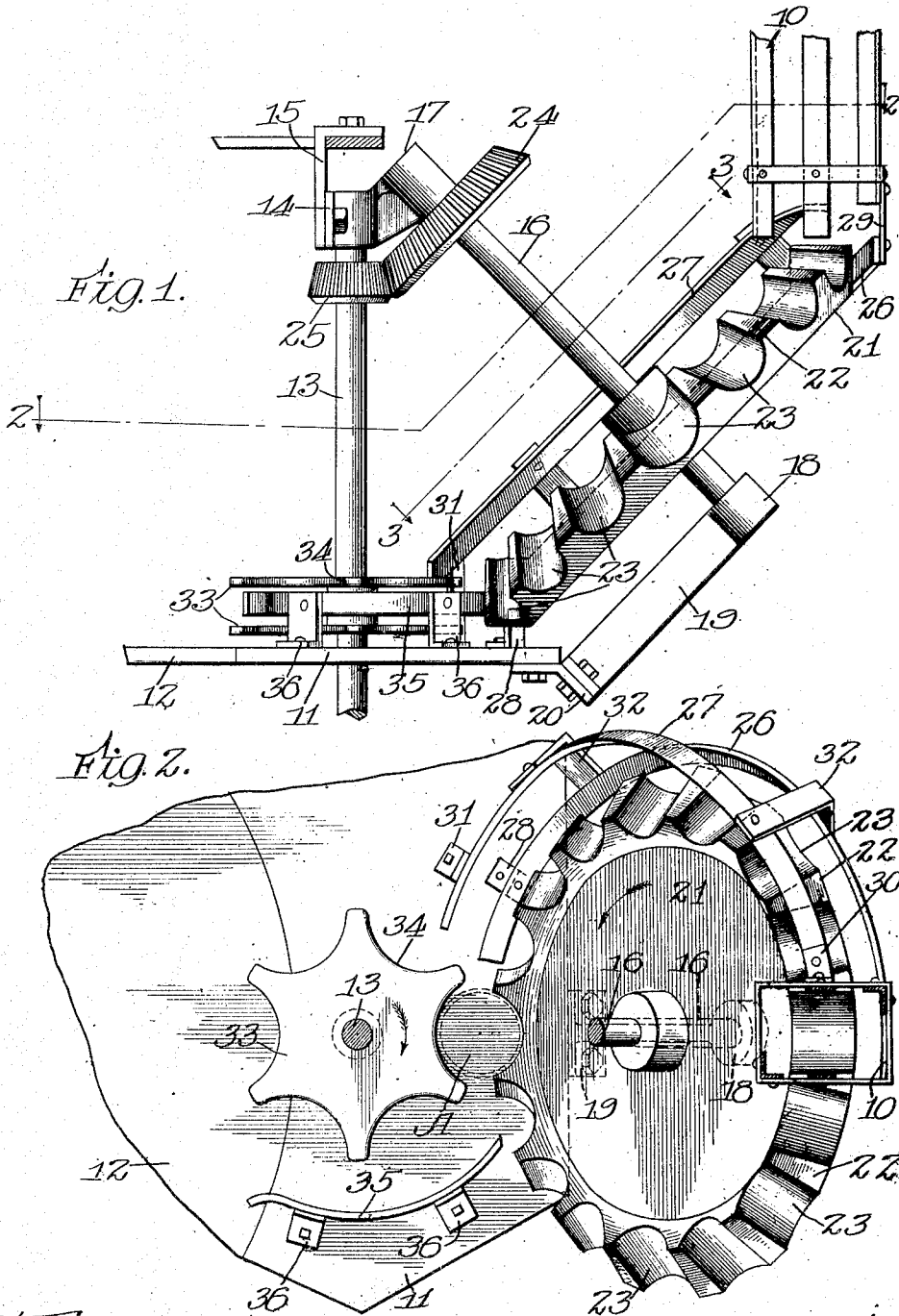


F. L. JEFFERIES & W. SPAIN.
 APPARATUS FOR HANDLING CANS AND THE LIKE.
 APPLICATION FILED FEB. 18, 1911.

1,015,319.

Patented Jan. 23, 1912

2 SHEETS—SHEET 1



Witnesses:
 G. D. Marus Jr.
 Herbert A. Hallin

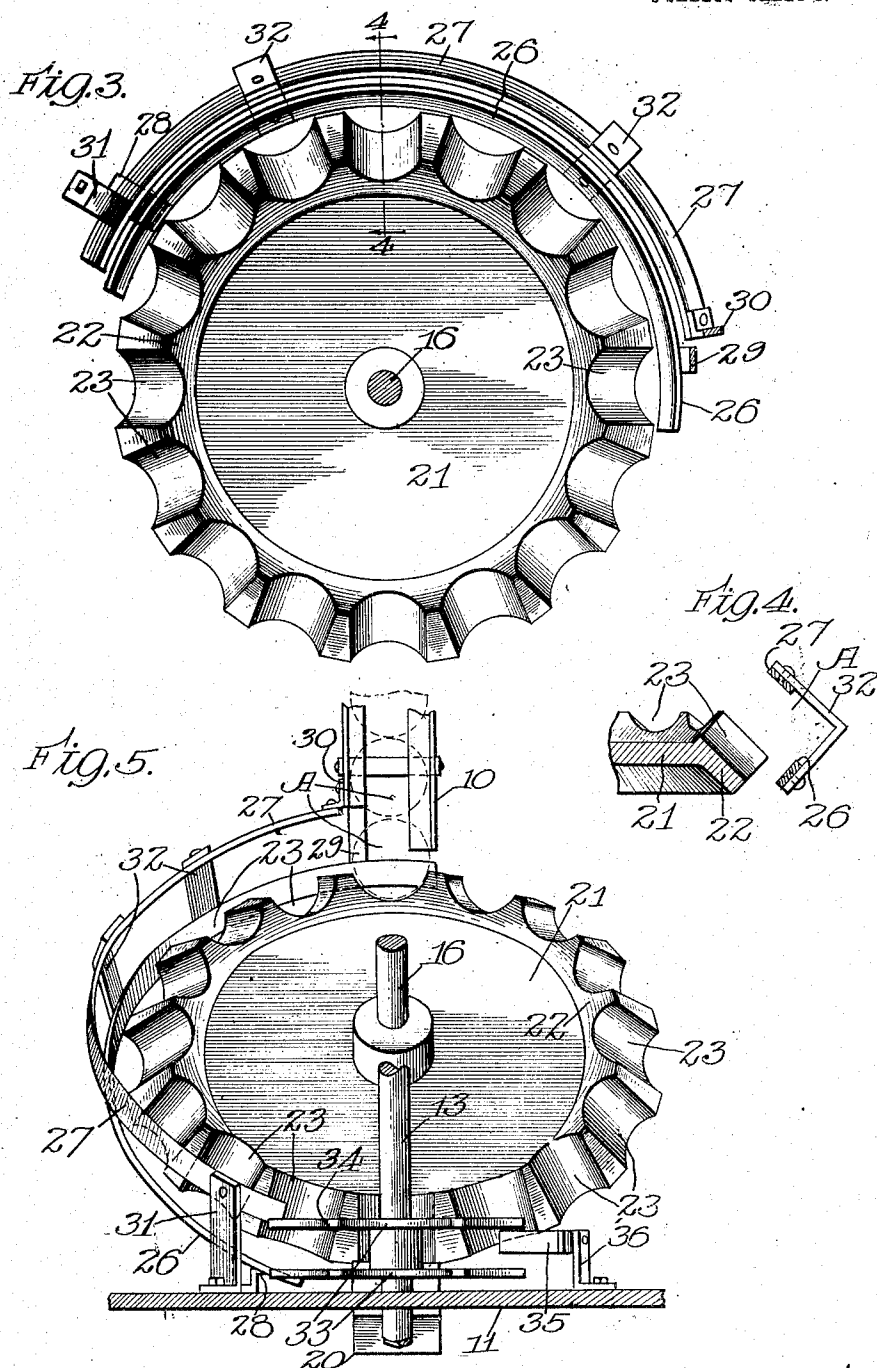
Inventors
 Frederick L. Jeffries
 William Spain
 by R. Barnett Atty.

F. L. JEFFERIES & W. SPAIN.
 APPARATUS FOR HANDLING CANS AND THE LIKE.
 APPLICATION FILED FEB. 18, 1911.

1,015,319.

Patented Jan. 23, 1912.

2 SHEETS—SHEET 2.



Witnesses:
 J. D. Barnes Jr.
 Robert A. Kline

Inventors
 Fredrick L. Jeffries
 William Spain
 W. O. Barnett
 Attys.

UNITED STATES PATENT OFFICE.

FREDRICK LESTER JEFFERIES, OF GRANITE CITY, ILLINOIS, AND WILLIAM SPAIN, OF ST. LOUIS, MISSOURI, ASSIGNORS TO CORN PRODUCTS REFINING COMPANY, A CORPORATION OF NEW JERSEY.

APPARATUS FOR HANDLING CANS AND THE LIKE.

1,015,319.

Specification of Letters Patent.

Patented Jan. 23, 1912.

Application filed February 18, 1911. Serial No. 609,297.

To all whom it may concern:

Be it known that we, FREDRICK L. JEFFERIES and WILLIAM SPAIN, citizens of the United States, residing at Granite City, in the county of Madison and State of Illinois, and St. Louis, Missouri, respectively, have invented certain new and useful Improvements in Apparatus for Handling Cans and the Like, of which the following is a specification.

Our invention relates to apparatus for handling cans and the like, and the invention has for its object to provide a novel form of apparatus for effecting a shift in the angular position of the cans or other similar articles.

The invention is illustrated as embodied in apparatus, the specific purpose of which is to take the cans from a horizontal position, for example, from the end of a can run, and turn them over into an upright position in readiness, for example, for filling or for the performance of some other similar operation. A preferred form of apparatus having this for its purpose is shown in the accompanying drawings, wherein—

Figure 1 is a side elevation; Fig. 2, a sectional plan taken on line 2—2 of Fig. 1; Fig. 3, a sectional view taken on line 3—3 of Fig. 1, looking in the direction of the arrows; Fig. 4, a fragmentary sectional view taken on line 4—4 of Fig. 3, looking in the direction of the arrows, and Fig. 5, a front elevation.

Like characters of reference indicate like parts in the several figures of the drawings.

Referring to the drawings, 10 designates the end of a can run of ordinary construction designed to sustain the cans in horizontal position, that is to say, with their longitudinal axes horizontal.

11 designates a table which, in the preferred form of apparatus shown, is stationary and which is designed to receive the cans in an upright position and to deliver them in that position to the rotating table 12. It will be understood that this particular arrangement for disposing of the cans after they have been turned from the horizontal position into the upright position is described simply for the purpose of illustrating one application of our invention. Extending through table 11 is a driving shaft 13 which, at its upper end, turns in a

bearing 14 sustained on the frame member 15. Arranged oblique to shaft 13 is a shaft 16 shown as turning, at its upper end, in a bearing 17 formed integral with bearing 14, and, at its lower end, in a bearing 18 formed on a bracket 19 connected with table 11 by the angle strap 20.

Rigid on shaft 16 is a circular carrier 21 having an oblique rim portion 22 making the carrier in effect a beveled wheel or disk. The rim portion 22 of the carrier is formed with a plurality of grooves or recesses 23 of a proper configuration and size to receive the sort of cans which the apparatus is designed to handle. Shaft 16 may be driven in any suitable manner as, for example, by means of the bevel gear 24 thereon which meshes with bevel gear 25 on shaft 13. In order to maintain the cans in position in the grooves or recesses 23 guiding or retaining devices are provided consisting of the curved strips 26, 27, the former arranged to support the bottom of the cans and the latter extending over the sides of the same. Strip 26 is secured to the table 11 by means of the bracket 28 and to the end of the can run 10 by the strap 29. Strip 27 is secured to the side of the can run by the angle bracket 30 and at the other end is sustained on the angular member 31 bolted to the table 11. The strips 26 and 27 may be secured together at suitable intervals by the angular straps 32.

In order to facilitate the discharge of the cans from the carrier 21 and their transfer to the rotating table 12, or other place of delivery, a rotating element is associated with table 11 which, as shown, consists of the two wheels 33, 33 rigidly secured to shaft 13 and formed with the curved recesses 34, as shown. The wheels 33 rotate in the opposite direction from carrier 21. At the delivery side of the wheels 33 is a curved guide strip 35 secured to angle brackets 36 bolted to the table 11.

The operation of the apparatus above described is as follows: The cans, designated A in the drawings, are fed down through the vertical can run 10, the cans being in the horizontal position shown particularly in Fig. 5, and are received one by one in the recesses 23 of the rotary carrier 21. Preferably the recesses are so formed that at this upper point of the carrier they are substan-

tially horizontal. As the carrier rotates the cans are turned into a substantially vertical position, being maintained on the carrier by means of the stationary guides 26, 27.

5 This turning of the cans from the horizontal position to the upright position is effected by a half rotation of the carrier and this brings the can in question down upon table 11 and into engagement with the recessed
10 rotary element 33 on shaft 13. The latter removes the can from the carrier and pushes it across table 11 in contact with the stationary guide 35.

It will be obvious also that certain
15 changes might be made in the form, construction and mechanical design of the devices embodying the invention. Therefore we do not limit ourselves to the particulars shown and described except so far as the
20 same are made specifically limitations on certain of the claims herein. While the machine is designed particularly for handling cans, has been so described and will be so claimed, it is obvious that it might be employed equally well for handling other articles of a similar character.

We claim:

1. In apparatus of the character described, the combination with means for sustaining the cans in a horizontal position, of
30 means sustaining the cans in an upright position, an oblique rotary carrier interposed between the same which receives the cans while in one of said positions and delivers
35 the same in the other position.

2. In apparatus of the character described, the combination with means for sustaining the cans in a horizontal position, of means sustaining the cans in an upright
40 position, an oblique rotary carrier interposed between the same which receives the cans while in one of said positions and delivers the same in the other position, and a recessed rotary element associated with the
45 means for supporting the cans in the upright position which coöperates with the carrier in handling the cans.

3. In apparatus of the character described, the combination with means for sustaining the cans in the horizontal position, of means for sustaining them in upright position, an oblique rotary carrier interposed
50 between the same, the edge of which is beveled and formed with can receiving grooves, and a recessed rotary element associated with the means for supporting the cans in the upright position which coöperates with
55 said carrier in handling the cans.

4. In apparatus of the character described, the combination with means for sustaining the cans in horizontal position, of means for sustaining them in upright position, an oblique rotary carrier interposed
60 between the same, the edge of which is beveled and formed with can receiving grooves, a
65 recessed rotary element associated with the

means for supporting the cans in the upright position, and a stationary guide adjacent said rotary element.

5. In apparatus of the character described, the combination with a can run in
70 which the cans are sustained in horizontal position, of a table designed to support the cans in upright position, an oblique rotary carrier interposed between the same and
75 formed with beveled edges and with can receiving grooves formed therein, and means for maintaining the cans in said grooves.

6. In apparatus of the character described, the combination with a can run in
80 which the cans are sustained in horizontal position, of a table designed to support the cans in upright position, an oblique rotary carrier interposed between the same and formed with beveled edges and with can
85 receiving grooves formed therein, means for maintaining the cans in said grooves, and a recessed rotary element on said table adapted to be driven in opposite direction from the carrier.

7. In apparatus of the character described, the combination with a can run in
90 which the cans are sustained in horizontal position, of a table designed to support the cans in upright position, an oblique rotary carrier interposed between the same and formed with beveled edges and with can receiving grooves formed therein, means for
95 maintaining the cans in said grooves, a recessed rotary element on said table adapted to be driven in opposite direction from the carrier, and a curved stationary guide on the table adjacent said rotary element.

8. In apparatus of the character described, the combination with a can run in
100 which the cans are sustained in horizontal position, of a circular rotary carrier arranged under the end of said can run so as to receive the cans therefrom, the axis of rotation of said carrier being oblique with
105 respect to the cans sustained thereon, and a horizontal receiving table arranged immediately below said carrier so as to receive the cans when turned into upright position.

9. In apparatus of the character described, the combination with a can run, of an oblique circular rotary carrier formed
110 with a beveled edge and with can receiving grooves in said edge, a stationary table arranged below the lower edge of said carrier, stationary guiding means which maintains the cans in the recesses in the carrier, a rotary element formed with recesses in its
115 perimeter into which the cans are received when delivered upon the table, means for driving said rotary element and said carrier in opposite directions, and a stationary guide on the table adjacent said rotary element.

10. In apparatus of the character described, the combination with a disk formed with recesses in its edge which are inclined with respect to the plane of said disk, means
5 for rotatably mounting the disk on an axis oblique to the vertical so that the uppermost recess is in substantially horizontal position while the lowermost takes a substantially vertical position, means for feeding
10 the cans into the recesses as the same come into their horizontal position, means for maintaining the cans in the recesses as the disk is rotated, and means for moving them from the recesses when they reach the
15 vertical position.

11. In apparatus of the character described, the combination with a disk formed with recesses on its edge which are inclined with respect to the plane of said disk, means
20 for rotatably mounting the disk on an axis oblique to the vertical so that the uppermost recess is in substantially horizontal position while the lowermost takes a substantially vertical position, means for feeding the cans
25 into the recesses as the same come into their horizontal position, means for maintaining the cans in the recesses as the disk is rotated, and a table arranged immediately below the lower edge of the disk adapted to receive
30 the cans in upright position.

12. In apparatus of the character described, the combination with a disk formed with recesses on its edge which are inclined with respect to the plane of said disk, means
35 for rotatably mounting the disk on an axis oblique to the vertical so that the uppermost recess is in substantially horizontal position while the lowermost takes a substantially vertical position, means for feeding
40 the cans into the recesses as the same

come into their horizontal position, means for maintaining the cans in the recesses as the disk is rotated, a table arranged immediately below the lower edge of the disk
45 adapted to receive the cans in upright position, and a notched wheel on said table which engages the cans as they are placed upon the table.

13. In apparatus of the character described, the combination with a rotary carrier
50 provided with circumferentially arranged means for sustaining a series of cans at an angle oblique to the axis of rotation of the carrier, of a rotary receiving element provided with circumferentially arranged
55 means for receiving the cans from the carrier which successively come into register with the can sustaining means on the carrier, the axis of rotation of the carrier being
oblique to the axis of rotation of the receiving element, and means for feeding the cans
60 to the carrier.

14. In apparatus of the character described, the combination with a table, of a disk obliquely arranged above the table and
65 formed with recesses in its edge which are inclined with respect to the plane of the disk, a shaft on which said disk is mounted, a shaft geared to the first mentioned shaft, and a receiving wheel on the second mentioned shaft arranged directly above the
70 table and formed with recesses which successively come into register with the recesses in the disk.

FREDRICK LESTER JEFFERIES.
WILLIAM SPAIN.

Witnesses:

F. M. SAYRE,
C. H. KELLING.