

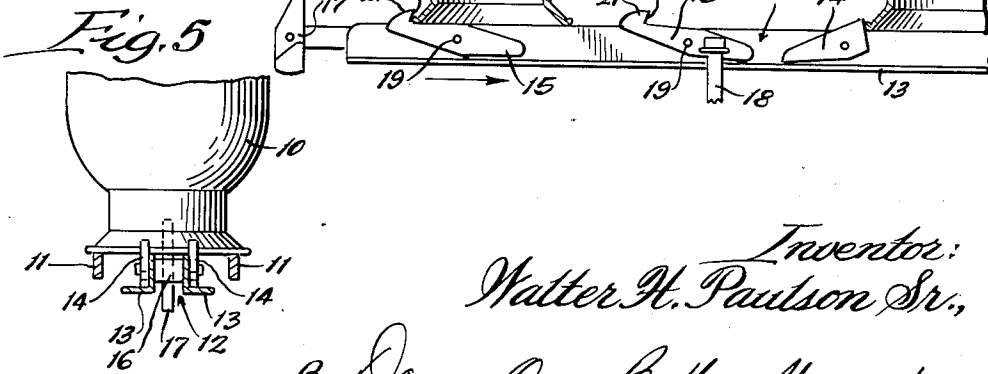
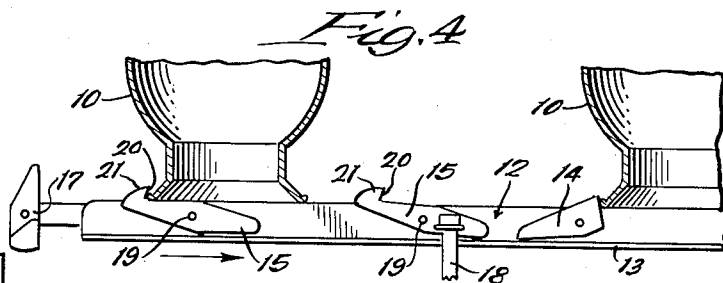
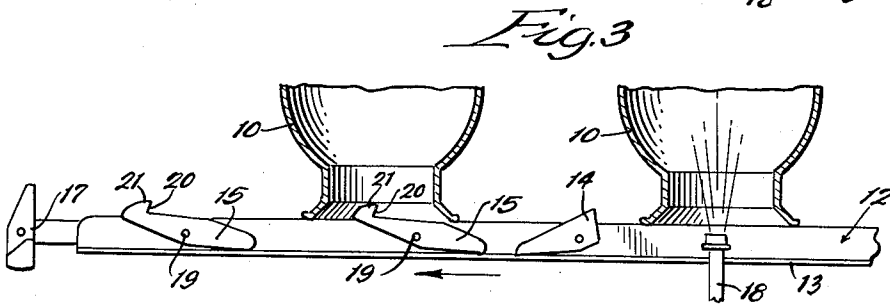
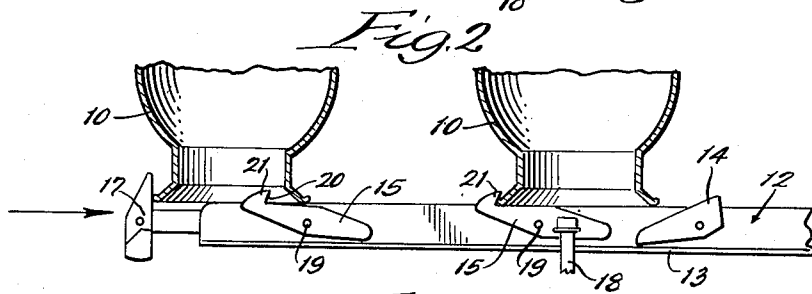
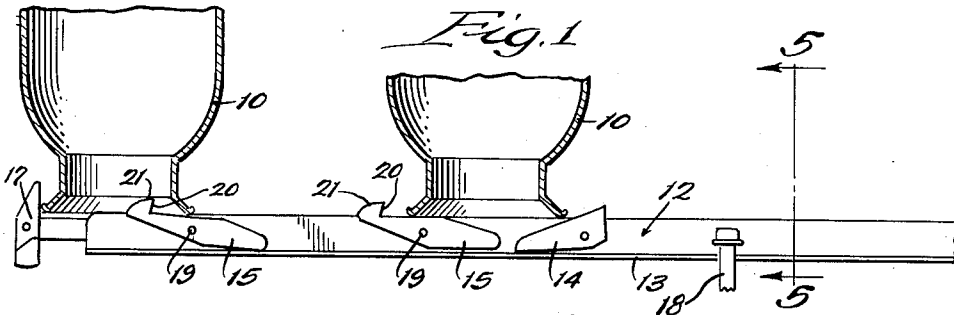
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2,523,968

CAN FEEDING APPARATUS

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2,523,968

CAN FEEDING APPARATUS

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This invention relates to can feeding mechanism. The invention is particularly useful in the feeding of milk cans or cans equipped with bell-shaped mouths in inverted position into washing or other treating apparatus.

In the feeding of milk cans and the like onto can washing machines, it is common to employ a reciprocating feed bar or pusher bar equipped with pivoted dogs which feed the cans forwardly step by step over a series of washing stations, drying stations, etc. The dogs are commonly pivoted near their forward ends so that the front portion of each dog extends upwardly to engage the can and push it forward. In the rapid feeding of cans by the operator, it is found that often the can is placed over the dog with the dog thus extending into the interior of the can neck. The dog by thus striking the inside of the can advances it but does not bring it over the proper stations, with the result that hot cleansing fluid is discharged into the machine without striking the interior of the can.

An object of the present invention is to provide an extremely inexpensive structure which obviates the above difficulty and permits the operator to set the can upon the track at any point regardless of the position of the dogs, the structure being effective for advancing the can only through engagement with the rear edge of the can. Yet another object is to equip the rear or feed portion of the push bar with a special form of pivoted dog or dogs which allow the dog, when placed under a can, to slide forward without movement of the can and also to slide rearwardly under the can, picking the can up for advancement only when the dog is at the rear of the can and is brought into engagement with the rear edge of the mouth thereof. Other specific objects and advantages will appear as the specification proceeds.

The invention is illustrated, in a specific embodiment, by the accompanying drawing, in which:

Figure 1 is a broken longitudinal sectional view of apparatus embodying my invention; Fig. 2, a view similar to Fig. 1 but showing the dogs in different relative positions; Fig. 3, a view similar to Fig. 2 but showing the pusher bar as it is being moved in a rearward direction; Fig. 4, a view similar to Fig. 3 but showing the pusher bar in advancing position; and Fig. 5, a transverse sectional view, the section being taken as indicated at line 5 of Fig. 1.

Any suitable track support for the inverted cans 10 may be employed. In the specific illus-

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tration given, I provide the spaced stationary bars 11 upon which the cans rest. Mounted between the cans is a pusher bar 12 which may be of any suitable construction and which is mounted for movement forward and backward in a longitudinal direction between the tracks 11. In the illustration given, the bar 12 consists of a pair of angle members 13 on which are mounted the pivoted dogs 14 and 15. The bar 12 may be equipped with a central connecting member 16 secured between the angle bar members 13 and equipped with a pivotally mounted feed dog 17. Since such structures, aside from the pivoted dogs 15, are well known in the art, a detailed description is herein believed unnecessary. The general construction of a machine equipped with a pusher bar and with operating dogs is set out in McEwen Patent 1,454,124.

The pipe 18 is set out to indicate a washing station. It will be understood that in the washing machine, a plurality of stations exist and that in the function of the machine it is important that the can be over the pipe 18 and the pipes at the other treating stations when the valves controlling the pipes are open. It will be sufficient for the purpose of the present invention to show the single treating station at 18.

I have discovered that by employing the dogs 15 which have their pivot pins 19 at a point to the rear of their weight centers, an effective feeding forward of the cans is accomplished even though the can is spaced over the feeding dog 15. Each dog is preferably equipped at its upper end with a hook portion 20 and with a top rounded portion 21. The rounded or cam portion 21 is effective, upon engaging the inner inclined face of the bell-like bottom of the can, for depressing the dog. Similarly, the cam portion 21 causes the dog to slide rearwardly under the can during the rearward stroke of the push bar 12.

Operation

In the operation of the apparatus, the can may be placed by the operator at any point upon the tracks 11 even though the dog 15 should fall within the can 10 as illustrated in Figs. 1, 2 and 3. The pivoted dog 15, as illustrated by the second can in Figs. 1 and 2, picks up the can forward of it carries it over the station 18. Such advancing of the foremost can is illustrated in Fig. 2 in which the feeder or push bar 12 has been advanced in the direction of the arrow. In the following rearward stroke, as shown in Fig. 3, the dogs 15 are carried rearwardly of each of the cans 10 and at least one of the dogs 15 is in position to

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pick up the rearmost can 10 in the next advancing movement of the pusher bar 12. The foremost can 10 which has been accurately positioned is subjected to contact with treating fluid and the usual feeding dog 14 has been brought back to a position where it will carry the can 10 forwardly through the machine. Since the cans are brought into proper spaced relations by the means already described, the ordinary dogs 14 may be employed through the remainder of the washing machine for advancing the cans to their respective stations. The spacer dogs 15 have served their purpose in bringing the cans to the first feeding station so that they rest in proper position over the pipe 18.

While in the foregoing specification, I have set forth a specific structure in considerable detail for the purpose of illustrating one embodiment of the invention, it will be understood that such details of structure may be varied widely by those skilled in the art without departing from the spirit of my invention.

I claim:

1. In apparatus for feeding bell-mouthed cans, spaced tracks adapted to receive up-ended cans thereon, a pusher bar mounted for reciprocating movement between said tracks, and can-advancing dogs pivotally mounted on said bar, at least one of said dogs adjacent the feed end of said bar being pivoted to said bar at a point to the rear of its weight-center and having its rearwardly extending end equipped with a vertically extending face adapted to engage the rear edge of the can mouth to advance it as the bar is moved forwardly.

2. In apparatus for feeding bell-mouthed cans, spaced tracks adapted to receive up-ended cans thereon, a feed bar mounted for reciprocating movement between said tracks, and can-advancing dogs pivotally mounted on said bar, at least one of said dogs adjacent the feed end of said bar having its pivot pin extending through the dog at a point slightly to the rear of its weight-center, the rear upper end of the dog having a vertically extending can-engaging surface and having a cam extending rearwardly and downwardly therefrom.

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3. In apparatus for feeding bell-mouthed cans, spaced tracks adapted to receive the up-ended cans thereon, a feed bar mounted for reciprocating movement between said tracks, and a plurality of can-advancing dogs pivotally mounted on said bar, at least some of said dogs being pivoted at a point forward of their weight-center to cause the forward end of the dogs to extend upwardly, and at least one of said dogs near the feed end of the bar being provided with a pivot pin extending therethrough at a point to the rear of the weight-center of the dog whereby the rear end of the dog is supported in raised position, said rear end of the dog having a latch thereon for engagement with the rear edge of a can mouth.

4. In apparatus for uniformly spacing bell-mouthed cans, tracks adapted to receive said cans in inverted position, a feeder bar mounted for reciprocating movement longitudinally of said tracks, and a spacer can-advancing dog carried by the feed end portion of said bar, said dog being pivotally connected to said bar at a point rearwardly of its weight-center and having its rear upper end portion provided with a vertically extending can-engaging surface.

5. In apparatus for uniformly spacing bell-mouthed cans, tracks adapted to receive said cans in inverted position, a feeder bar mounted for reciprocating movement longitudinally of said tracks, and a spacer can-advancing dog carried by the feed end portion of said bar, said dog being pivotally connected to said bar at a point rearwardly of its weight-center and having its rear upper end portion provided with a vertically extending can-engaging surface, the top portion of said rear end being rounded.

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The following references are of record in the file of this patent:

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