

H. G. BEMIS.
WASHING MACHINE FOR MILK SEPARATOR DISKS.

APPLICATION FILED JAN. 11, 1913.

1,061,157.

Patented May 8, 1913.

2 SHEETS-SHEET 1.

Fig. 1.

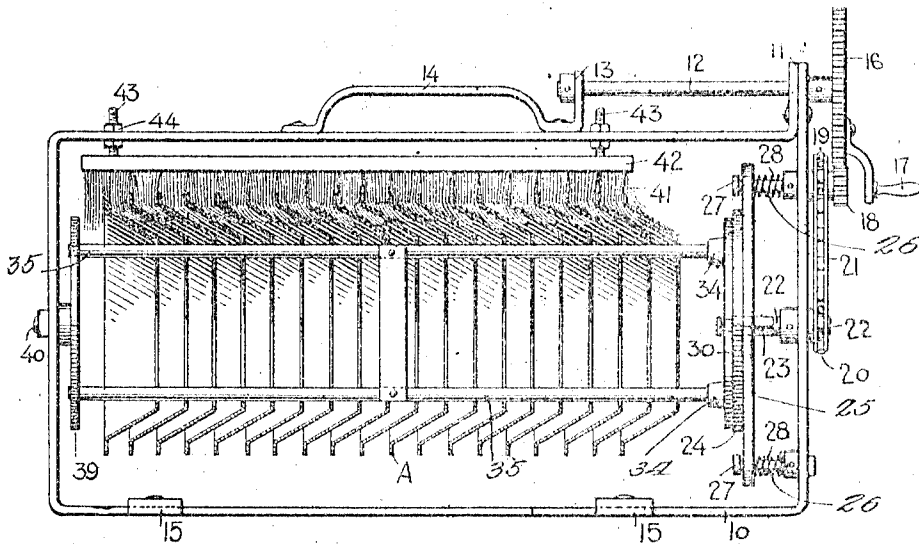
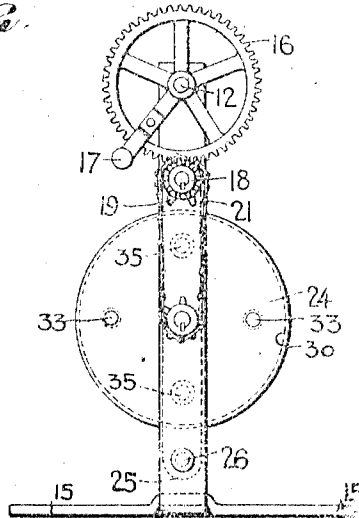


Fig. 2.



WITNESSES

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H. G. BEMIS.
 WASHING MACHINE FOR MILK SEPARATOR DISKS.
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2 SHEETS-SHEET 2.

Fig. 3.

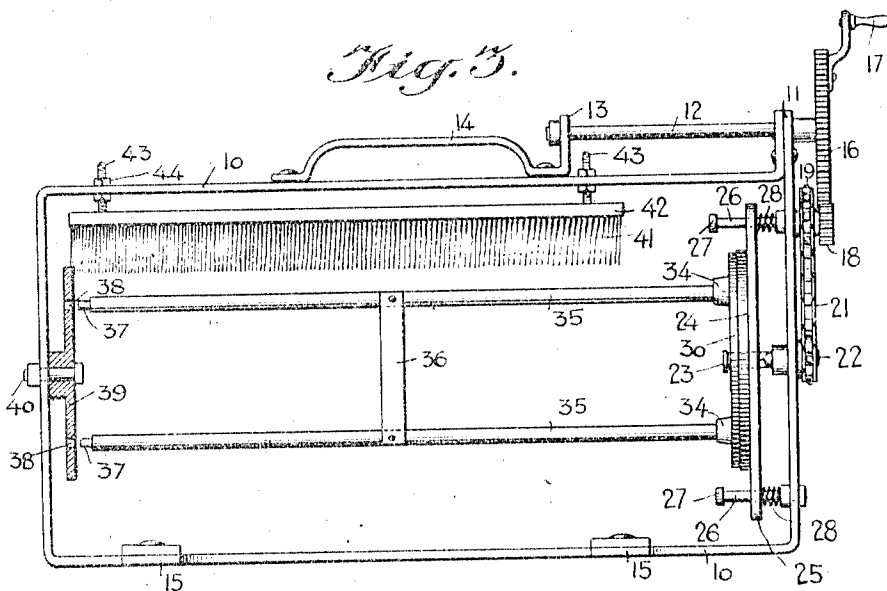


Fig. 4.

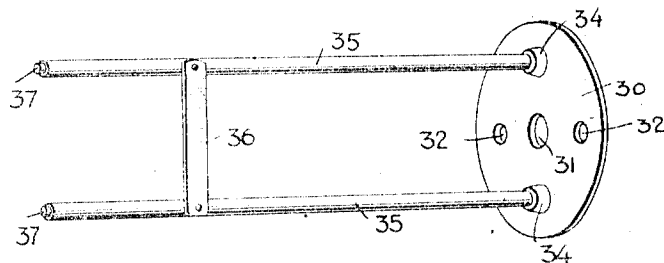
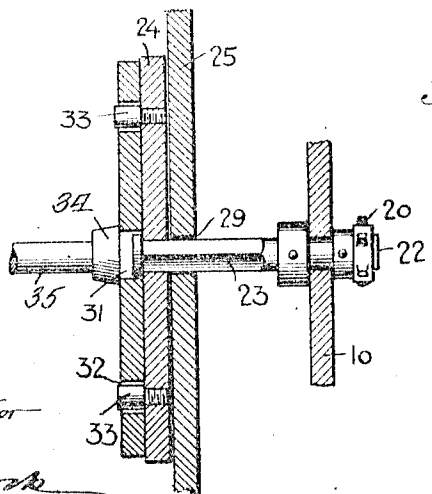


Fig. 5.



WITNESSES

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WASHING-MACHINE FOR MILK-SEPARATOR DISKS.

1,061,157.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed January 11, 1913. Serial No. 741,435.

To all whom it may concern:

Be it known that I, HERBERT G. BEMIS, a citizen of the United States, and a resident of Riceville, in the county of Mitchell and State of Iowa, have invented a new and Improved Washing-Machine for Milk-Separator Disks, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a machine of the character named, adapted to be handled as a portable member; to provide a machine of the character named with a loading member adapted for handling as a carrier for the disks prior to loading; to provide a brush arranged for operation upon the edge portion of the disks; and to provide means whereby the loading member is held centrally in the machine.

One embodiment of the present invention is shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a washing machine constructed and arranged in accordance with the present invention; showing in conjunction therewith and in section, milk separator disks arranged for washing; Fig. 2 is an end elevation of the same; Fig. 3 is a side elevation showing the holding rack as partially installed in the machine, the anchoring plate therefor being in section; Fig. 4 is a detail view in perspective of the disk-holding rack; Fig. 5 is a detail view on an enlarged scale, showing in vertical section the driven shaft, rotary head, presser plate and rack head, all constructed and arranged in accordance with the present invention.

As seen in the accompanying drawings, the driving mechanism of the machine is mounted on a frame 10. The body of said frame is constructed from a continuous length of strap metal of suitable width and thickness, the ends of which are upturned and lapped to form extensions 11, wherein is formed a bearing for a driving shaft 12. The driving shaft 12 is further supported by a bearing in an extension 13 formed by upturning the end of the strap which forms the handle 14. The handle 14 is rigidly mounted upon the frame 10, and the shaft 12 is

permanently mounted in the bearing formed in the extensions 11 and 13 thereof. The frame 10 is provided with transverse laterally-extended foot-rests 15, as best seen in Fig. 2 of the drawings.

By means of the handle 14, the frame and mechanism mounted thereon may be transported from point to point, and when deposited in a tank or other suitable repository, the foot-rests 15 serve to maintain the equilibrium of the machine.

The shaft 12 is provided at one end with a driving gear wheel 16. Mounted upon the gear wheel 16 is a crank handle 17, whereby said wheel is manually rotated. The gear wheel 16 is meshed with a gear pinion 18. The pinion 18 is mounted rigidly on a shaft carrying a sprocket wheel 19. The sprocket wheel 19 is connected with a second sprocket wheel 20 by means of a chain belt 21. The wheel 20 is rigidly mounted at the end of a short shaft 22. The shaft 22 is extended through bearings formed in the frame 10, and is provided adjacent the end within said frame with a squared portion 23. The squared portion 23 has a sliding fit in a rotary head 24. The head 24 normally rests against a plate 25. The plate 25 is non-rotatively held by guide pins 26, the ends whereof are flared to form heads 27. The pins 26 are rigidly mounted in the upturn of the frame 10, and support spiral springs 28. The springs 28 normally move the plate 25 to the inner ends of the pins 26, to rest against the heads 27 there formed. The center of the plate 25 is provided with a perforation 29 sufficiently large to permit the squared portion 23 to rotate therein.

It will be seen from the above description in reference to the accompanying drawings, that when an operator, grasping the handle 17, turns the wheel 16, the head 24 is rotated, the speed of rotation of said head being dependent on the ratio of diameters of the wheel 16 and pinion 18.

The rack on which the separated disks are mounted comprises a base plate 30. The base plate 30 is provided with a central perforation 31. Adjacent the periphery, said plate is provided with perforations 32, adapted to receive studs 33, which are mounted fixedly in the head 24. To facili-

tate the mounting of said studs in said head, said studs are provided with screw-threaded sections to register with tapped perforations formed in said head. The plate 30 is further provided with bosses 34, in which are mounted rack rods 35. The rods 35 are spaced apart the length of the diameter of the disks A. Said racks are held in the fixed spaced relation by a brace 36, which is rigidly secured to said rods. The free ends of the rods 35 are each reduced to form pintles 37, which enter holes 38 formed in the disk 39. The disk 39 is rotatively mounted on a bolt shaft 40, and permanently arranged on one of the end uprights of the frame 10.

The length of the rods 35 is such that the springs 28 hold the pintles 37 in the holes 38. When, however, either in the operation of introducing the filled rack into the machine or when withdrawing the same therefrom, the plate 30 is pressed against the head 24, said head, together with the plate 25, moves toward the end of the frame and compresses the springs 28, as seen in Fig. 3 of the drawings. When introducing the rack, care is exercised to register the perforations 32 with the studs 33, and to register the pintles 37 with the holes 38. These registrations having been secured, the springs 28 operate to move the rack in holding relation to the disk 39 and in operative position to the driving mechanism above described.

Separator disks of the character described are liable to become gummed or have a deposit formed at their outer edges, where the heavier element of the material being separated is normally disposed. It is for this purpose that the brush having the tufts 41 and the back 42, is provided. The back 42 is mounted on the top part of the frame 10 by means of screws 43 and set nuts 44 therefor. The tufts 41 are of a length sufficient to extend between the edges of the adjacent disks A, to scrape the same as the disks supported by the rods 35 are rotated. The proportionate length of that part of the tufts 41 which extends between the disks A is varied by adjusting the screws 43 and the nuts 44 holding the same.

With a machine constructed and arranged as above described, the operation is as follows:—The separated disks A, when moved from their respective separating machines, are placed over the rods 35, if necessary the free ends of said rods being slightly contracted to accommodate the insertion thereover of said disks. During this operation, the rods are preferably disposed vertically, the base plate 30 resting upon the floor or other part of the fixed structure in which the separators are situated. When the rack has become filled, the operator, by grasping the brace 36, can convey the rack to the

washing machine herein described. The washing machine is disposed in a tank or other receptacle having water or other cleaning fluid, the depth of the fluid being sufficient to at least cover the lower edges of the disks A when placed horizontally therein. The attendant adjusts the rack to the machine by forcing the plate 30 against the head 24 after registering the studs 33 with the perforations 32 of said plate. Said head and the plate 25 are then forced backward, compressing the springs 28 until the free ends of the rods 35 may be passed in front of the disk 39 and the pintles 37 of said rods be inserted in the holes 38 of said disk. In this position, the springs 28 are permitted to move the rods and parts connected therewith, so that the pintles 37 become inserted in the holes 38. It will be noted that as the rods 35 holding the disks A are moved forward, the tufts 41 of the brush are forced between the inclined sides of adjacent disks, as seen best in Fig. 1 of the drawings, in which position the tufts operate to remove the gum or other substance adhering to said disks.

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

1. A machine of the character named, comprising a frame; a driving mechanism mounted on said frame, embodying a short driven shaft; a head slidably mounted on said shaft, to rotate therewith; a disk coaxial with said shaft, rotatively mounted at the opposite end of said frame; a disk rack adapted to extend between said head and said disk; and means for operatively connecting said rack with said head and disk.

2. A machine of the character named, comprising a frame; a driving mechanism mounted on said frame, embodying a short driven shaft; a head slidably mounted on said shaft, to rotate therewith; a disk coaxial with said shaft, rotatively mounted at the opposite end of said frame; a disk rack adapted to extend between said head and said disk; means for operatively connecting said rack with said head and disk; and means mounted on said frame to extend between disks when mounted on said rack, to wipe the edges of said disks.

3. A machine of the character named, comprising a rack frame having parallel rack rods and a connecting base plate rigidly secured thereto; a rotary disk to hold the free ends of said rack rods; and a driving mechanism for said rack frame, embodying a yielding face plate and a rotary head having a bearing on said plate.

4. A machine of the character named, comprising a rack frame having parallel rack rods and a connecting base plate rigidly secured thereto; a rotary disk to hold the free ends of said rack rods; a driving

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mechanism for said rack frame, embodying
a yielding face plate and a rotary head hav-
ing a bearing on said plate; means for non-
rotatively holding said face plate; and
5 springs to normally extend said face plate
toward said rack.

In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

HERBERT G. BEMIS.

Witnesses:

A. G. DUNTON,

R. H. CROSSMAN.