Feb. 26, 1952 J. MANTERIA 2,587,496

PACKAGE DELIVERY MECHANISM

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Fig. 1.

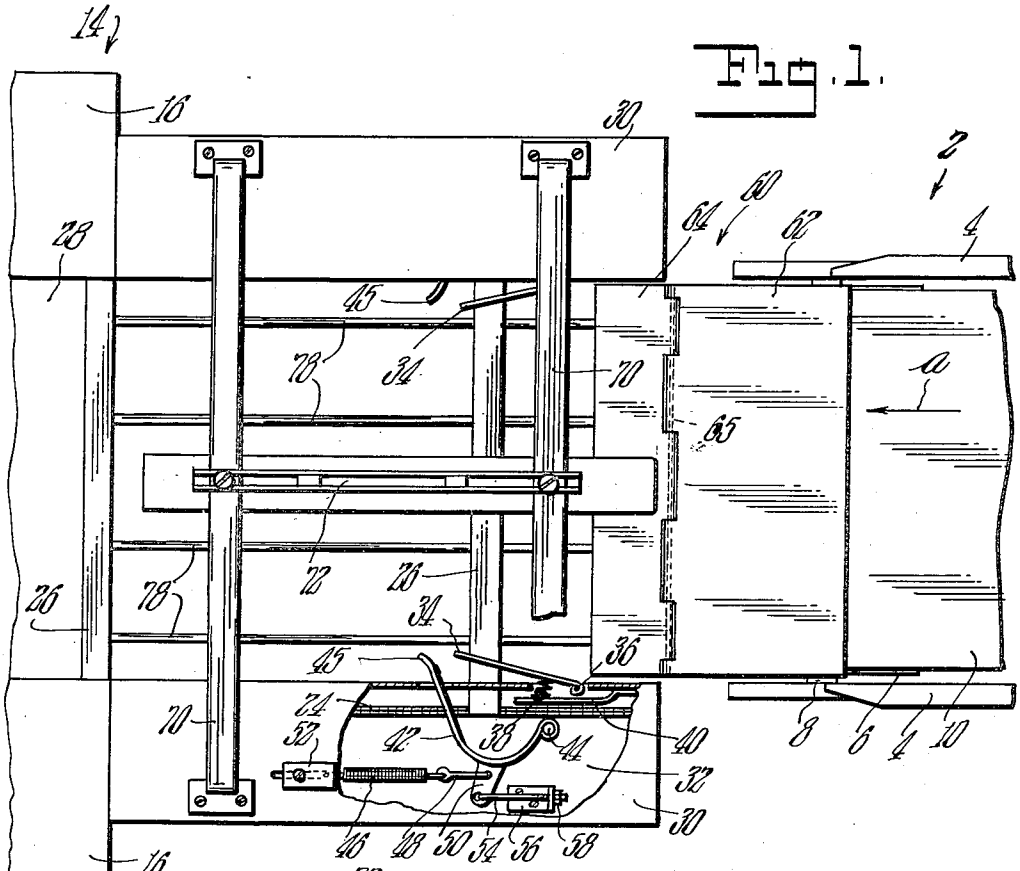
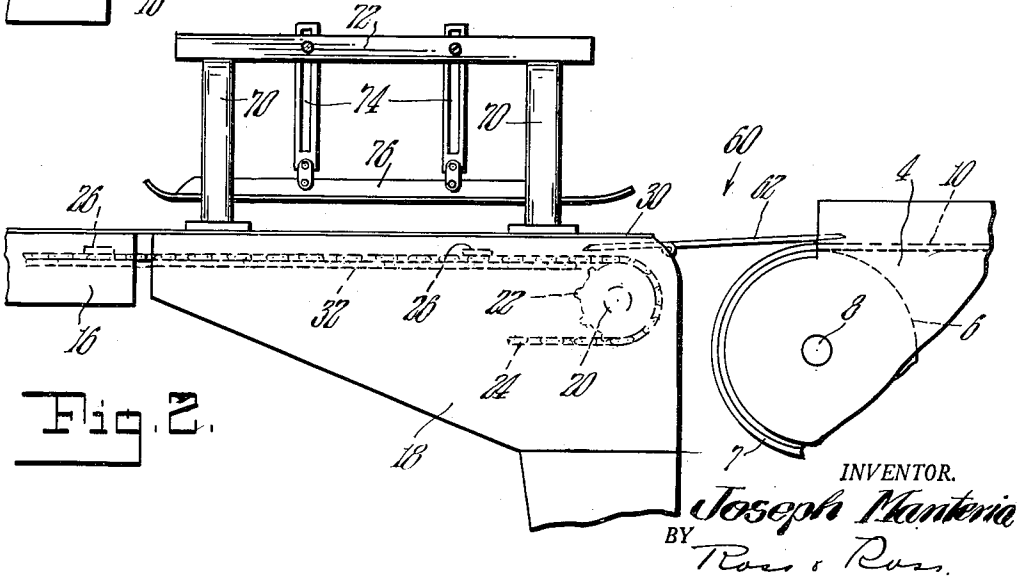


Fig. 2.



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PACKAGE DELIVERY MECHANISM

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2 Claims. (Cl. 198—23)

1

This invention relates to improvements in package handling apparatus and is directed more particularly to improvements in mechanism for delivering successive packages from a primary conveyor to the feed conveyor of a package wrapping machine.

The principal object of the invention is the provision of mechanism for receiving successive packages to be wrapped from a primary conveyor and delivering them one by one to the feed conveyor of a machine for wrapping the same.

The mechanism of the invention is adapted for broad application but is particularly adapted for use in connection with the packaging of celery and the like.

Celery has been packed in tray-like cartons or boxes having open upper sides and then enclosed in a wrapper of cellophane or the like.

The mechanism of this invention receives these trays from a primary conveyor and releases them one by one to the feed conveyor of a wrapping machine for wrapping thereby eliminating the manual labor in transferring the trays from the primary to the feed conveyor.

With the foregoing and various other novel features and advantages and other objects of my invention as will become more apparent as the description proceeds, the invention consists in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more particularly pointed out in the claims hereunto annexed and more fully described and referred to in connection with the accompanying drawings wherein:

Fig. 1 is a plan view of package delivery mechanism embodying the novel features of the invention; and

Fig. 2 is a side elevational view of the mechanism shown in Fig. 1.

Referring now to the drawings more in detail, the invention will be fully described.

A primary conveyor is represented by 2 which is no part of the present invention. Diagrammatically the conveyor includes elongated side frames 4 with a roll 6 having a shaft 8 journalled therein. An endless flexible conveyor belt 7 is supported by the roll 6 and is driven at a remote point by suitable means so that its upper run 10 travels in the direction of arrow *a*.

A plurality of packages are carried forwardly by the upper run 10 of the belt, to the mechanism of the invention.

A feed conveyor for a wrapping machine is

2

represented by 14 and may include elongated side frames 16 and 18 having a shaft 20 rotatable therein. Sprockets 22 fixed in spaced relation to the shaft 20 receive endless members such as chains 24 which are driven at a remote point as by the wrapping machine. Cross pusher bars 26 have opposite ends secured to the chains 24 for pushing packages to be wrapped along a table 28 to the wrapping machine.

Upper and lower secured together plates or walls 30 and 32 are provided at opposite longitudinal sides of the conveyors.

Similar equalizer members 34 are pivoted at 36 and are urged outwardly by springs 38, which springs are supported by plates such as 40, see Fig. 1.

Similar stop members 42 are pivoted at 44 and have outer free ends 45 normally disposed in the path of movement of the advancing packages to be wrapped.

Springs such as 46 are connected at one end by members such as 48 to lugs 50 of the stops and have opposite ends connected to plates 52 secured to upper walls 30. The arrangement is such that the stops are urged inwardly or towards one another by the springs 46. That is, inner free ends 45 of the stops are yieldingly held in the path of movement of the packages to be advanced and wrapped.

Rods such as 54 have inner ends connected to the lugs 50 and outer threaded ends extending through brackets 56 secured to the lower walls 32 and on which ends are nuts 58. These are arranged to limit swinging movements of the stops.

A ramp 60 is provided which has a receiving portion 62 that receives packages from the run 10 of the conveyor belt and a delivery portion 64 hinged at 65 thereto for delivering packages to the pushers 26 of the feed conveyor.

In operation packages are carried forwardly by the run 10 of belt 8. The foremost package is releasably held against advancing by the free ends 45 of the stops 42.

Packages rearwardly of the foremost package since they are urged forwardly by the belt tend to urge the foremost package forwardly but not sufficiently to swing the stops outwardly.

As a pusher bar 26 comes around, however, it engages the lower rear edge of the foremost package and carries it forwardly, the stops yielding to permit said package to escape.

The equalizers 34 are so arranged and urged inwardly as to maintain the packages centrally of the apparatus.

Brackets **70** have lower ends secured to walls **30** and extend transversely over and above the mechanism. A longitudinal bar **72** is secured to the brackets and links having upper ends secured to bar **72** have lower ends connected to a hold-down **76**. Said hold-down is adapted and arranged for packages to be wrapped to pass thereunder, the hold-down insuring that a foremost package is engaged by a pusher bar **26**.

Ridges **78** may be provided for supporting packages which may slide therealong without appreciable friction.

As will be observed, packages to be wrapped are advanced by the conveyor **7** and centralized by the members **34**. The foremost package is held against advancement by the stops **42** and is released thereby as the said package is fed by a pusher to the wrapping machine.

The danger of more than one package being located ahead of a pusher bar is eliminated and manual labor in transferring a package from the belt **7** to a position forwardly of a pusher bar is obviated.

The invention may be embodied in other specific forms without departing from the essential characteristics thereof. Hence, the present embodiments are therefor to be considered in all respects merely as being illustrative and not as being restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all modifications and variations as fall within the meaning and purview and range of equivalency of the appended claims are therefore intended to be embraced therein.

What it is desired to claim and secure by Letters Patent of the United States is:

1. The combination with the upper run of an article supporting and feeding belt of a conveyor and the transversely spaced feed chains for a wrapping machine having spaced pusher bars extending therebetween of mechanism for transferring successive articles from said conveyor to said feed chains comprising, a ramp having a receiving portion over said upper run of the conveyor and a delivery portion over said feed chains hinged thereto for the passage of successive articles forwardly thereover, a lower wall having transversely spaced upper longitudinal article ridges extending forwardly from said delivery portion for slidably supporting successive articles advanced by said feed chains, transversely spaced side plates extending forwardly from said hinged portion of the ramp having equalizers pivoted at inner ends thereto for independent swinging movements and provided with inner free ends in the path of movement of successive articles for engaging opposite ends thereof, springs urging the free ends of said equalizers towards one another, stop members having inner ends pivoted to said lower wall for independent swinging movements thereof and having inner free ends in the path of movement of successive articles and spring means urging the free ends of said stop members inwardly towards one another, means limiting inward movements of said free ends, and hold-down means for resisting upward movements of articles on said ridges, the free ends of said stop members being disposed forwardly of the delivery portion of said ramp and the free ends of said equalizers being disposed between the free ends of the stop members and delivery portion of the ramp and adjacent the former whereby the free ends of the stop members and equalizers may simultaneously engage opposite ends of articles.

2. The combination with the upper run of an article supporting and feeding belt of a conveyor and the transversely spaced feed chains for a wrapping machine having spaced pusher bars extending therebetween of mechanism for transferring successive articles from said conveyor to said feed chains comprising, a ramp having a receiving portion over said upper run of the conveyor and a delivery portion over said feed chains hinged thereto for the passage of successive articles forwardly thereover, a lower wall having transversely spaced upper longitudinal article ridges extending forwardly from said delivery portion for slidably supporting successive articles advanced by said feed chains, transversely spaced side plates extending forwardly from said hinged portion of the ramp having equalizers pivoted at inner ends thereto for independent swinging movements and provided with inner free ends in the path of movement of successive articles for engaging opposite ends thereof, springs urging the free ends of said equalizers towards one another, stop members having inner ends pivoted to said lower wall for independent swinging movements thereof and having inner free ends in the path of movement of successive articles and spring means urging the free ends of said stop members inwardly towards one another, means limiting inward movements of said free ends, and hold-down means for resisting upward movements of articles on said ridges, said hold-down means including longitudinally spaced transversely extending supports above said lower wall connected by a longitudinal member and links having upper ends pivoted thereto and a longitudinal hold-down member pivoted to lower ends thereof for engaging upper sides of articles moving forwardly on said ridges.

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