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3,182,779

DISPENSING APPARATUS FOR ROLLING CONTAINERS

Filed June 10, 1963

2 Sheets-Sheet 1

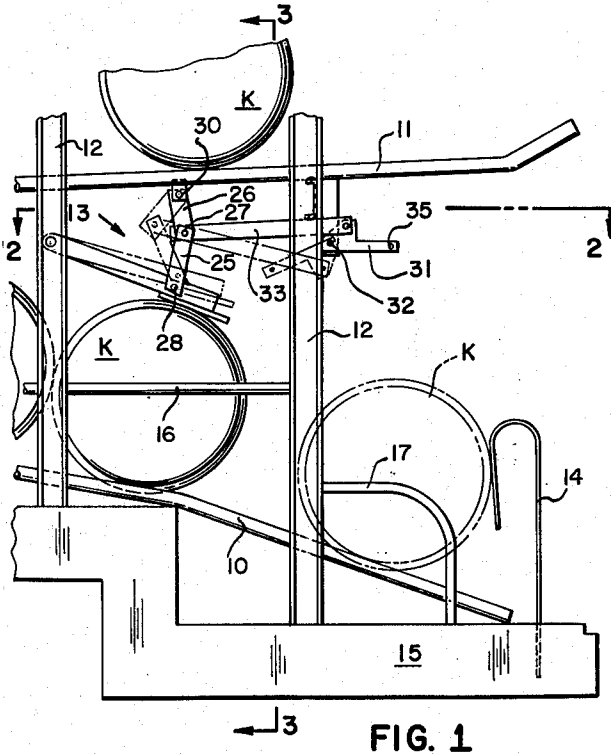


FIG. 1

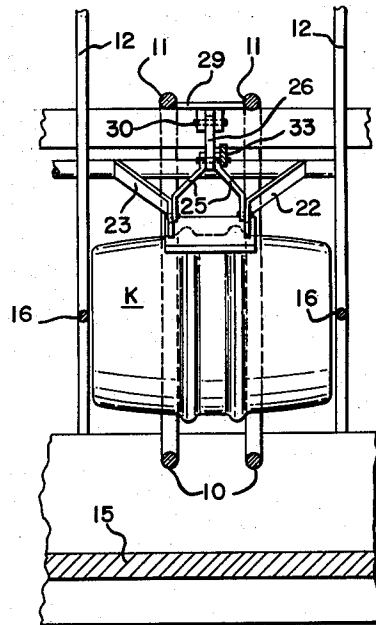


FIG. 3

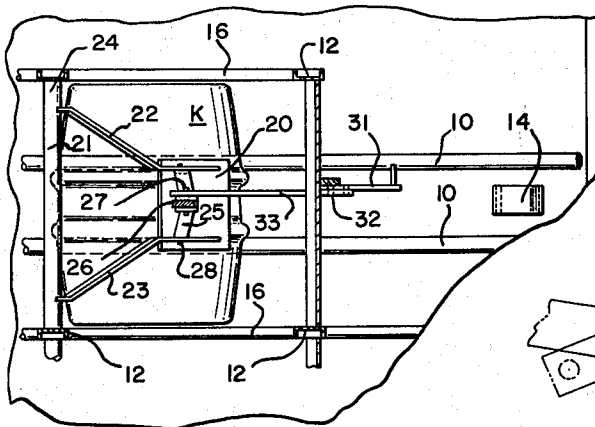


FIG. 2

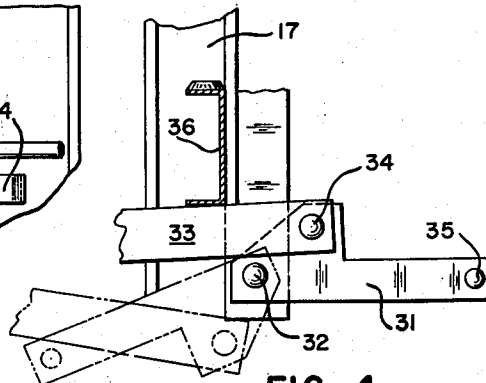


FIG. 4

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2 Sheets-Sheet 2

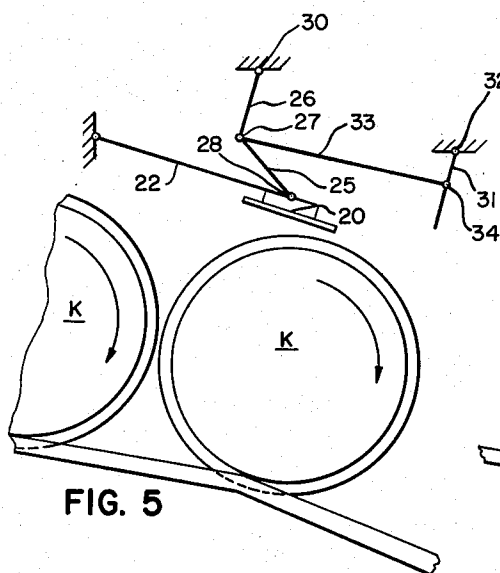


FIG. 5

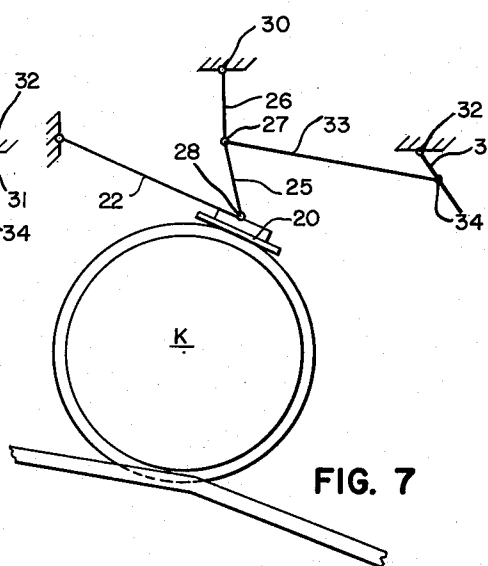


FIG. 7

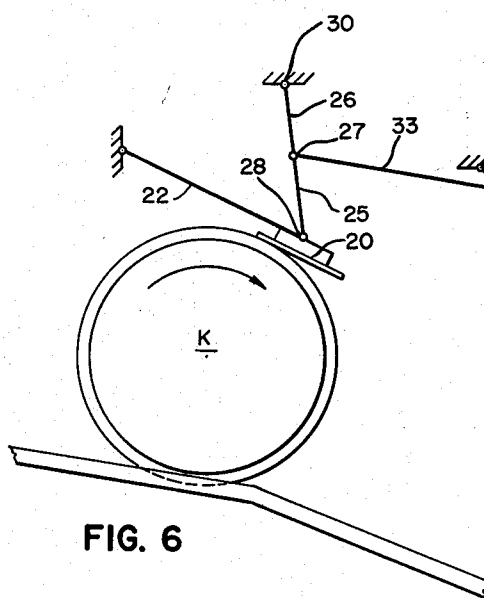


FIG. 6

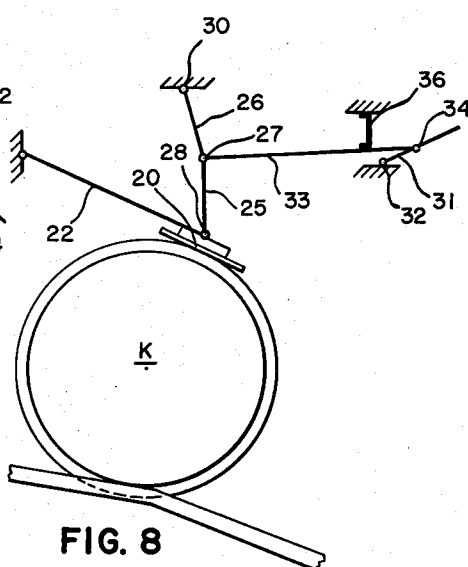


FIG. 8

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DISPENSING APPARATUS FOR ROLLING CONTAINERS

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1 Claim. (Cl. 193—32)

This invention relates to dispensing apparatus and more particularly to devices that are used for releasing and controlling the advance of rolling objects along rail conveyors. The invention involves novel apparatus permitting controlled dispensing of heavy rolling objects, such as kegs, under conditions requiring manual handling.

In brief, this invention is an improvement in apparatus for stopping a line of heavy rolling objects and holding that line of objects entirely by manual control. An apparatus of the type contemplated would be of particular utility in connection with the storage and handling of keg products, especially where those products are transported and delivered by the unit in trucks. The invention essentially comprises a pivotally mounted braking device including a brake shoe disposed above a rail conveyor. A toggle joint is utilized for supporting the brake shoe from a vertical support, and by actuating the knee of the toggle the brake shoe may be slowly raised or lowered relative to the rail conveyor. The invention further teaches a particular arrangement of parts, allowing the momentum of rolling kegs to be gradually absorbed by a manually controlled braking device. Means is also provided in connection with such an arrangement which permits the braking device to be actuated into a locking position.

It is a primary object of this invention to provide a dispensing apparatus for rolling containers that may be operated with one hand; an apparatus that provides cushioning of a rolling load as it is advanced into contact with the braking device; an apparatus that may be used with heavy objects such as beer kegs; and an apparatus that may be quickly and easily locked in a braking position.

Other objects of this invention will become apparent in view of the following detailed description and the accompanying drawings.

In the drawings forming a part of this application and in which like parts are identified by like reference numerals throughout the same,

FIG. 1 is a side elevation of a preferred embodiment of dispensing apparatus for rolling containers;

FIG. 2 is a vertical section taken on line 2—2 of FIG. 1;

FIG. 3 is a vertical section taken on line 3—3 of FIG. 1;

FIG. 4 is an enlarged detail view of one portion of apparatus shown in FIG. 1; and

FIGS. 5—8 are diagrammatic views of the apparatus showing various positions of operation from the time a container is released (and permitted to roll forward) to the time the second container in a supply line is held and the apparatus is locked.

Referring to FIG. 1 in particular, there is illustrated an embodiment of the invention comprising a rail conveyor including a pair of rails 10 inclined downwardly toward the right. An upper pair of rails 11 are also provided for conveying rolling kegs K first toward the left until they gravitate onto rails 10. For the purpose of this invention, rails 11 and vertical supports 12 merely serve as a supporting framework for a novel braking device, indicated by reference number 13.

In general, it will be evident that kegs K are disposed in a supply line and advanced along rails 10 by releasing the leading keg in the line. The leading keg is released by manual operation of braking device 13 at which time said keg rolls toward the delivery point or station at the end of rails 10.

A removable spring steel bumper bar 14 is received in a vertical slot of a foundation 15 near the end of rails 10.

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During normal dispensing operation bar 14 is removed, but as a safety measure in view of the weight of each keg, bar 14 may be positioned as shown. In addition, side rails 16 and 17 are used to guide and retain kegs K upon rails 10 as they are advanced.

This invention is more directly connected with the construction, arrangement and operation of braking device 13. The device comprises a braking shoe 20 mounted to a pivotally supported framework including a tubular shaft 21 and arms 22 and 23. Shaft 21 receives a supporting rod 24 therethrough, said rod being rigidly secured between a pair of vertical supports 12. Braking shoe 20 is vertically supported in part by a toggle joint comprised of a pair of links 25 and a link 26, links 25 and 26 being connected at a knee joint 27. Link 25 is also pivoted to braking shoe 20 upon a horizontal pivot 28, and link 26 is horizontally pivoted from a vertical support plate 29 that has been welded to upper rails 11. The pivot mounting for link 26 is indicated by reference number 30.

Means comprising a crank arm 31 mounted upon a fixed pivot 32 and a pitman 33 are provided for moving knee pivot 27 to lift braking shoe 20 relative to rails 10. Pitman 33 is pivotally connected to crank arm 31 by pivot 34 and to the toggle joint by knee pivot 27. The location of pivots 32 and 34 is selected such that a relationship is maintained during manual operation of crank arm 31 to permit both manual control of braking and a positioning of the actuating mechanism in a locked position.

Referring to the diagrammatic views illustrated by FIGS. 5—8 and to FIG. 6 in particular, the distance A between knee pivot 27 and the pivot 34 is less than the sum of the distances B and C, where

B equals the distance between the crank arm pivot 32 and the knee pivot 27 when said knee pivot is vertically aligned simultaneously with pivots 28 and 30; and C equals the radial distance between crank arm pivot 32 and the pivot 34.

A distance relationship of this type insures that the toggle may be operated on both sides of center by pivotally moving crank arm 31 as with a handle 35.

A stop means provided by way of a channel member 36 connected between spaced supports 12 limits the upward movement of arm 33, as shown in FIG. 4. The purpose and operation of the stop means will be explained hereinafter in connection with a description of FIGS. 5—8 and an operation of the braking apparatus.

From the standpoint of controlling the movement and position of brake shoe 20, it is important that knee pivot 27 be simultaneously alignable in a common vertical plane. So constructed, braking mechanism 13 will be urged by its own weight into a position where pivots 27, 28 and 30 are vertically aligned. Furthermore, any operation of crank arm 31 tending to buckle the toggle will tend to raise the braking shoe 20 relative to the supporting rail 10.

Referring to FIG. 6 again, it will be further noted that the leading edge 20a of the braking shoe is slightly more distant from rails 10 than the trailing edge 20b thereof. Accordingly, the braking shoe has a contact surface which is inclined relative to support rails 10 at a time when the knee pivot 27 is in line with pivots 28 and 30.

FIGS. 5—8 illustrate one complete cycle of key dispensing. FIG. 5 particularly shows the relationship of parts soon after crank arm 31 has been pivoted to actuate the toggle and lift shoe 20 from engagement with a keg. As soon as the released keg has moved out from under shoe 20 the keg next in line rolls forward, while the operator permits the weight of the braking mechanism to lower itself into the position shown in FIG. 6. The rolling keg then advances until it comes into wedging con-

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tact with shoe 20. Frictional engagement between shoe 20 and the keg results in the application of an increasing counter torque that tends to absorb the keg's rolling momentum. If the rolling momentum is great, the keg may advance to the position of FIG. 7, which shows that shoe has been lifted against its own weight and the weight of almost the entire braking device. A further movement of the keg may be prevented by applying manual restraint through control of crank 31. After the keg stops rolling the braking apparatus may then be operated into the locking position of FIG. 8. The weight of the braking mechanism, and shoe 20 in particular, tends to move knee pivot 27 to the left as shown. However, a binding contact between pitman 33 and stop means 36 prevents such movement unless crank arm 31 is operated clockwise.

Although a preferred embodiment of this invention has been described in detail, various changes may be made without departing from the spirit of the invention or the scope of the attached claim and each of such changes is contemplated.

What I claim and desire to secure by Letters Patent is:

A manually controlled and operated dispensing apparatus for heavy kegs, comprising: a pair of parallel rails inclined downwardly toward a delivery point; a braking device disposed between and above said rails including a braking shoe mounted upon a pivoted arm, said arm being pivoted upon a horizontal axis; a toggle joint comprised of a pair of links connected together at a knee joint, one link being pivotally connected to said shoe by

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a first horizontal pivot and the other link being pivoted to a vertical support by a second horizontal pivot above said braking shoe, said braking shoe having a braking surface facing said rails and inclined downwardly towards said delivery point whereby said braking surface and said rails therebeneath form a converging angle towards said delivery point when said knee joint is in line with said first and second horizontal pivots; a manually operable crank pivoted about a third horizontal pivot, a connecting rod pivotally connected at one end to said knee joint and at the other end to said crank, over-center stop means for stopping rotation of said crank when the pivotal connection of said connecting rod and said crank is slightly on one side of a plane defined by said knee joint and third pivot, said crank being freely rotatable about said third pivot when the pivotal connection of said connecting rod and said crank is on the other side of said plane defined by said knee joint and third pivot.

References Cited by the Examiner

UNITED STATES PATENTS

506,504	10/93	Hollis	188—74
1,921,577	8/33	Nelson	193—40
2,818,978	1/58	Post	193—32
2,842,243	8/58	Neidhardt	193—32

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