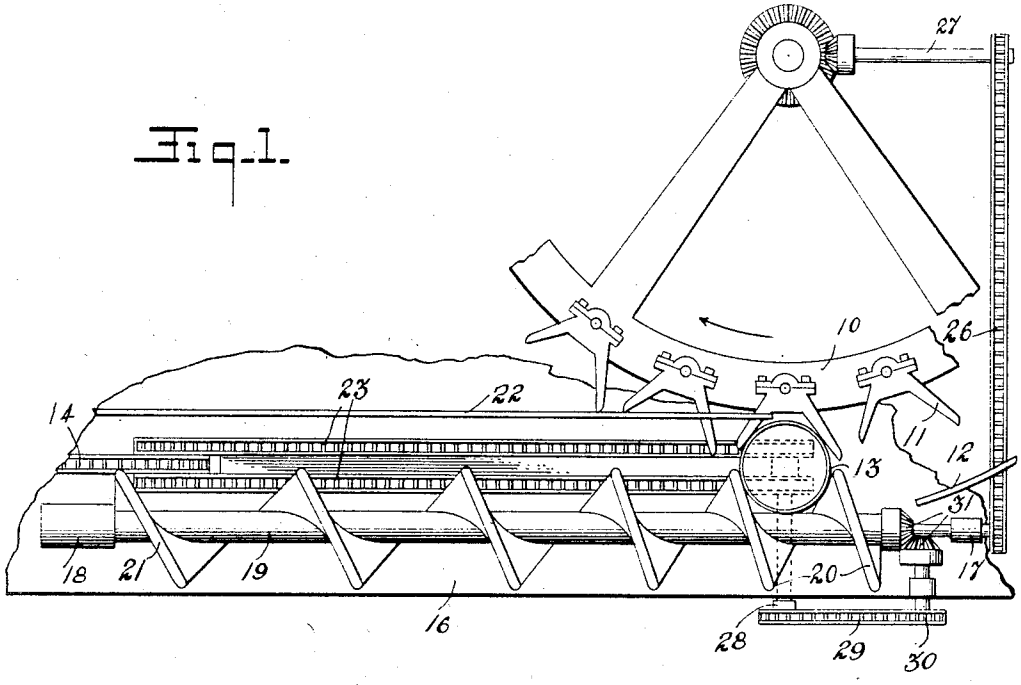
Oct. 20, 1931. C. H. AYARS 1,828,168

CAN DELIVERING MECHANISM

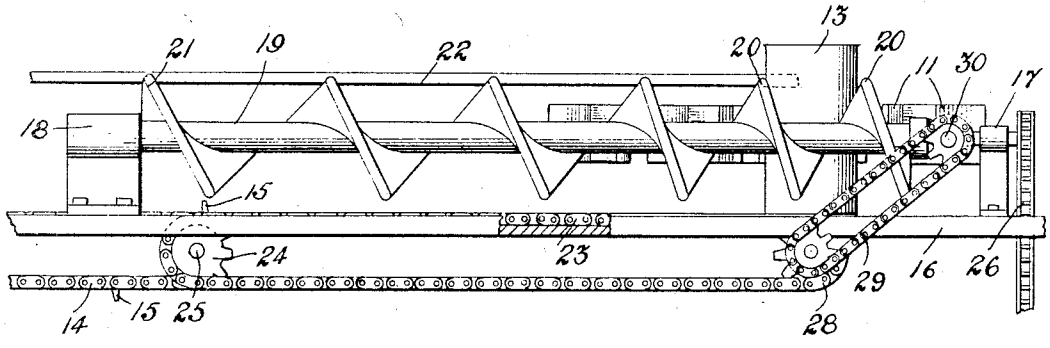
Filed Oct. 14, 1930

Fig. 1.



2

Fig. 2.



WITNESS:

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Patented Oct. 20, 1931 1,828,168

UNITED STATES PATENT OFFICE

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CAN DELIVERING MECHANISM

Application filed October 14, 1930. Serial No. 488,576.

This invention relates to can delivering mechanism, and has for an object to provide an improved structure, co-ordinating with a canning machine, for transferring cans from the filling unit to the seaming unit, in proper spaced relation for the activities of the seaming unit.

In a can filling unit, it is desirable that the can shall be spaced at a minimum distance, for various reasons among others, the rapidity of action, and the elimination of liability of spilling the material. The seaming unit, however, requires that cans be spaced at a greater interval to permit the instrumentalities of the seaming unit to properly operate. For this purpose, it is necessary to change the initial spacing of the cans, as delivered from the filling unit, to increase the intervals. It has been found, that any sudden speeding up of the initial movement of the cans, results in spilling the contents, either by slopping, or toppling the can.

The present invention, therefore, is directed to a mechanism which shall receive the cans from the filling unit in their initial relation, and in transferring them from the filling unit, to the seaming unit, shall gradually speed up the movement of the cans to thereby augment the spacing, so that as delivered to the seaming unit, the spacing shall be adequate for the activities of the seaming unit.

The object is, therefore, to provide such a transferring mechanism, in the form of a worm, the fins of which gradually increase in pitch, so that as the cans are moved by the rotation of the worm, the increase in pitch gradually speeds up the can from its initial speed of reception, from the filling unit, to the necessary speed for spacing the delivery to the seaming unit.

The invention is directed to other objects, and possesses other features of novelty, and advantage, some of which, together with the foregoing, will be hereinafter more fully set forth.

In the drawings:

Figure 1 is a top plan view of the can delivering mechanism, with fragments of a conventional canning machine, and seaming unit, associated therewith, and

Figure 2 is a view of the delivering mechanism in side elevation, as indicated by arrow 2, at Figure 1.

Like characters of reference indicate corresponding parts throughout the several views.

The improved can delivering mechanism, which forms the subject matter of this application, is intended to be associated with a great variety of types of can filling units, and can seaming units, and parts of can filling and can seaming units shown are only for the purpose of illustrating the construction and functioning of the transferring mechanism itself.

At 10, a structure is shown, intended to represent a fragment of a rotating table, or turret, having fingers 11, properly proportioned to move cans about a rotary orbit, a guard rail 12, being shown in section to insure such orbit.

The can 13, as shown in the drawings, is at the point where it leaves the filling unit, and positioned upon the delivering mechanism, which transfers the can from this filling unit to the seaming unit, which is represented herein only by a sprocket chain 14, which is provided with lugs 15 for further moving the can to and into the seaming unit.

The can delivering mechanism per se, comprises a bed plate, or other supporting structure 10, which is secured to the general organization, including the can filling unit, and the seaming unit. This bed plate 16, carries at any appropriate point, bearings 17 and 18, in which is journaled, a shaft 19. The shaft 19 forms the core of a worm. The worm comprises helical fins, which at the initial position of receiving the can, shown at 13, are properly spaced as indicated at 20, to accommodate the can. It will be noted, that this fin, though continuous throughout the length of the core, 19, constantly increases in pitch to the opposite end 21, at which point, the pitch is very materially greater than the pitch of the section 20.

It will be noted, that the cans represented by the single can 13, are retained within the interval between the fins by a guide rail 22. It has been found, however, that the cans, if

moved by this worm alone, along a table, or the like, do not move with sufficient smoothness to prevent the spilling of the contents of a completely filled can. To overcome this difficulty, sprocket chains 23 are carried in grooves, or other depressions, in the bed plate 16, extending slightly above the level of such bed plate, as shown more particularly at Figure 2. These sprocket chains 23 pass over sprockets 24, upon the shaft 25, upon which is also a sprocket of equal dimension, carrying the chain 14. It follows therefore, that the speed of travel of the chain 23, corresponds to the speed of travel of the chain 14. The very slight rise of the chain 23, above the bed plate, engaging under the bottoms of the cans, provides a movement of these cans, it being obvious that the progression of the chains will be uniform, whereas the progression of the cans will be continually augmented. However, it has been demonstrated, that this slight difference of actual travel, does not have the effect of slopping the contents of the cans, so that the cans, represented by the single can 13, when starting their journey, at that position, will be urged forward by such chains at a speed initially greater than the progression of the fins, but at the delivery end (21), the progression of the fins will be greater than that of the chains.

The several units of the device are so timed, that each of the cans is delivered by the worm, and the chains 23, upon the chain 14, in such relation that one of the lugs 15 is at the then rear position of the can, so that there is no stoppage, and consequent slopping action of the can as it is transferred from the chains 23, to the chain 14. It will be understood, of course, that the chain 14 delivers the can for further action by the seaming unit.

The worm may be driven in any approved manner, and from any convenient rotating part of the mechanism. In the drawings, it has been shown as being driven by the sprocket chain 26. from the shaft 27, which may be considered the main drive shaft of the organization, although this particular feature is unimportant. Also the sprocket chains 23, are shown as being driven from a shaft 28, by a sprocket chain 29, from the shaft 30, which is driven from the worm shaft 19, by the beveled gears 31. It is to be understood, that this particular type of power application, as shown in the drawings, is merely illustrative, and that the invention is in no way limited to any particular type of drive.

Of course, the can delivering mechanism, herein illustrated, may be modified in various ways without departing from the invention herein set forth and hereinafter claimed.

The invention is hereby claimed as follows:

1. In a can delivering mechanism, the combination with spaced units of a traveling member between said units, means carried by one of said units for placing a can upon said traveling member, and restraining means for said can tending to move said can at a speed different from said traveling member and uniformly augmented.

2. In a can delivering mechanism, spaced units, a member traveling between said units, means carried by one unit for placing cans upon said traveling member, and a worm having fins positioned to receive the cans so placed, said fins increasing in pitch continuously from said receiving position to the opposite end.

3. In a can delivering mechanism, spaced units, an endless carrier interposed between the units, means inherent in one unit for positioning cans upon the endless carrier, means inherent in the other unit for receiving the cans from said endless carrier, and a worm co-acting with said endless carrier having fins positioned to accommodate the cans and actuating said cans at a uniformly augmented speed differing at some interval from the speed of the endless carrier.

4. A can delivering mechanism comprising a bed plate, an endless carrier moving along said bed plate at a uniform speed, a unit arranged to deposit cans upon one end of the carrier, a unit positioned to receive cans from the opposite end of the carrier, and a worm journaled for cooperation with the carrier having fins increasing uniformly in pitch from the receiving to the discharge end, the travel provided by said fins at the middle of the worm being substantially equivalent to the travel of the carrier.

5. A can delivering mechanism comprising a bed plate, an endless carrier moving along said bed plate at a uniform speed, a unit arranged to deposit cans upon one end of the carrier, a unit positioned to receive cans from the opposite end of the carrier, and a worm journaled for cooperation with the carrier having fins increasing uniformly in pitch from the receiving to the discharge end, the travel provided by said fins at the middle of the worm being substantially equivalent to the travel of the carrier, the travel at the receiving end being less and at the delivery end greater than at the middle.

In testimony whereof I have signed my name to this specification.

CHARLES H. AYARS.