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A. V. NEWMAN

2,228,531

CANDY DEPOSITOR

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Fig. 1

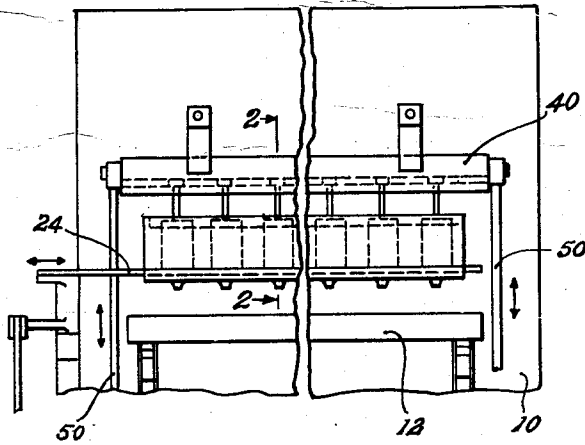


Fig. 4

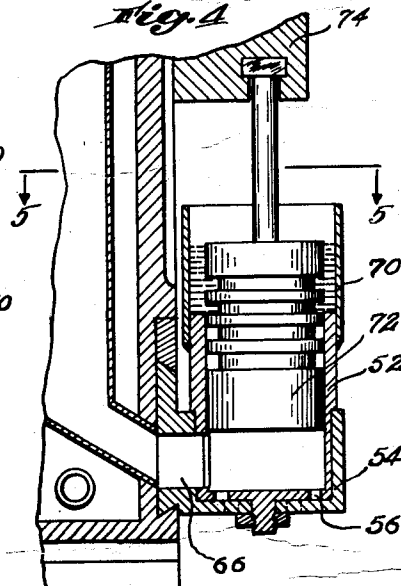


Fig. 2

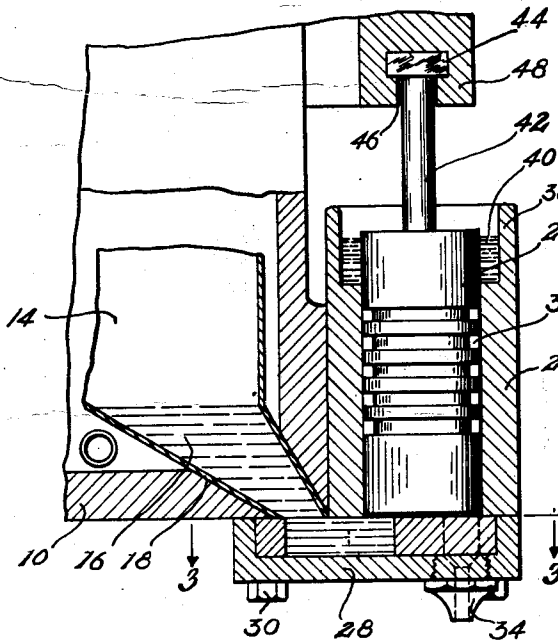


Fig. 5

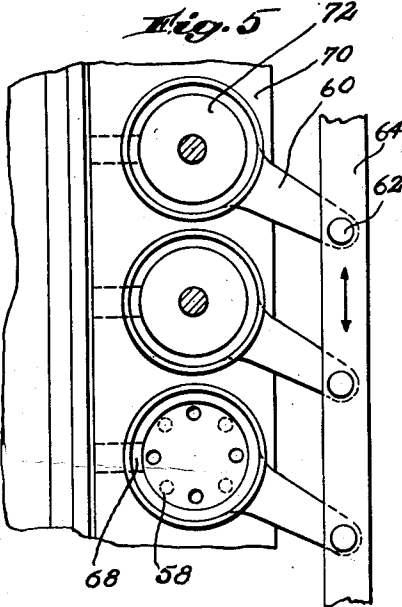
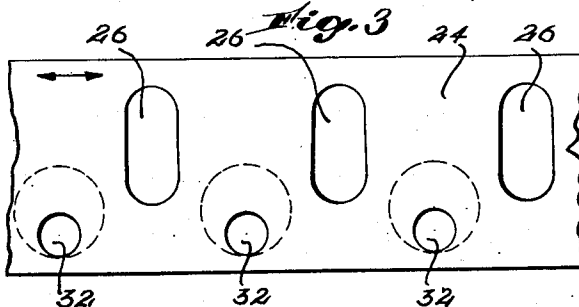


Fig. 3



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UNITED STATES PATENT OFFICE

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CANDY DEPOSITOR

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Application March 17, 1939, Serial No. 262,545

1 Claim. (Cl. 107—28)

This invention relates to improvements in a candy depositor of the type that is used for feeding confectionery mixtures such as fondants, caramels, cordials, syrups and the like in the molds.

5 In such machines the molds move step by step through the machine, and a long row of molds must be simultaneously filled, necessitating the use of a large number of individual piston pumps; for example, as many as eighty pumps may be used in one machine. The molds must be filled as evenly and uniformly as possible without variation in amount, in order that the desired number of candy pieces may be placed in a box, and the boxes will be of uniform weight. Candy depositors have been in use for many years in which felt washers are used to pack the pistons of the pumps, and such washers are compressed and expanded by adjusting nuts on each piston. Considerable time and care is required to initially adjust the washers so that the pumps will be uniform in action, and to maintain this adjustment as wear occurs. Felt washers cannot be permitted to dry out as sticking of the pistons would occur so that the entire set of pistons and washers must be removed from the machine and left soaking when a machine is not in use. The felt washers are also an expensive item since they must be replaced periodically.

It is an object of my invention to provide a candy depositor that does not require any felt washers or other form of packing which must be replaced.

It is further an object of my invention to provide a candy depositor in which solid metal pistons are used which are so designed with relation to the cylinders that the pistons extend beyond the cylinder at all times, and thereby cause even wear through the entire length of the cylinder.

A still further object of my invention is to form the solid metal pistons with a plurality of annular sealing grooves and to provide a water seal at the open ends of the cylinders.

Further objects and advantages of my improvements will be more readily apparent from the following description of preferred embodiments of my invention as disclosed in the attached drawing, in which:

Fig. 1 is a fragmentary front elevation of a candy depositor;

Fig. 2 is a sectional view taken on the plane indicated 2—2 in Fig. 1;

Fig. 3 is a plan view of the slide valve taken on the plane indicated 3—3 in Fig. 2;

Fig. 4 is a sectional view similar to Fig. 2 but illustrating a modified construction; and

Fig. 5 is a sectional view taken on the plane indicated 5—5 in Fig. 4, one of the pistons being removed to show the valve openings at the bottom of the cylinder.

The candy depositor of Fig. 1 includes a frame 5 and a conveyor 12 for moving the molds step by step through the machine. The supply receptacle 14 delivers the fluid confectionery mixture 16 through the spouts 18 to individual pumps, each of which comprise a cylinder 20 and piston 22. The inlet to the pumping chamber is controlled by a slide valve 24 provided with openings 26 which, when brought in line with the spouts 18, allow the mixture to flow into the pumping chambers. The slide valve is supported by the channel-shaped plate 28 fastened by bolts 30 to the frame. The slide valve has discharge openings 32 which may be brought in line with the discharge nozzles 34. Each of the pistons 22 is machined from solid metal, preferably brass, and a plurality of annular sealing grooves 36 are cut intermediate the ends of the piston. The cylinders 20 are enlarged at their open ends to provide a trough 38 communicating with all the cylinders and adapted to receive the water seal 40. The pistons are formed with rods 42 having square shaped heads 44 fitting into the T-shaped groove 46 of the vertically reciprocable operating member 48. As indicated in Fig. 1, the slide valve 24 is reciprocated horizontally by suitable operating mechanism while the operating member for the pistons 48 is reciprocated vertically by suitable operating members 50.

A modified construction is illustrated in Figs. 4 and 5 in which the cylinders 52 are mounted to oscillate in the base 54, and include discharge openings 56 which may be brought into line with discharge openings 58 in the base 54. Each of the cylinders has an arm 60 pivoted at 62 to the reciprocal operating member 64. The inlet passage 66 is controlled by the provision of an inlet valve passage 68 formed in the bottom of each of the cylinders. In this form each of the cylinders includes a cup member 70 at the open end adapted to receive water to act as a seal. The pistons 72 are reciprocable in the same manner as Figs. 1 and 2 by the operating member 74.

It should be noted that the length of the pistons are so designed with respect to the length of the cylinders and the stroke of movement of the pistons that the cylinder wall receives uniform wear out to its open end. In installing pistons, the individual cylinders may be bored uniformly and the pistons machined to exact size so as to closely fit the cylinders. Individual adjustment

of the pistons with respect to the cylinders is not required as is the case when felt washers are used for packing the pistons. When wear has occurred such that the pistons must be replaced, an entire new set may be installed and made sufficiently larger in size to take care of the increased diameter of the size of the cylinders. The sticky candy mixture which is handled by such machines if permitted to dry out will cause sticking of the pistons. By the use of the water seal at the open end of the pumps, the pumps are sealed against the entrance of air, and if leakage occurs the candy mixture will dissolve in the water seal. The water also aids in lubricating and cooling the pistons. The annular grooves tend to prevent leakage of the candy mixture past the pistons, and the upper grooves become filled with the water from the sealing chamber to lubricate and seal the pumps. Candy depositors designed as disclosed herein will deliver uniform quantities of the candy mixture to the molds, and do not require the careful attention of the operator as is the case with former machines.

I claim:

In a candy depositor, a plurality of concurrently operated individual pumps for filling candy molds with a flowable confectionery mixture, each of said pumps having inlet and discharge passages at the bottom thereof, valve means for controlling said passages, a solid metal piston closely fitting the cylinder of each of said pistons having a plurality of spaced annular open grooves intermediate the ends thereof, a vertically disposed cylinder for each of said pumps open at the upper end to receive the piston, the wall of each cylinder being enlarged at the open end to form a chamber adapted to serve as a water seal for the pump, the grooves in the pistons and the strokes thereof being so arranged that the upper grooves are moved into the chamber portion of the cylinder on each upward stroke of the pistons to trap water in said grooves to seal the pumps and prevent sticking of the pistons.

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