" a sight-glass 5 is also arranged in the can and surrounded by a suitable frame 6, having a scale 7 therein adjacent to the glass 5, arranged in accordance with any
40 preferred liquid measure. The can or receptacle 1 is adapted to have cold water or any other refrigerant introduced therein, and removably mounted and centrally held within the said can or receptacle is a milk can or
45 receptacle 8, provided with an inclined bottom 9 and a depending extension 10 to serve as a leg or support. The milk-can 8 also has a sight-glass 11 therein, which is held in alignment with the glass 5, so that the contents of
50 the can may be easily inspected from the exterior of the separator. An outlet-nipple 12 depends from the bottom 9 adjacent to the lowest point of the latter and is adapted to removably fit in the upturned end or open
55 terminal of an elbow 14, forming part of an outflow-pipe 15, which projects through the lower part of the can or receptacle 1 directly under the sight-glass 5 and communicates with an exteriorly-located cock or faucet 16. To seal
60 the joint between the nipple 12 and the upturned end or open terminal of the elbow 14, said nipple has the outer surface converged toward the lower end thereof and supplied with a countersunk gasket 16, the upper open
65 terminal of the elbow being flared to receive the nipple, constructed as set forth, and thereby overcome any tendency to leakage at this point.

On the upper open end of the milk-can 8 a
70 reversible cover 17 is applied, said cover being formed with a surrounding side wall 18, an upwardly bent or projected inclined bottom 19, and an annular chamber 20 between the said bottom and the side wall, the lower
75 terminal of the chamber depending materially below the bottom 19. The bottom at the center or highest point has an opening 21 formed therein, covered by a wire-gauze or other
80 suitable strainer 22, and surrounding the opening and strainer is a funnel 23, having its upper end terminating in a plane coincident with that of the edge of the side wall 18. The up-
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per edges of the receptacles 1 and 8 and the side wall 18 are beaded for obvious reasons, and when the cover 17 is applied over the receptacle 8 the side wall thereof extends above the upper edge of the receptacle 1 a considerable distance to adapt said cover to be used as a top water chamber or receptacle, and by having the chamber 20 depend below the bottom 19 it will extend into or meet the water disposed in the receptacle 1 around the can 8, and thereby practically submerge said latter receptacle and the contents thereof to be treated. The inner wall of the chamber 20 snugly fits over the upper open end of the milk can or receptacle 8, and the funnel, together with the opening 21, will operate as a vent means to permit the animal heat from the milk in the can or receptacle 8 to escape. The cover 17 is reversible and is adapted to be used as a strainer by projecting the funnel 23 downwardly into the can or receptacle 8, the inner wall of the annular chamber 20 in such arrangement serving as a guard-rim.

The improved separator also includes effective means for holding the can or receptacle 8 down in proper position within the receptacle 1 and to maintain a positive connection between the nipple 15 and the upper open terminal of the elbow 14. This means is clearly shown by Fig. 3 and consists of a U-shaped clamp 24, having a long arm 25 with a vertical slot 26 in the upper extremity thereof and a shorter arm 27, having its upper end out-turned and bent downwardly to provide a hook 28 to slip over the upper end or rim of the milk can or receptacle. A screw-threaded bolt 29 is inserted through the upper part of the receptacle 1 above the sight-glass 5, with its head innermost, and extends through the slot 26 of the arm 25, the outer screw-threaded extremity of the said bolt being engaged by a winged nut 30. Through the medium of the bolt 29 and nut 30 the clamp may be readily adjusted to cause the hooked end 28 of the arm 27 to firmly engage and exert a downward holding pressure on the receptacle 8 or permit said clamp to be loosened when it is desired to remove the said receptacle 8 from the receptacle 1. The cover 17 fits over the part of the clamp or holding means which engages the receptacle 8, as clearly shown by Fig. 2, thereby assisting to maintain the said holding means against upward displacement.

In the use of the improved separator the can 8 is inserted in the receptacle 1 and the nipple 12 caused to engage the elbow 14 of the outlet-pipe 15, the cock or faucet 16 being closed. The holding means or clamp 24 is then applied, as shown in Fig. 2, and the receptacle 1 filled with water around the can up to a point near the upper end of said can, it being understood that the cock 2 is in closed position when the water is introduced. The cover 17 is then positioned to serve as a strainer and the milk poured therethrough into the can,

and after the latter has been filled or has had milk disposed therein, as desired, the said cover is reversed and again applied to the upper end of the can. Water is then poured into the cover, and in view of the fact that the upper terminal of the funnel is coincident with the plane of the upper edge of the said wall 18 it will be impossible for any of the water poured into the cover to pass down through said funnel into the can. After the parts have been thus arranged it will be seen that the milk in the can is submerged or fully inclosed by the water, and in place of the latter a refrigerant material may be employed or pieces of ice introduced into the water. Water may also be permitted to run into the upper end of the receptacle 1 and pass out through the overflow 4. When the cream shall have become separated from the milk, and which can be determined by inspecting the contents of the can 8 through the sight-glasses 5 and 11, the cock or faucet 16 is opened, and the milk below the cream is drained off from the can sufficiently to have the cream only remaining in said can. The water in the receptacle 8 may also at this time be allowed to escape through the cock 2, and subsequently or without removing the water from the receptacle 1 the cream can be permitted to run out of the can 8 through the pipe 15 and the faucet 16. At any time desired the several parts of the separator may be disassembled and cleaned.

The receptacle 1 and can 8 are preferably made circular to insure strength, and it will be observed that all the parts are of simple construction and especially that the milk-can is without any central tubes or other projections on which the cream would hang and become wasted. By the arrangement set forth also all liability of water coming in direct contact with the milk in the can 8 is avoided. In the use of materials it is preferred to form the can 8 of heavy charcoal-tin and the outside of galvanized steel, though other materials may be employed in the manufacture of the cheaper grades of the separator. It will also be understood that changes in the proportions, dimensions, and minor details may be resorted to without departing from the spirit of the invention.

Having thus fully described the invention, what is claimed as new is—

1. A cream-separator, comprising an outer receptacle entirely open at its upper end, an inner receptacle having the bottom thereof supported above the bottom of the said outer receptacle, means applied to the outer receptacle for holding the inner receptacle downwardly, said means having a member partially embracing the upper edge of the inner receptacle, and a cover for the inner receptacle fitting over the said member.

2. A cream-separator, consisting of an outer receptacle having a lower outlet-pipe extend-

ing thereinto and provided with an outer faucet and an inner open end, a milk-receiving can removably disposed in the receptacle and having a bottom with a depending nipple to
5 enter the inner open end of the outlet-pipe, and a holding means consisting of a U-shaped clamp having one arm with an upper terminal hook to fit over the upper end of the can and the remaining arm longitudinally slotted, and

a bolt and nut carried by the receptacle and to engaging the said slotted arm.

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

CHARLES J. KIRCH.

Witnesses:

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J. F. SMITH.