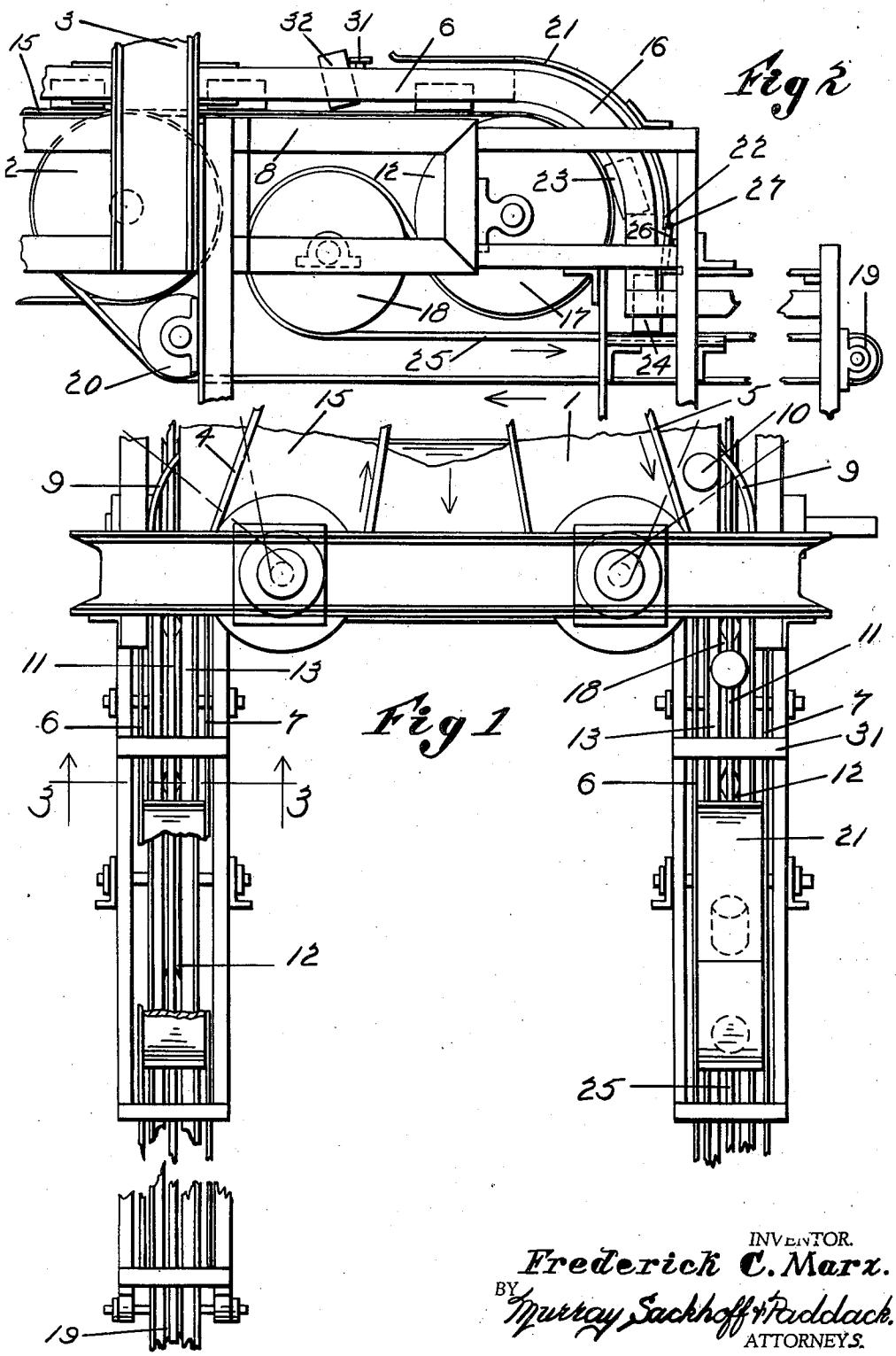
May 20, 1941. F. C. MARX 2,242,532

CAN RIGHTING MECHANISM

Original Filed Aug. 11, 1938 2 Sheets-Sheet 1



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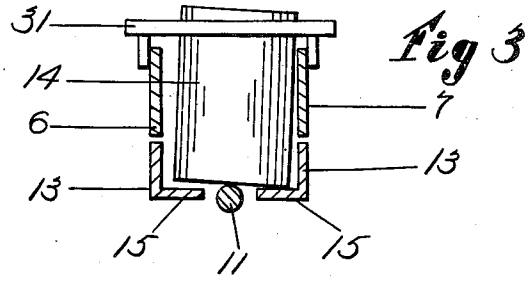


Fig 3

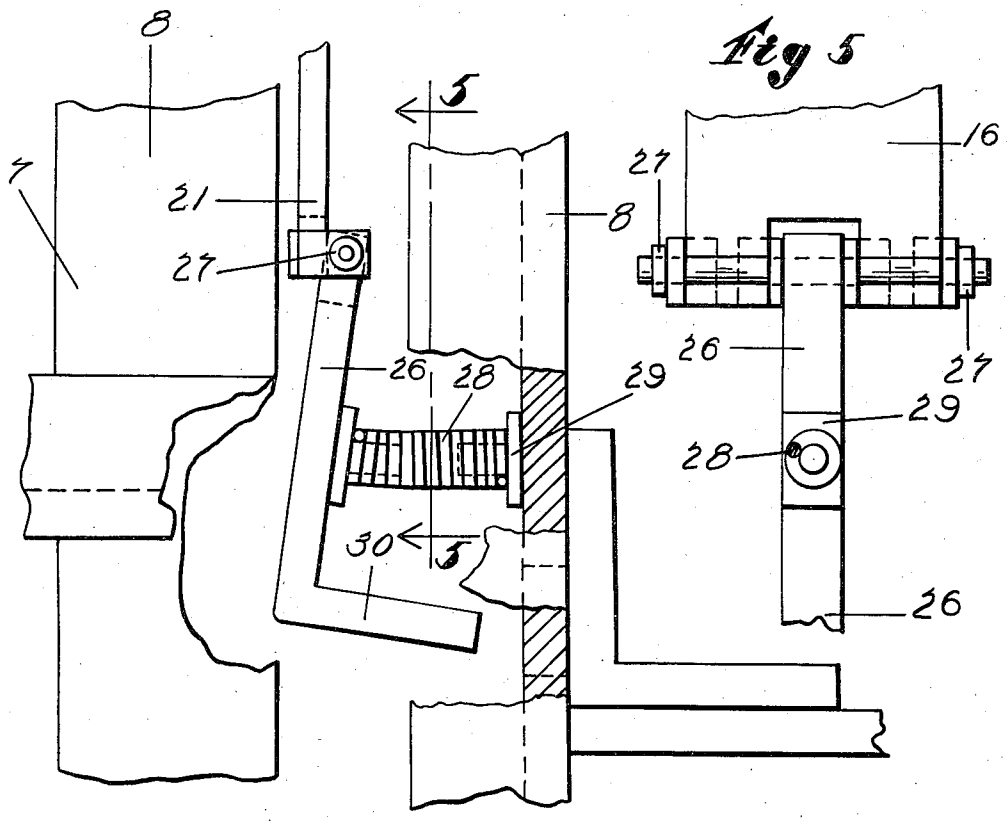


Fig 4

Fig 5

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CAN RIGHTING MECHANISM

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Original application August 11, 1938, Serial No. 224,315. Divided and this application September 11, 1939, Serial No. 294,311

3 Claims. (Cl. 198—33)

The present application is a division of my copending application Serial No. 224,315, filed August 11, 1938. That application relates to means for receiving a large number of unarranged objects, such as cans, and for arranging the objects into single line formation in readiness for subsequent operations upon them.

The present phase of the general invention relating to can handling apparatus has to do with disposing the single lines of cans, as arranged by the means just described, in a vertical position since the cans, though placed in single line arrangement by the preceding equipment, might yet be disposed on their sides as well as on their ends.

The present invention, therefore, has to do with receiving the moving single lines of cans and, while continuing their movement, disposing them upright for still further operations of stacking, labelling or the like.

Briefly, the present apparatus comprises a guideway, means for carrying the single line of cans through the guideway, a means for disposing all of the cans on their sides, and a vertical chute section for receiving the cans and depositing all of them on a further transfer medium, additional means being provided in connection with the chute for precluding the overturning of the cans by reason of their being deposited on a rather swiftly moving carrier.

The invention therefore has to do with the provision of means for achieving the objectives named with smoothness and efficiency and with a minimum of equipment.

These and other objects are attained by the means described herein and illustrated in the accompanying drawings, in which:

Fig. 1 is a plan view, with parts broken away, showing the guideway and chute portions of the present invention associated with the adjacent cooperating parts of the preceding carrier mechanism, the latter being shown fragmentarily.

Fig. 2 is a side elevational view of the means seen in Fig. 1.

Fig. 3 is a cross-sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is an enlarged detailed view, with parts broken away, showing the means for precluding overturning of the cans after they have been deposited vertically upon the final carrier.

Fig. 5 is a view taken on the line 5—5 of Fig. 4.

In greater detail and with reference to the drawings:

Two of the guideways are shown in the accompanying drawings but it is obvious that one only could be employed or that more than two could be used, if so desired. As here shown, the guideways are associated with a large carrier belt 1 (Fig. 1) moving in the direction of the downwardly pointing arrow seen at the center of the top of Fig. 1, said carrier belt being supported upon and moved by suitable roller means 2 (Fig. 2) which in turn are mounted on a suitable framework indicated at 3.

The guideways particularly concerned in the present disclosure are disposed one at each side of the carrier belt 1 and are adapted each to receive a single line of cans from the carrier belt 1. The carrier belt, for this purpose, has associated with it other structure not specifically concerned herein but for the purpose of clarity it may be pointed out that a pair of horizontal belts, indicated at 4 and 5 (Fig. 1), cooperate with the carrier belt 1 in moving each line of cans into the guideways now to be described.

Each guideway may comprise a pair of side rails 6 and 7 (Figs. 1, 2 and 3) supported by a suitable frame 8. The inner ends of the rails 7, as seen at the upper right and lefthand corners of Fig. 1, may be curved inwardly, as at 9, to form entranceways for the oncoming lines of cans, one of which is indicated at 10 in Fig. 1. The cans pass from the belt 1 on to a cable 11 moving in the same direction as the large belt 1 and supported upon suitable guidewheels or pulleys 12. The cable 11, as seen especially in Fig. 2, may be conveniently operated from the roller 2 upon which the belt 1 runs. For this purpose, the ends of the roller 2 may be grooved for receiving the cable 11. The latter may be carried over additional pulleys 17 and 18, the former being associated with a downwardly curved portion 16 of the chute. After being carried in reverse over the pulley 18, the cable 11 may proceed forwardly over a smaller wheel 19 and then, in its lower reach, rearwardly over the wheel 20, whence the cable is carried to the roller 2.

On either side of the upper reach of the cable 11 a pair of support strips 13 (Figs. 1 and 3) preferably L-shaped in cross-section, is provided. It will be seen in Fig. 3 that the cans, such as the one 14 in Fig. 3, are supported by the cable 11 and the horizontal flanges 15 of the said support strips 13.

The foregoing structure constitutes the guideways which project horizontally for some distance and then, as at 16 (Fig. 2), curve downwardly and assume a vertical formation which will be referred to as the chute.

The chute is completed by a shield or cover

member 21 which extends over the curved portion 16 of the chute and which terminates, as seen at 22 (Fig. 2), above the bottom of the chute.

When the cans descend the chute, as indicated at 23 (Fig. 2), they are received, as indicated at 24, upon the reach 25 of the cable 11 which is moving in the direction of the arrow. The normal result of depositing cans upon a moving cable would be to overturn the cans especially where the cable or carrier is moving at considerable speed in one direction. Under these circumstances, the bottom of a can, deposited upright on the carrier, is jerked forward and the can topples backwardly and lies upon its side whence it might easily roll off the carrier. To avoid this, there is provided a latch 26 (Figs. 2 and 4) which may be pivotally attached, as at 27, to the lower end of the shield 21. The latch may have a spring 28 associated therewith (as seen in Figs. 4 and 5) for resiliently urging the lower end of the latch into the chute. The spring, as indicated, may have one end bearing against the latch 26 and the other end secured, as at 29, to the adjacent portion of the frame 8.

The lower end 30 of the latch 26 is disposed above the bottom of the chute, that is, above the cable reach 25, a distance slightly greater than the height of a can. As the can proceeds down the chute, it presses outwardly the latch 26, but as the can reaches the bottom the latch snaps inwardly and contacts the top of the can, at the forward edge thereof (Fig. 2), should the can begin to topple, to prevent overturning of the can by the moving carrier.

Thereafter, the cans are carried out as far as the pulley or wheel 19 (Fig. 2) where they are removed for subsequent operations.

It will be noted that all the cans must enter the chute lying on their sides. For assuring this position, a bumper 31 (Figs. 2 and 3) is disposed transversely of the side rails 6 and 7 a short distance in advance of the chute entry for placing upright cans on their sides, as indicated at 32.

The apparatus disclosed assures the delivery of every can of the line in a proper upright position whereby uninterrupted and efficient operation of the whole can handling apparatus is assured.

What is claimed is:

1. In combination, a constantly moving carrier, a chute above the carrier for delivering cans or similar articles thereto in an endwise position, and a yieldable member projecting inwardly of the chute adjacent the bottom thereof, said member being adapted to yield upon contact thereof by the individual articles to provide for passage of the articles onto the carrier and to return inwardly after each contact into a position immediately above the delivered article to preclude toppling or displacement thereof by the carrier.

2. In a device for handling cans or the like, the combination of a horizontal carrier moving in one direction, a chute discharging the cans endwise onto the carrier, and a yieldable latch member positioned adjacent the bottom of the chute and projecting into the path of descending cans at a distance above the carrier slightly greater than the height of the individual cans, said latch yielding outwardly upon contact by each can to provide for downward passage thereof to the carrier and moving inwardly immediately subsequent to such passage to a position immediately above the can to preclude toppling of the latter by the moving carrier as the can is delivered thereto.

3. In a device for handling cans or the like, the combination of a horizontal carrier moving in one direction, a chute discharging cans endwise onto the carrier, and means adjacent the bottom of the chute for contacting the forward top edge of cans as delivered from the chute to preclude toppling of the cans by the moving carrier.

FREDERICK C. MARX.