March 4, 1969 F. E. CLARK ETAL 3,430,416

CASE PACKER ADAPTER

Filed Feb. 25, 1966 Sheet 1 of 3

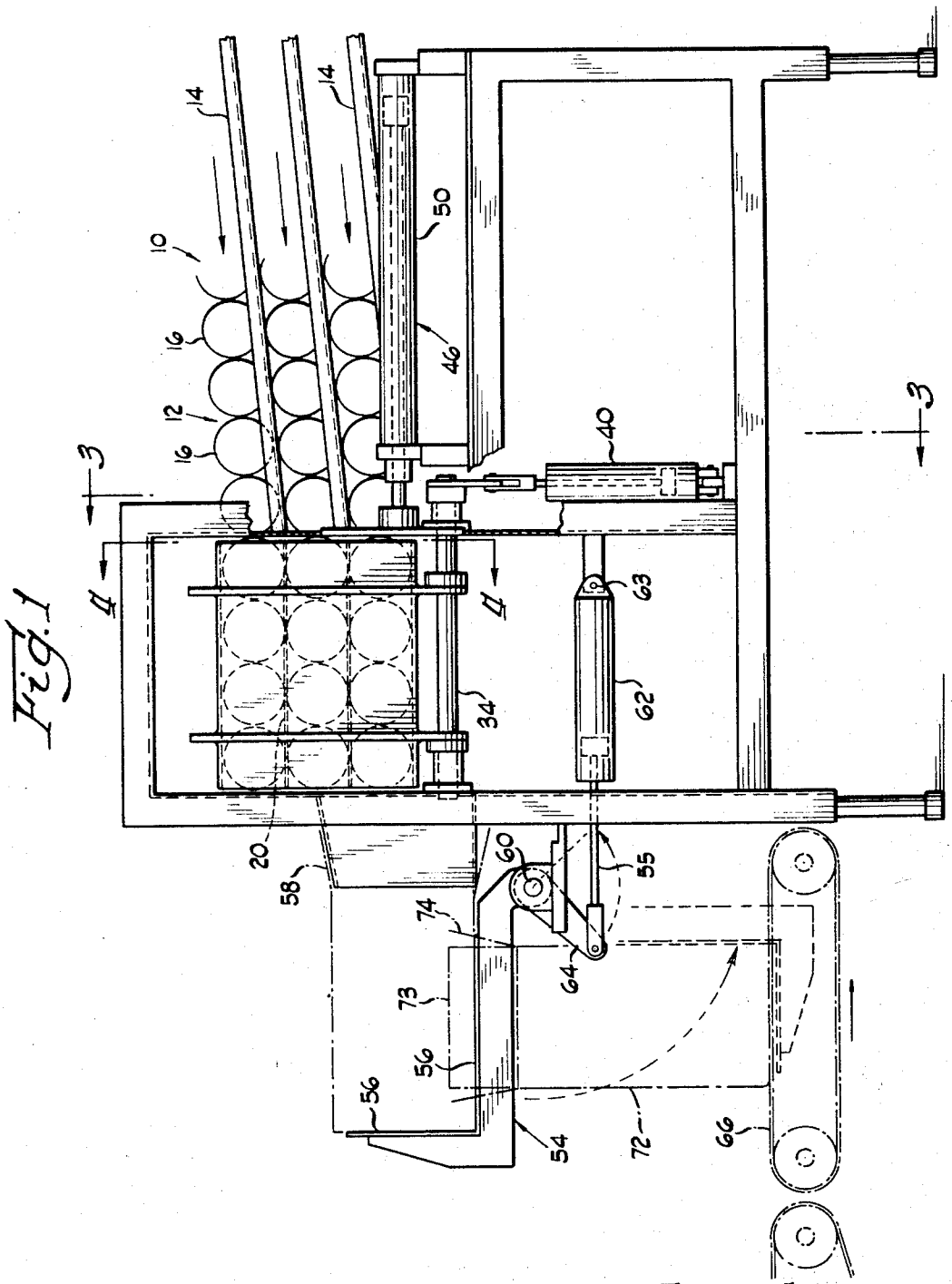


Fig. 1

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Fig. 2

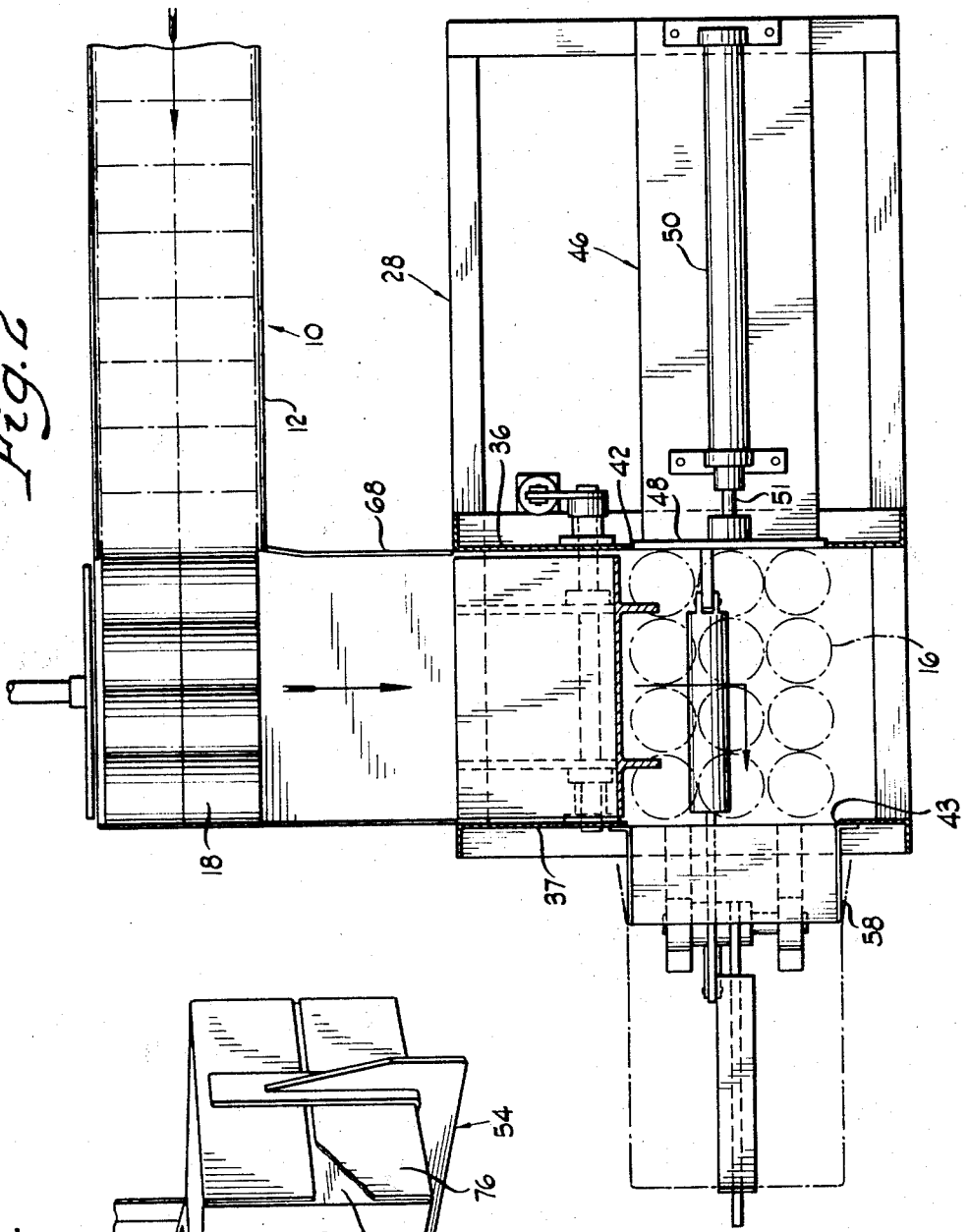


Fig. 5

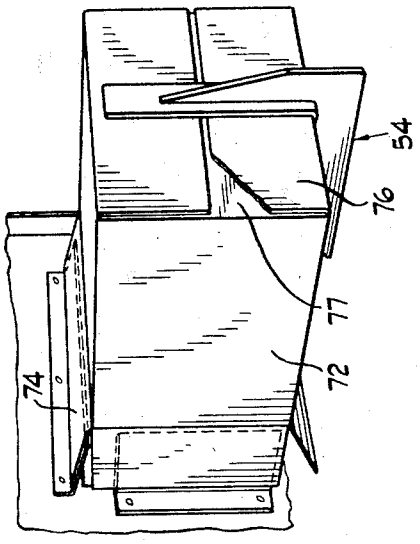


Fig. 3

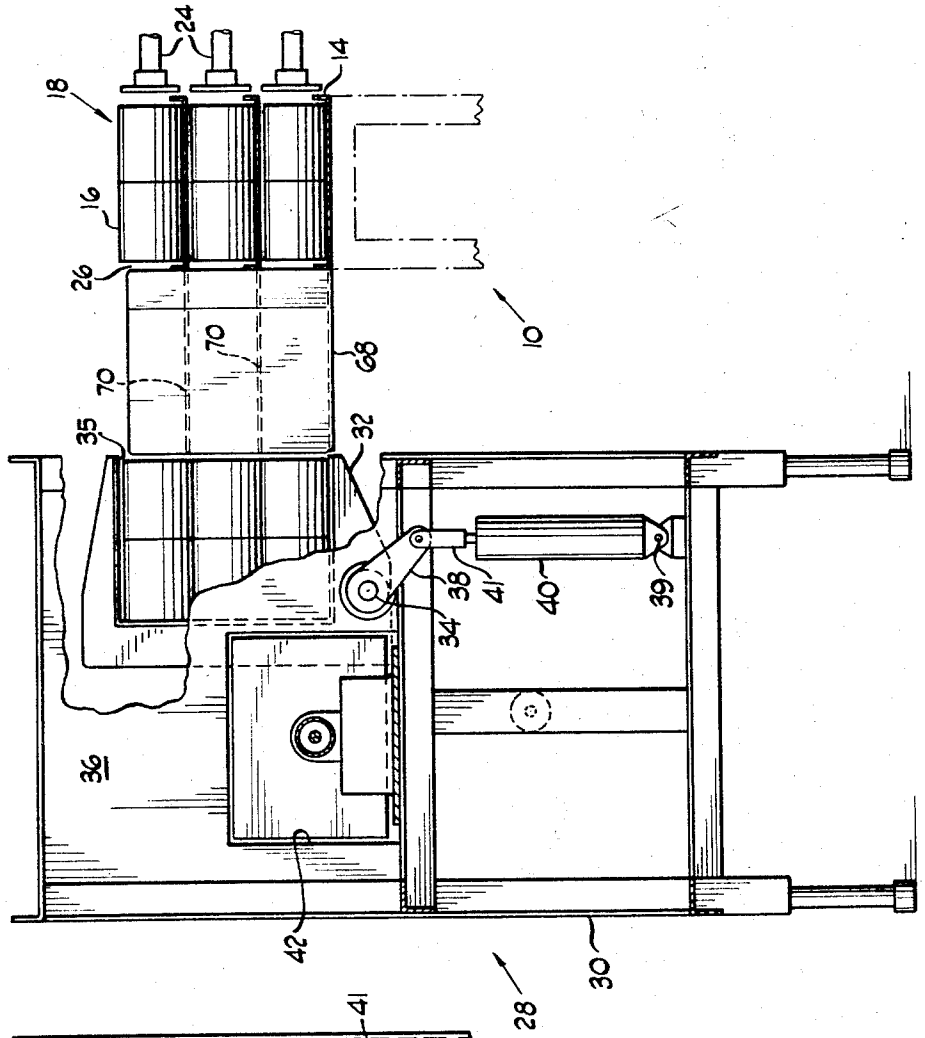
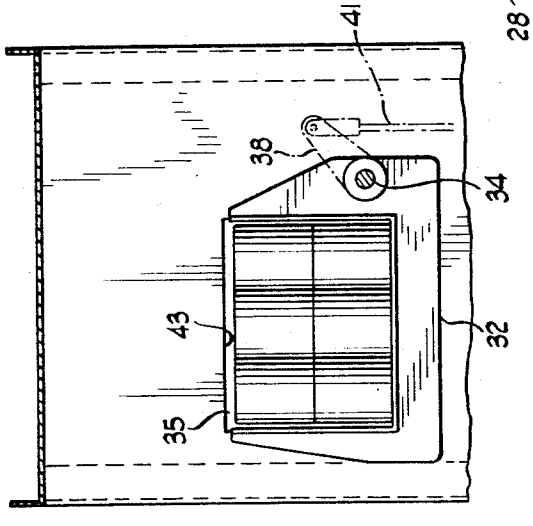

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Fig. 4


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3,430,416

CASE PACKER ADAPTER

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U.S. Cl. 53—159 2 Claims
Int. Cl. B65b 5/06, 35/40

ABSTRACT OF THE DISCLOSURE

A device for end-loading containers with cans, comprising in combination a chute for rolling cans downwardly; an open-ended arranger for receiving the cans from the chute and grouping them, positioned on their sides, in horizontal rows; an open-ended receiver for receiving cans from the arranger; means for pivoting the receiver from can receiving position through approximately 90° to a can discharging position whereat the cans are extended vertically; a container support for retaining an open-ended container therein; pushers for moving the cans from the arranger to the receiver and from the receiver into the open-ended container. The container support is pivotable so as to move an open-ended loaded container from its horizontal orientation to a vertical orientation with the open end facing upwardly.

This invention relates to an adapter for converting a top loading case packer in a manner suitable for loading the grouped cans from the case packer into an end loaded container.

Top loading case packers, of the type disclosed in the expired Hurst Patent 1,976,128, are common in the can packing industry and form an economical means for grouping and packing cans horizontally into the open top of a top loaded case disposed on its side. End loaded containers or cases are more economical than top loaded cases because less board is used when the smaller dimension end walls of the container have the double closure flaps. However, most commercial end loading case packers are rather costly, and furthermore, many canning companies already have top loading case packing equipment. An adapter suitable for converting such existing top loading equipment for the loading of an end loaded container thus would permit these companies to use the more economical end loaded container at a relatively low cost conversion price.

Accordingly, the main object of this invention is to provide an adapter that is suitable as a low cost accessory item to be used with a top loading case packer for converting the same to load cans into an end loaded container.

The invention will be more fully understood and appreciated after reviewing the following specification, including as a part thereof the accompanying drawings; wherein:

FIG. 1 is a side elevational view of the subject adapter shown in operative association with a typical top loading case packer;

FIG. 2 is a top plan view of the assembly shown in FIG. 1;

FIG. 3 is an end elevational view, partly in section, of the assembly of FIGS. 1 and 2 as seen generally from line 3—3 in FIG. 1;

FIG. 4 is an end elevational view, partly in section, of the adapter of FIG. 3, except showing the same in its can discharging position, the view being generally from line 4—4 in FIG. 1; and

FIG. 5 is a perspective view, as seen generally from the left, rearward side of FIG. 1, of a container support section of the adapter.

FIGS. 1, 2 and 3 show the cooperative association of the subject adapter with a typical top loading case packer **10** of the type disclosed in the Hurst Patent 1,867,128. In the drawings, only the discharge end of the case packer **10** is shown, which discharge end includes generally a chute **12** having spaced rails **14** to support separate rows or tiers of cans **16** to be loaded into the case. Generally, the chute **12** is inclined so that each can will roll along the rails **14** until solid against the can immediately preceding it. An open ended arranger **18** is disposed in horizontal registry with the chute **12** to receive the cans therefrom and group them to correspond to the lateral cross dimensions of the case to be loaded. Thus, as shown in FIG. 1, a case having a can grouping of 4 x 3 is loaded by means of an arranger dimension to form a like can pattern. The arranger **18** has rails **20** aligned with the rails **14** of the chute to support the cans in the separate tiers. Appropriate gate means (not shown) are provided at the end of the chute to release the cans on the chute to the arranger. Pushers **24** are disposed adjacent one open end of the arranger **18** adapted to engage the can received therein, and is movable through the arranger to force the cans from the opposite open end **26**. Loading horn **68** is secured adjacent the arranger in horizontal registry therewith, and a top loaded case (not shown) normally is positioned on its side adjacent the loading horn so that the cans are moved from the arranger directly into the open top of the case.

The subject adapter **28** is located adjacent the loading horn **68** of the arranger to receive cans discharged therefrom for orienting.

The container support **54** is supported to pivot about shaft **60** in a manner to swing the container 90° so that its open end through which the cans were loaded is faced upwardly. Thus, power cylinder **62**, pivoted at **63**, has its rod **55** connected by means of the link **64** to the support **54** to swing the support to face the closed, unsealed end of the container downwardly and the opened, unsealed end upwardly. By properly locating a conveyor below the container support, such as shown in schematic at **66** in FIG. 1, the loaded but unsealed container can then be slipped off of the support and onto the conveyor **66** to be carried away in the direction shown to conventional case closing and sealing equipment normally used on the top loaded cases loaded by the case packer.

It will be noted that the subject adapter permits a ready conversion of a top loading case packer to an end loading device with little or no modification to the case packer and the closing and sealing equipment already in the plant.

It should be understood also that by appropriate controls, the operation of the adapter can be made semi-automatic so that the completion of each cycle in the operation can trigger the next cycle. Commonly, the whole operation is started by a container **72** being placed on the loading horn **58**, when the support **54** is down (as shown in phantom in FIG. 1), the container flap **73** or **74** closing a limit switch or the like to actuate the power cylinder **62** and raise the support against the container. At this time the pusher is actuated, and appropriate limit switches can be connected to the pusher to withdraw it after it has advanced a full stroke so that a subsequent group of cans can move into place on the arranger. Limit switches placed on or adjacent the receiver **32** can detect the presence of a complete can group in the receiver to actuate the power cylinder **40** and move the cylinder to its discharging position. The presence of the receiver in its discharging position (FIG. 4) can be detected by appropriate limit switches to actuate the power cylinder **50**

and to move the plunger through the receiver, whereupon limit switches connected either to the plunger or actuated by the moved cans reverse the plunger and swing the container support to the down position. The loaded container moves automatically off of the support onto the conveyor, and an operator can then place an empty container on the loading horn to begin the cycle again. Normally, the bottom end wall flaps **76** and **77** are closed (FIG. 5) and the top end wall flaps **73** and **74** are open and guided over the loading horn.

What is claimed is:

1. A device for end-loading containers with cans, comprising in combination:

(a) an inclined chute for rolling a plurality of cans positioned on their sides in a downward direction;

(b) an open-ended arranger located in registry with a lower end of said chute for receiving cans therefrom and grouping them into horizontal rows containing cans positioned on their sides;

(c) an open-ended, U-shaped receiver adapted in a first position to face its open side toward and to be in registry with one open end of said arranger;

(d) a pusher movable through said arranger to discharge the cans from one end thereof and into said receiver located in said first position;

(e) means for pivoting said receiver from the first position through approximately 90° to a second position whereat the cans therein are extended vertically;

(f) a container support disposed adjacent one open end of the receiver, when the receiver is in its second position, suitable for holding an end-loaded container with its open end facing and in registry with said one open end;

(g) a plunger disposed adjacent the opposite open end of the receiver, when the latter is in its second position, adapted to be advanced through the receiver toward the container support for moving the cans from the receiver and into the container, and thereafter to be retracted to permit the return of the receiver to the first position.

2. A device as defined in claim **1**, wherein said container support is pivoted about a horizontal axis to stand the container having an upwardly facing open end.

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U.S. Cl. X.R.

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