A. M. AUGENSEN.

CAN CONVEYER AND DISTRIBUTER.

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1,236,389.

Patented Aug. 14, 1917.

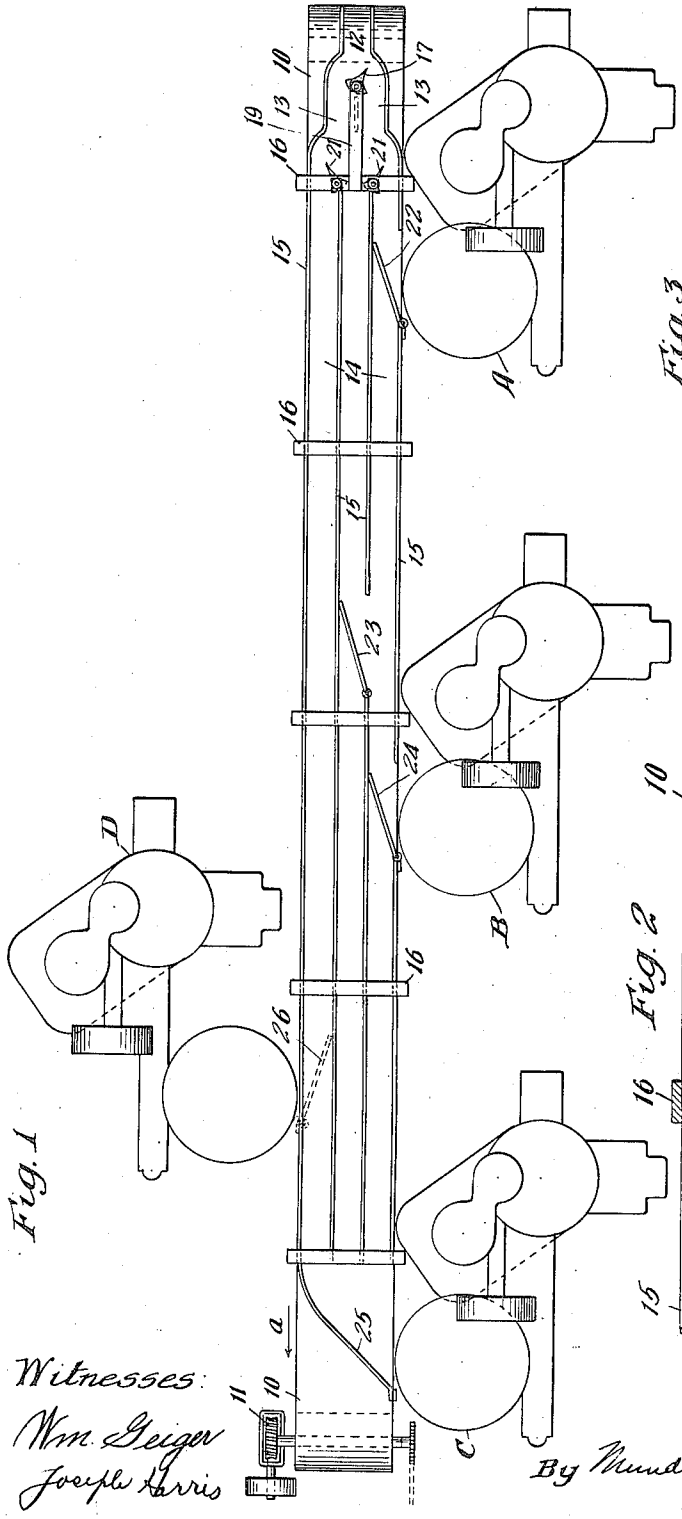


Fig. 1

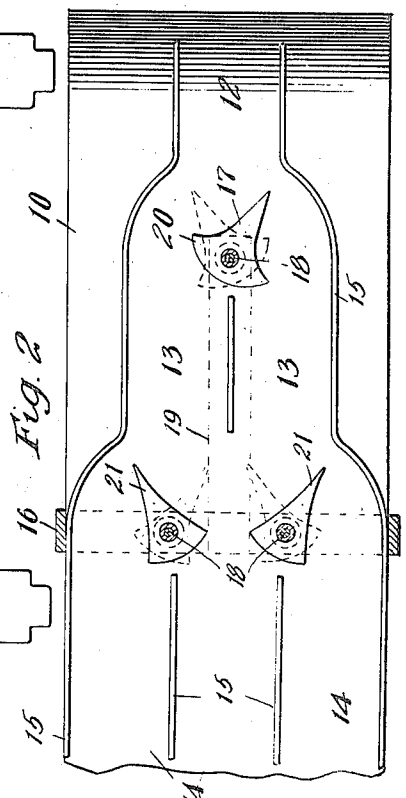


Fig. 2

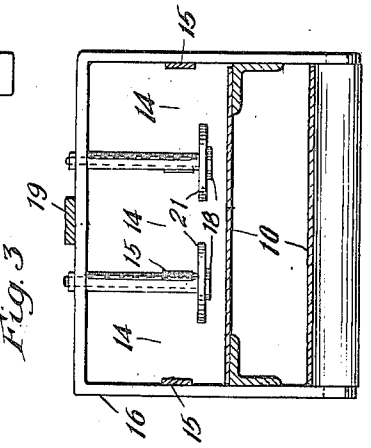


Fig. 3

Witnesses:

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UNITED STATES PATENT OFFICE.

AUGUST M. AUGENSEN, OF MAYWOOD, ILLINOIS, ASSIGNOR TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CAN CONVEYER AND DISTRIBUTER.

1,236,389. Specification of Letters Patent. Patented Aug. 14, 1917.

Application filed January 31, 1914. Serial No. 815,603.

To all whom it may concern:

Be it known that I, AUGUST M. AUGENSEN, a citizen of the United States, residing in Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Can Conveyers and Distributers, of which the following is a specification.

This invention relates to improvements in can conveyers and distributers.

The object of the invention is to provide simple mechanism, automatically operated by the moving cans themselves, for distributing a single line of rapidly moving cans into two or more lines and directing them to a plurality of closing machines.

The invention furthermore consists in the improvements in the parts and devices and in the novel combinations of the parts and devices herein shown, described or claimed.

It has been found in many instances that a battery of can closing machines each running at a slow speed, give better results than a single machine running at a high speed equal to the sum of two or more slow speed machines, since the product is more uniformly distributed, more opportunity is given for inspection and spilling is reduced to a minimum. It has further been found that the filling machines now commonly used to place the measured quantities of contents into the open cans operate generally at a much higher speed than the closing machines, so that when a filling machine is run at full speed it is necessary to use a battery of can closing machines to take the entire product therefrom. Furthermore, a packer in the height of a season is some times required to run his entire plant at full speed day and night and at such times it is essential that auxiliary means be provided in case any of the closing machines breaks down or is stopped for any reason. I have provided an arrangement which takes into account all of the above mentioned factors and the same consists in a distributer so arranged that the cans as they come from a filling machine at high speed are distributed successively and in rotation to a battery of closing machines, the distributer being so arranged that in case any one of the battery of closing machines breaks down the cans may be switched to an emergency or auxiliary closing machine without stopping the feeding of the cans.

In the drawing forming a part of this specification Figure 1 is a top plan view of a combined conveyer and distributer embodying my improvements, showing diagrammatically a plurality of can closing machines in connection therewith, and Fig. 2 is an enlarged detail plan view of some of the parts for distributing and diverting the cans from a single line into a plurality of lines. Fig. 3 is an elevation, looking from the right hand of Fig. 2, of the pair of distributing fingers, the conveyer and some of the frame parts being shown in section.

In said drawing, 10 denotes an endless, continuously moving feed belt operated by any suitable means such as a worm and worm gear arrangement as shown at 11, the belt moving in the direction indicated by the arrow *a*. The filled cans are directed onto the conveyer 10 by any suitable means as they come from the filling machine (not shown) through the single guideway or lane 12 shown at the right-hand end of Fig. 1. The guideway or lane 12, as shown, forks out into two lanes or guideways 13, 13 and the latter are again forked to form three guideways or lanes 14, 14. As will be understood, the guideways or lanes before referred to are formed by suitable bars 15 secured to the table which supports the belt or conveyer 10 by any suitable means such as the bridges 16 which extend up and over the endless conveyer as shown in Fig. 3. Where the guideway or lane 12 branches into the two guideways 13, 13 a pivotally mounted, substantially triangular-shaped finger 17 is placed as shown most clearly in Fig. 2, said finger being mounted on a depending stub shaft 18 which is secured to a bridge 16 by a connecting member 19. When an oncoming can strikes the finger 17 when the latter is in the position shown in Fig. 2, said can will be thrown to the right hand guideway or lane 13 and in passing the finger 17 will engage the projection 20 and turn the latter to the position indicated in dotted lines in said figure. The next can will be deflected to the left hand guideway or line 13 and the finger 17 returned to the position shown in full lines. In this way, it will be seen that the cans are distributed successively and in rotation to the two lanes 13, 13. At the points where the lanes or guideways 13, 13 branch into the three guideways 14, 14, 14 are placed two more piv-

otally mounted fingers 21, 21. When the fingers 21, 21 are in the position shown in full lines in Fig. 2, the first can which comes down either of the guideways 13 will be deflected or diverted into the central guideway 14 and at the same time will turn the fingers 21, 21 inwardly to the position shown in dotted lines. The next oncoming can from the other guideway 13 will be deflected to the outermost guideway on the same side of the distributer and at the same time will operate the corresponding finger 21 and return it to the position shown in full lines in said Fig. 2. The third oncoming can from the other guideway 13 will be diverted to the outer-most guideway 14 on the corresponding side of the distributer and the corresponding finger 21 returned to its former position, which will leave both fingers 21 in the position shown in full lines in Fig. 2. The next or fourth oncoming can will be directed into the central guideway or lane 14 and the operation continued as above described, with the variation that the fifth can will enter the right hand guideway (that shown at the top of Fig. 2) and the sixth can will enter the left hand guideway. Thereafter the seventh, eighth and ninth cans will follow the same order as the first, second and third; and so on, with the above indicated variation.

On one side of the conveyer and distributer I have shown a battery of three closing machines A, B and C. A switch or gate 22 deflects the cans from the nearest guideway 14 to the can closing machine A. A similar pivoted switch or gate 23 deflects the cans from the central guideway 14 to the left hand guideway 14 and from the latter the cans are directed to the closing machine B by a third switch or gate 24. The cans in the right hand guideway 14 are directed to the closing machine C by the curved guard 25. As shown in dotted lines in Fig. 1, a gate or switch 26 may be opened to divert the cans from the right hand guideway 14 to the emergency or auxiliary closing machine D in case any of the other machines A, B or C breaks down or is stopped for any reason. When the closing machine C is not being used the gates or switches 22, 23 and 24 will be left as shown and the gate 26 moved to the position shown by dotted lines. When the closing machine B is not being used, the gate 23 will be closed and the gate 26 opened so that the cans going down the central guideway will pass to the closing machine C. When the machine A is not being used, the gates 22 and 23 will be closed and the gate 26 opened.

From the preceding description it will be seen that the conveyer and distributer which I have described is of very simple construction, the cans are equally distributed to the various machines from a single line, the distribution of the cans is accomplished automatically by means operated by the cans themselves and the emergency closing machine can be brought into play to take the place of any other of the battery of closing machines without stopping the conveyer.

Although I have herein shown and described what I now consider the preferred embodiment of my improvements, yet it will be understood that various changes and modifications, such for instance as by varying the number of lanes or guideways to which the cans are distributed, may be made without departing from the spirit of the invention and all such changes and modifications are contemplated as come within the scope of the claims appended hereto.

I claim:

1. In a can closing apparatus, in combination: an endless traveling conveyer having a plurality of separate fixed longitudinal passageways thereover; a plurality of can closing machines arranged at different points along and adjacent said conveyer; and adjustable means for separately distributing cans from said passageways to said closing machines respectively and for varying such distribution.

2. In a can closing apparatus, in combination: an endless traveling conveyer having a plurality of separate fixed longitudinal passageways thereover comprising an intermediate passageway and outer passageways at the sides thereof; a single passageway leading to near the receiving ends of said separate passageways; means for distributing cans from said single passageway to said separate passageways; a plurality of can closing machines arranged at different points along and adjacent said conveyer; and adjustable means for separately distributing cans from said passageways to said closing machines respectively adapted to vary such distribution.

3. In a can closing apparatus, in combination; a conveyer adapted to carry articles thereon in a plurality of parallel series of successive articles, means for distributing articles from a single series fed to said conveyer and for distributing them in rotation to the different series of said plurality of series; a plurality of can closing machines arranged at different points adjacent said conveyer; and adjustable means for separating and distributing cans from said passageways to said closing machines respectively and for varying such distribution.

4. In a conveying and distributing apparatus for machines for operating on can bodies, in combination: an endless conveyer belt adapted to transport can bodies; a series of said machines arranged along the said belt; a series of can-confining guideways arranged longitudinally of and above the said belt; adjustable switches arranged be-

tween the said guideways and adapted, according to their adjustment, to cause the can bodies in a guideway to be maintained therein or to be diverted therefrom or to be diverted from one guideway to another across an intermediate guideway; means for diverting can bodies in an outer guideway to any one of the contiguous machines; means for actuating the conveyer belt; a feeding guideway at the receiving end of the said belt; and means for distributing can bodies which are supplied through the said feeding guideway to the first mentioned guideways.

5. In a conveying and distributing apparatus for can closing machines, in combination: an endless conveyer belt; a series of said machines arranged along the said belt, some at each side thereof; a series of can-confining guideways arranged longitudinally of and above the said belt; adjustable switches arranged between the said guideways and adapted, according to their adjustment, to cause the can bodies in a guideway to be maintained therein or to be diverted therefrom, or to be diverted from one guideway to another across an intermediate guideway; means for diverting can bodies in the outer guideways to any one of the contiguous machines; means for actuating the conveyer belt; a feeding guideway at the receiving end of the said belt; and automatically operated means for distributing can bodies which are supplied through the said feeding guideway to the first mentioned guideways.

6. In a conveying and distributing apparatus for can closing machines, in combination: an endless conveyer belt; a series of said machines arranged along the said belt, some at each side thereof; a series of can-confining guideways arranged longitudinally of and above the said belt, the number of said machines being greater than the number of said guideways; adjustable switches arranged between the said guideways and adapted, according to their adjustment, to cause the can bodies in a guideway to be maintained therein or to be diverted therefrom, or to be diverted from one guideway to another across an intermediate guideway; means for diverting can bodies in the outer guideways to any one of the contiguous machines; means for actuating the conveyer belt; a feeding guideway at the receiving end of the said belt; and automatically operated means for distributing can bodies which are supplied through the said feeding guideway to the first mentioned guideways; whereby any machine may remain inactive while the distributed cans are received and operated on by the active machines.

7. The combination of an endless conveyer; a series of can machines arranged near said conveyer to receive can bodies therefrom; an odd number of guideways arranged longitudinally over said conveyer; means for actuating the conveyer; a feeding guideway at the receiving end of the conveyer; and can-actuated oscillatory fingers for distributing cans successively and equally to said guideways, two of said fingers being arranged to direct cans to the same guideway.

8. The combination of an endless conveyer; a series of can machines arranged near said conveyer to receive can bodies therefrom; side guideways and an intermediate guideway arranged longitudinally over said conveyer; means for actuating the conveyer; a feeding guideway at the receiving end of the conveyer; and can-actuated oscillatory fingers for distributing cans successively and equally to said guideways, two of said fingers being arranged to direct cans to the same guideway.

Signed this 28 day of January, 1914, in the presence of two witnesses.

AUGUST M. AUGENSEN.

Witnesses:

H. M. MUNDAY,

THOMAS J. O'BRIEN.