No. 646,537. Patented Apr. 3, 1900.

M. S. FIELD.

MILK PAIL STRAINER.

(Application filed June 30, 1899.)

(No Model.)

Fig. 1.

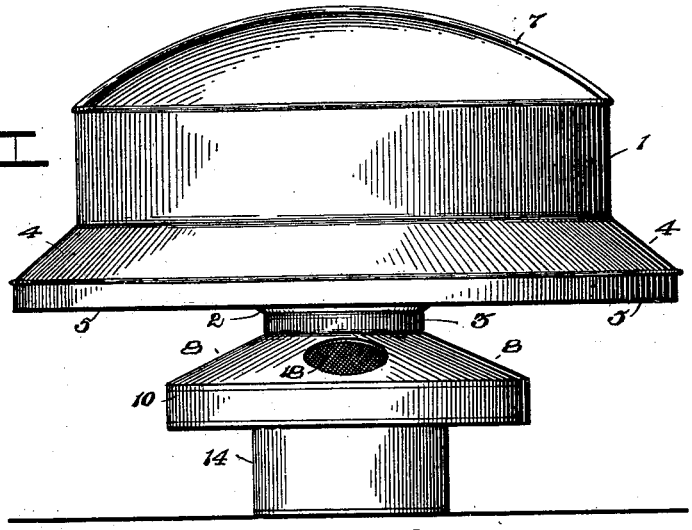


Fig. 2.

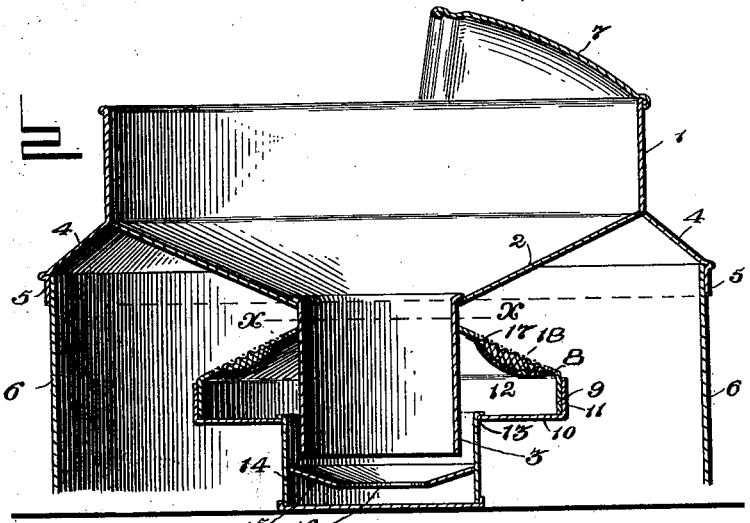
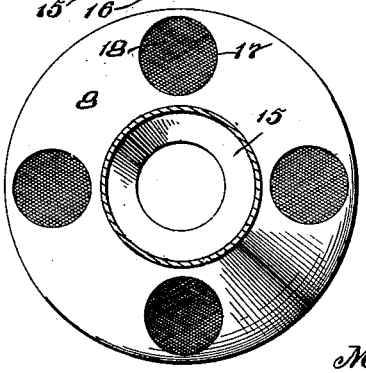


Fig. 3.



Witnesses

John Manspin

O. E. Shepard

M. S. Field Inventor,

By Its Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

MARTIN S. FIELD, OF RACINE, WISCONSIN.

MILK-PAIL STRAINER.

SPECIFICATION forming part of Letters Patent No. 646,537, dated April 3, 1900.

Application filed June 30, 1899. Serial No. 722,401. (No model.)

To all whom it may concern:

Be it known that I, MARTIN S. FIELD, a citizen of the United States, residing at Racine, in the county of Racine and State of Wisconsin, have invented a new and useful Milk-Pail Strainer, of which the following is a specification.

This invention relates to strainers, and has for its object to provide an improved detachable straining-cover for milk-pails. Heretofore such covers have been provided with a filtering medium of sand or the like which soon becomes sour, and in view of this disadvantage the present invention employs settling-chambers, obstructions, and foraminous strainers to separate the foreign matter from the milk, so that the latter may be used directly from the pail without again straining the milk. It is also designed to provide a cover which completely closes the entrance to the pail, so that the contents thereof are not exposed to the vitiating air of the stable or milking-place and at the same time permitting of the milk being directed immediately into the pail.

Another highly-important feature of the invention is to provide improved means for separating the animal heat from the milk while the latter is passing through the strainer.

With these ends in view the invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and the minor details of construction may be made within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the present invention.

In the accompanying drawings, Figure 1 is a side elevation of the improved straining-cover. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a detail sectional view taken on the line x x of Fig. 2.

Corresponding parts in the several figures of the drawings are designated by like characters of reference.

Referring to the accompanying drawings it will be seen that the cover is in the form of a funnel comprising an upstanding annular ring or band 1, having a conical bottom 2, provided with a pendent tube or spout 3 and an outwardly and downwardly flared flange 4, extending from the juncture of the conical bottom 2 and the band or ring 1. The outer edge of the flange 4 is provided with a downwardly-extending annular shoulder 5, which is adapted to embrace the upper end of a suitable pail 6, whereby the upper open end thereof is substantially covered. A segmental shield 7 is connected to the upper edges of the band 1 and arches over the top thereof, so as to partially prevent ingress of foreign matter and at the same time leaving a sufficiently-large opening for the introduction of the milk into the body of the funnel-shaped cover.

Surrounding the tube 3 and connected thereto is a downwardly-flared wall 8, which is provided with a pendent annular flange 9, the lower edge of which is located in a plane above that of the lower edge of the tube 3. Removably fitted to the annular flange 9 is a flat disk 10, having an upstanding marginal flange which embraces the flange of the wall 8 and forms a bottom for the chamber 12, which is formed between the disk and the downwardly-flared wall 8.

The flat disk 10 is provided with a central opening 13, from which depends a fixed cup 14, communicating with the chamber 12. It will be noted that the diameter of the cup 14 is somewhat greater than that of the tube 3, and the lower end of the latter projects into the cup and extends about half-way to the bottom thereof. Located below the lower end of the tube 3 and fixed to the inner walls of the cup is a dished diaphragm 15, which is provided with a central opening 16, of less diameter than that of the tube 3 and forming a baffle-plate.

In the operation of the device the cover is fitted to a pail, as clearly shown in Fig. 2 of the drawings, and the milk is directed into the funnel-shaped cover, passing downward through the tube 3 into the cup 14. As the level of the milk rises within the cup it passes upwardly into the chamber 12 and then overflows through openings 17, formed in the walls 8 and provided with foraminous strainers 18. Thus it will be seen that the chamber 12 and the cup 14 form settling-chambers to collect the heavy foreign matter, and thereby sepa-

rate the latter from the milk, and the foraminous strainers 18 prevent the finer and lighter particles of foreign matter from passing into the interior of the pail. The diaphragm 15 and the contracted passage formed between the tube 3 and the side walls of the cup form obstructions which retard the rise of the milk, so that the latter is not violently agitated, and thereby affords sufficient time for the effective settling and separation of the foreign matter. Also the comparatively-slow movement of the milk permits the animal heat escaping therefrom upward through the tube 3, so that the milk overflows into the interior of the pail in an effectively-aerated condition. Furthermore, the diaphragm 15 being located comparatively close to the bottom of the cup 14 prevents a circulation and an upward rising of the sediment which may collect upon the bottom of the cup.

It will be noted that the present device effectually covers the entrance opening into the pail, so that the latter may be left without an additional cover after being filled with milk without danger of dirt gaining access to the interior of the pail; also, as the cup 14 is removably connected to the wall 8 said cup may be readily separated from the cover proper, thereby facilitating the cleansing of the device and providing a sanitary cover.

What I claim is—

1. In a strainer, the combination with a funnel, of an upper sediment-chamber surrounding the spout of the funnel, located exteriorly of the bowl thereof, and provided with exit-openings, and a lower sediment-chamber, receiving the discharge end of the spout, and communicating upwardly with the upper sediment-chamber, substantially as shown and described.

2. In a strainer, the combination with a funnel, of an upper sediment-chamber surrounding the spout of the funnel, located exteriorly of the bowl thereof, and provided with exit-openings, a lower sediment-chamber, receiving the discharge end of the spout, and communicating upwardly with the upper sediment-chamber, and an inverted conical baffle-plate fitting snugly the interior walls of the lower sediment-chamber, located below the discharge end of the spout, and above the bottom of the chamber, receiving the discharge from the spout, and provided with a central opening of smaller diameter than the spout, substantially as shown and described.

3. In a strainer, the combination with a funnel, of a dished wall snugly embracing the spout of the funnel, located exteriorly of the bowl thereof, and provided with a pendent peripheral flange and exit-openings, a disk detachably fitted to the peripheral flange and forming an upper sediment-chamber, and provided with a central opening of greater diameter than the spout, the latter projecting through said opening and below the disk, and a cup fitted to the walls of the opening in the disk and forming a lower sediment-chamber, having a greater diameter than the spout, thereby communicating with the upper chamber, and also receiving the lower discharge end of the spout, substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

MARTIN S. FIELD.

Witnesses:
J. G. TEALL,
W. W. ROWLANDS.