(No Model.)

S. D. PALMER.

CHURN CLOSURE.

No. 418,356. Patented Dec. 31, 1889.

Fig. 1.

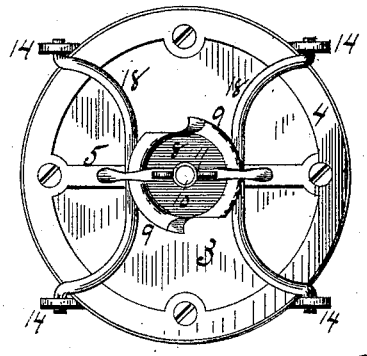

Fig. 2.

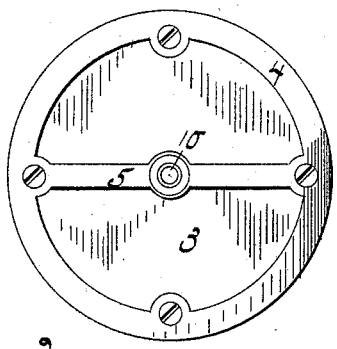

Fig. 3.

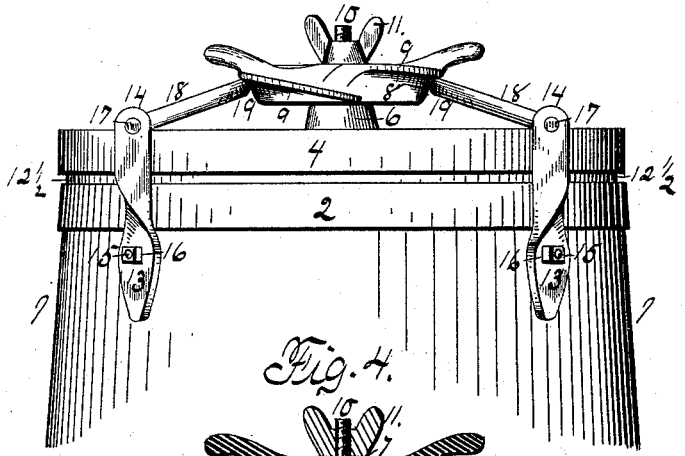

Fig. 4.

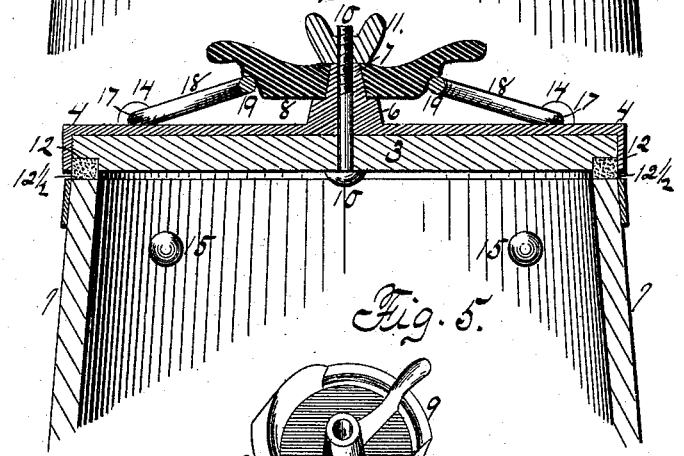

Fig. 5.

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UNITED STATES PATENT OFFICE.

SAMUEL D. PALMER, OF ROCKFORD, ILLINOIS.

CHURN-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 418,356, dated December 31, 1889.

Application filed August 15, 1889. Serial No. 320,876. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL D. PALMER, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Churns, of which the following is a specification.

The object of this invention is to construct a churn in which a removable head is held in position by bails pressing on the removable head, said bails being pivoted to ears secured to the churn-body.

The further object is to construct ears which are secured to the churn-body by fastening in any suitable manner, the upper ends of the ears standing at an angle to the main portion, so that bails may be pivoted therein and capable of a swinging movement.

Figure 1 is a plan view of a churn embodying my invention. Fig. 2 is a plan view of the removable head. Fig. 3 is a side elevation of the churn shown in Fig. 1 on an enlarged scale. Fig. 4 is a vertical central section showing the removable head resting on the end of the staves. Fig. 5 is an isometrical representation of the cam employed in securing the removable head in position.

In the drawings, the churn-body consists of the staves 1, secured together by hoops in the usual manner.

The upper or open end of the churn has a hoop 2, of suitable material, holding that portion of the churn in a true circular position. The ends of the staves are beveled, so as to be at right angles to the lengthwise axis of the churn. A removable head, the main portion 3 of which is of wood, has a metallic ring 4 surrounding its periphery and a portion of its top, and is held to the wooden portion in this instance by screws. A brace-arm 5 spans the head and holds it from warping. From the center of this brace rises a bearing for the cam employed to hold the removable head in position. This bearing has a lower or base portion 6 and a smaller or upper portion 7. The cam 8 in this instance rests on the shoulder formed by the two portions above referred to, so as to permit it to oscillate or rotate thereon. This cam is provided with two cam-faces 9, so arranged that in the oscillating or rotating movement thereof the bails will be depressed more or less as occasion may require. This cam is held in position by a bolt 10, passing from the under side of the removable head up through said head and bearing and receiving a thumb-nut 11 on its upper end, as shown at Fig. 3. This cam has operating-handles projecting beyond the periphery of the cam, which form means for oscillating the cam. An annular groove 12 is formed in the under side of the removable head at the extreme outer edge of its periphery, and in said groove is placed a packing 12½, of cork or other suitable material, which extends below the under face of the removable head, to rest upon the ends of the staves forming the body of the churn, thus making a close connection between the parts and being held in such position by bails, to be hereinafter described.

I have constructed an ear of peculiar shape, which consists of a lower portion 13, that conforms to the outside surface of the churn, and an upper portion 14, twisted or turned at an angle to the base portion. This ear is secured to the churn-body by a bolt 15 or other fastening passing radially through the churn and ear, and in this instance securing a screw-nut 16 on its outward-projecting end, which can be turned up so as to bind the ear firmly to the churn. The upper portion is perforated, as at 17. Two pairs of these ears are secured to the churn-body, as above described, and set at four points, so that the holes of a pair of ears will be in line with each other, thus forming the bearings, in which a pair of bails 18 are pivoted, so that said bails will rest upon the periphery of the removable head intermediate of their pivotal connections with the ears and their free portions 19. The free portions of the bails in this instance engage the cam-fastening, by means of which they are depressed, thus forcing down the removable head and holding it to the churn-body in such a manner as to prevent the contents of the churn leaking out.

By the above construction I produce a churn with an opening the full size of the churn and with a smooth interior face, thereby preventing all liability of milk and cream becoming rancid by clinging in the croze of churns employing ring-heads, and by securing the ears

on the outside of the churn all strain is borne thereby, and the removable head is secured in position by simply swinging the bails inward, thus engaging the fastening on the head, and should the cam herein shown be used a partial turn upon its axis is sufficient to hold the head securely to its seat.

By the above construction it will be seen that the bails extend across the churn on a chord of its circumference, and consequently each bail presses on the removable head at two points, thereby holding it in position on the churn and equalizing the pressure applied by each bail.

In this application I have shown and described the removable head formed with a packing which rests upon the end of the staves. Such feature, in connection with bails or other fastening, is the invention of H. H. Palmer and myself. I therefore do not seek to cover said feature.

I claim as my invention—

1. The combination of a churn-body having a smooth interior surface, a removable head, and two pairs of ears secured to the churn-body and a pair of bails pivoted to the ears, each bail pressing at two points on the removable head, substantially as set forth.

2. The combination of a churn-body having a smooth interior surface, a removable head, two pairs of ears secured to the churn-body, a pair of bails pivoted to the ears, each bail pressing at two points on the removable head, and a fastening to the bails, substantially as set forth.

3. The combination of a removable head, a churn-body, two pairs of ears secured to the churn-body and provided with bail-holes arranged at an oblique angle to the base portion of the ears, and a pair of bails pivoted to the upper portion of the ears and engaging the removable head, substantially as set forth.

4. The combination of a removable head, a churn-body, two pairs of ears secured to the churn-body, the upper portion of the ears formed at an angle to the base portion, and a pair of bails pivoted to said upper portion and engaging the removable head, thereby holding it in position, substantially as set forth.

5. The combination of a removable head, a churn-body, two pairs of ears secured to the churn-body, the upper portion of the ears formed at an angle to the base portion, a pair of bails pivoted to the said upper portion and engaging the removable head, and a fastening for the bails, substantially as set forth.

6. The combination of a removable head, a fastening on the removable head, a churn-body, two pairs of ears, each ear being secured to the churn-body by a fastening passing radially through the churn-body and ear, the upper portion of the ears formed at an angle to the base portion, and a pair of bails pivoted to said upper portion and engaging the fastening, thereby holding the removable head in position, substantially as set forth.

7. The combination of a churn-body, a pair of bails pivoted thereto, a removable head, and a cam secured to the removable head to engage the free portion of the bails, substantially as set forth.

8. The combination of a churn-body, two pairs of ears secured thereto, a pair of bails pivoted to the ears, a removable head, a cam located on the removable head to engage the free portion of the bails, and means for operating the cam, substantially as set forth.

9. The combination of a churn-body, a pair of bails pivoted thereto, a removable head, a cam located on the removable head to engage the free portion of the bails, said cam being provided with a lever projection or projections to form means for operating the cam, substantially as set forth.

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