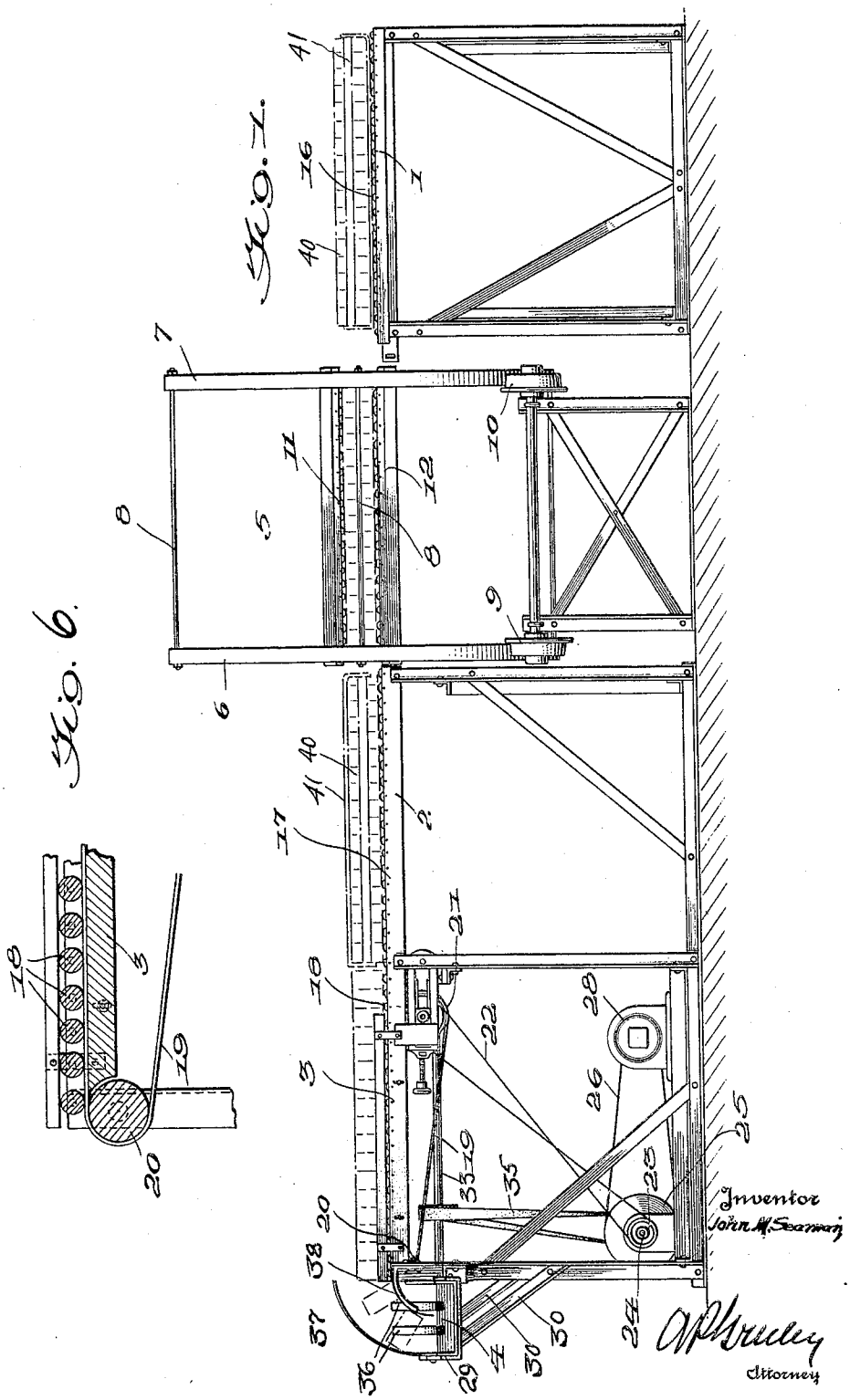
May 2, 1933. J. M. SEAMAN 1,907,189

APPARATUS FOR TRANSFERRING CANS

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APPARATUS FOR TRANSFERRING CANS

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Fig. 3.

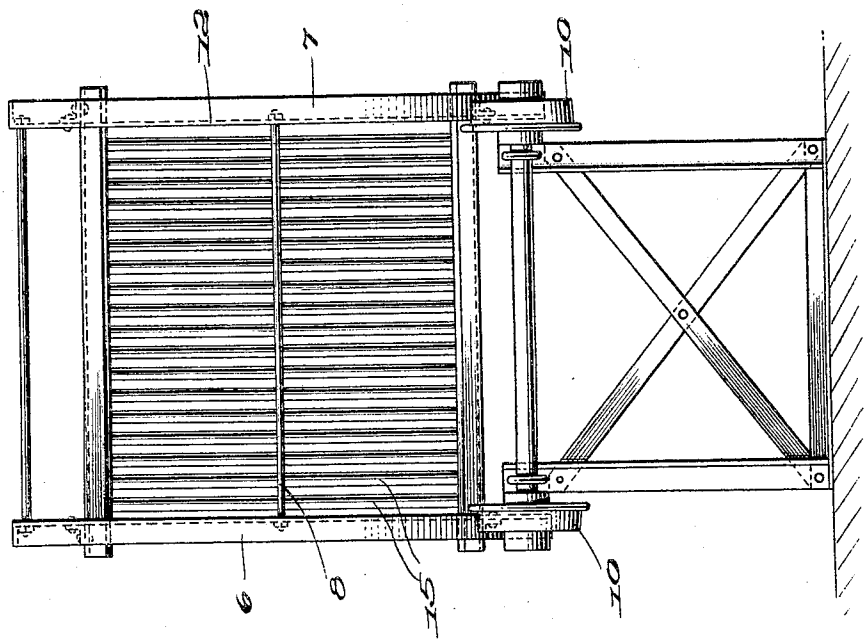
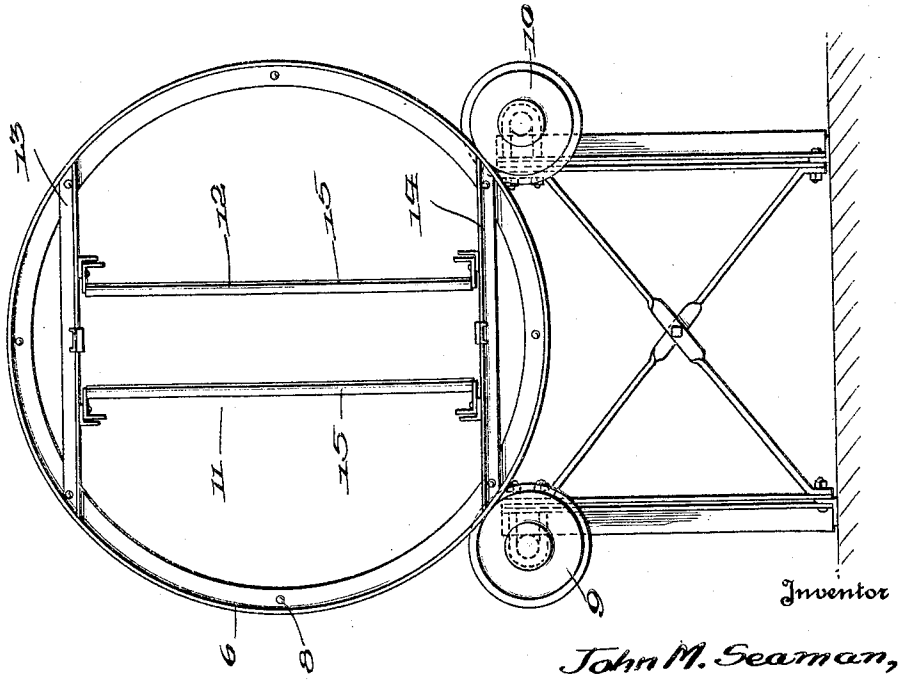


Fig. 2.



Inventor

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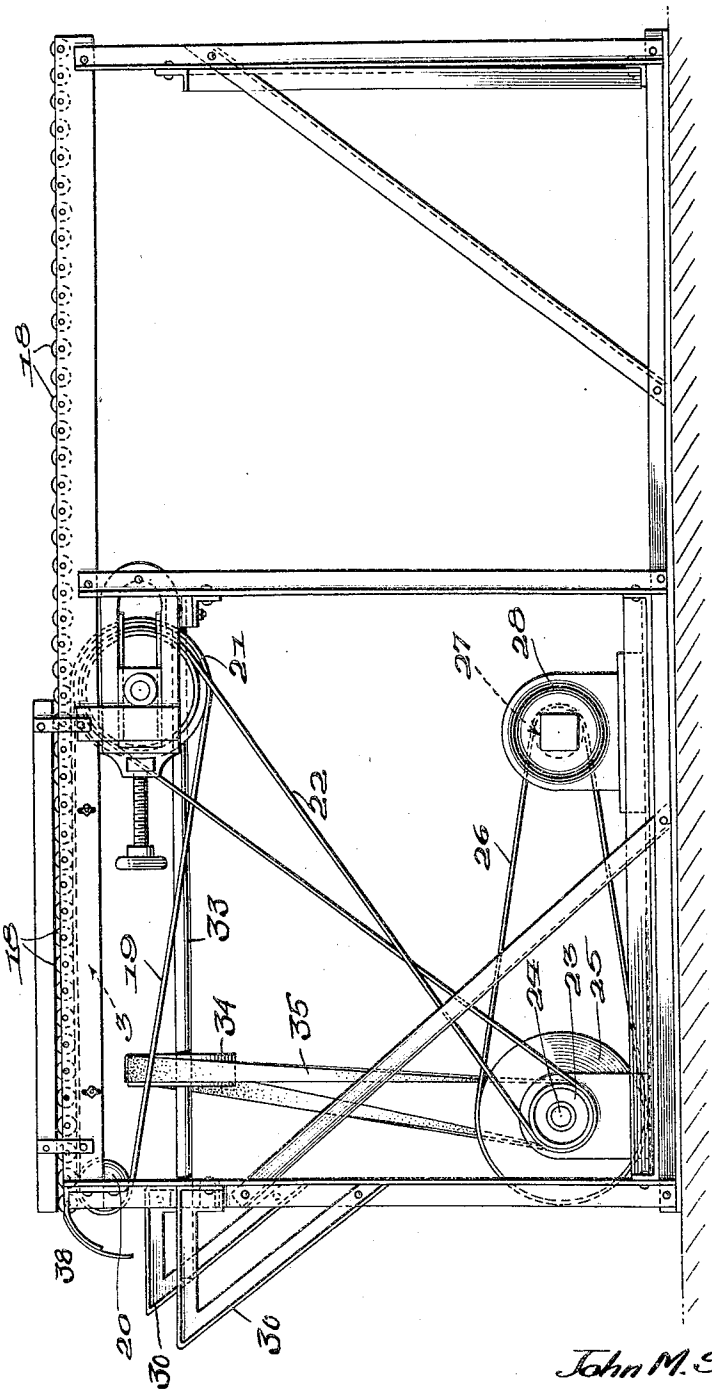
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APPARATUS FOR TRANSFERRING CANS

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Fig. 4.



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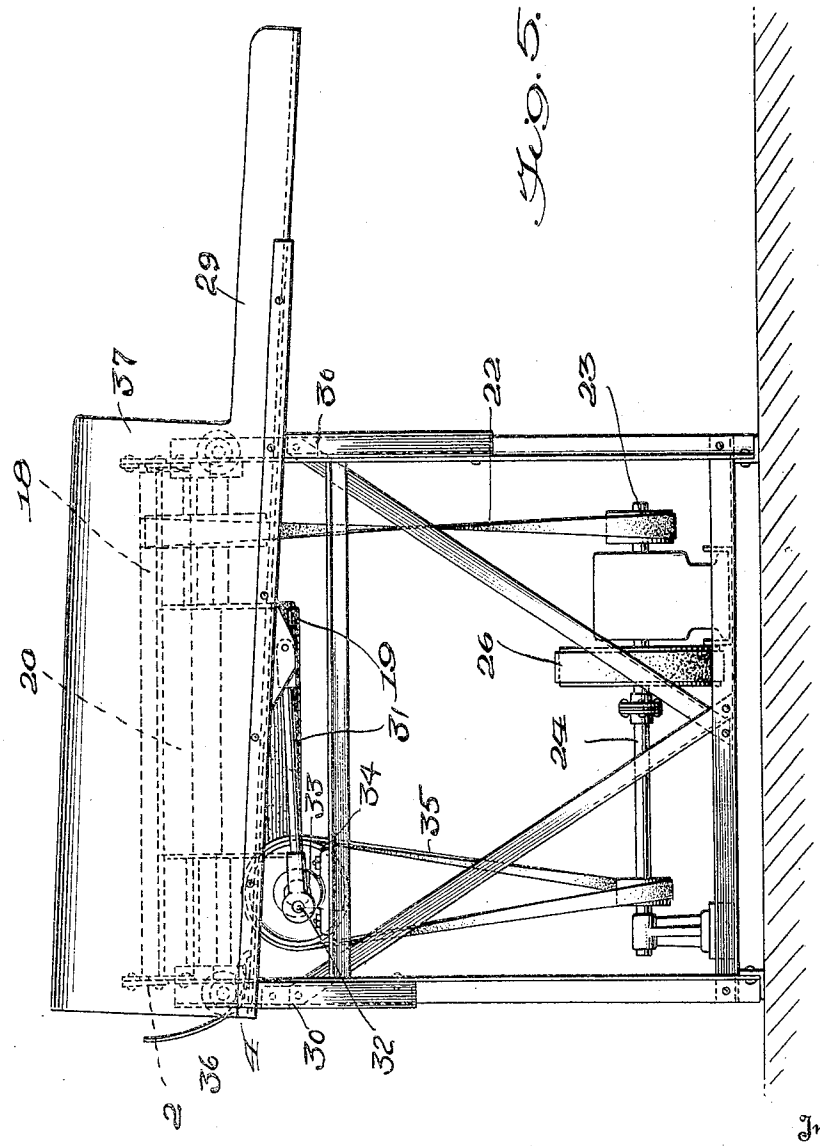
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May 2, 1933. J. M. SEAMAN 1,907,189

APPARATUS FOR TRANSFERRING CANS

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Fig. 5.



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Patented May 2, 1933 1,907,189

UNITED STATES PATENT OFFICE

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APPARATUS FOR TRANSFERRING CANS

Application filed March 16, 1931. Serial No. 523,089.

My invention relates to apparatus for transferring cans and has for its object to provide an apparatus adapted to receive a tray of filled cans in upright position as they come from the processing apparatus, and to invert the tray so that the tray may be lifted off and the cans may be fed forward as individual cans to means for turning them from upright to horizontal position to be deposited in a chute by which they may be fed to a casing machine to be packed in cartons or boxes.

It is usual in processing filled cans to assemble them in upright position in a tray or basket and to pass them through the processing apparatus so assembled in the tray, and it is usual in packing or casing the cans to present them as individual cans to the casing machine. It is therefore necessary to get the cans out of the tray before they reach the casing machine. To do this by hand would be slow and expensive if the cans were cool and as the cans coming from the processing apparatus are necessarily quite highly heated their removal from the trays is particularly slow and expensive.

It is the object of my invention to provide means by which the trays of cans, without waiting for them to cool and without handling of individual cans may be inverted so that the tray may be lifted off without disturbing the assembled cans and the assembled cans may be moved together to be turned on their sides in position to be received by a casing machine. It is a further object of my invention to provide means for transferring cans which will be simple, inexpensive and efficient.

With the objects above indicated and other objects hereinafter explained in view, my invention consists in the construction and combination of elements hereinafter described and claimed.

Referring to the drawings:

Figure 1 is a side view of the device for transferring cans embodying my invention.

Figure 2 is a vertical, sectional view on a plane midway between the rims of the rotatable cage showing the tray supporting frames in vertical position.

Figure 3 is a side view of the construction shown in Figure 2.

Figure 4 is a side view of the live roller section of the transfer table showing the operating means for the rollers.

Figure 5 is an end view showing the chute at the end of the second section of the transfer table, and

Figure 6 is a detail sectional view showing the belt for operating the rollers of the second section of the transfer table.

In the drawings 1 indicates a receiving table, 2 indicates the dead roller section of a transfer table, 3 indicates the live roller section of the transfer table and 4 indicates a delivery chute at the delivery end of the live roller section of the transfer table. The receiving table and the two sections of the transfer table are supported at the same horizontal level by a framework consisting of suitable legs and braces.

Between the receiving table 1 and the transfer table 2 is arranged a rotatable cage 5 comprising circular rims 6 and 7 connected together by rods 8. The rims 6 and 7 are supported on pairs of rollers 9 and 10 which permit the cage to rotate freely and these supporting rollers are so located that the axis on which the cage rotates is above the horizontal plane of tables 1 and 2 by a distance slightly more than one-half the height of the cans which are to be transferred.

Between rims 6 and 7 is arranged a pair of frames 11 and 12 carried by pairs of brace rods 13 and 14. These frames are spaced apart a distance slightly greater than the height of the cans to be transferred and are arranged in planes equally distant from the axis on which the cage rotates and each frame carries a series of rollers 15 extending at right angles to the axis of the cage and so mounted as to be freely rotatable.

The receiving table 1 and the first section 2 of the transfer table are provided respectively with a series of rollers 16 and 17 so journalled in the side bars of these tables as to be freely rotatable and may be termed "dead" rollers to distinguish them from the

driven rollers of the second section 3 of the transfer table.

In the side bars of this second section 3 of the transfer table are journalled a series of rollers 18 and these, which may be termed "live" rollers are arranged to be rotated by an endless belt 19 carried by fixed roller 20 and adjustably mounted roller 21, this roller 21 being arranged to be rotated by belt 22 from a pulley 23 on a shaft 24 suitably mounted in the supporting frame of the transfer table, a pulley 25 on shaft 24 being driven by belt 26 from a pulley 27 on the shaft of a motor 28.

Across the delivery end of section 3 of the transfer table is arranged an inclined chute 29 supported on brackets 30. This chute is arranged to be reciprocated by a pitman 31 pivotally connected at one end to the under face of the chute and, at its other end, carried by a crank pin 32 on a shaft 33 on which is mounted a pulley 34 driven by belt 35 from a pulley on shaft 24 which is driven by motor 27. At its higher end this chute is provided with upwardly extending curved rods 36 adapted to prevent cans from rolling off the higher end of the chute. To the outer edge of the chute is secured a deflector plate 37 extending upward and towards the transfer table. To the edge of the delivery end of the transfer table is secured a deflector plate 38 extending outward and downward curved to correspond with the curve of deflector plate 37, the deflector plates 37 and 38 are so arranged that as the cans in the movement caused by the live roller 18 of the transfer table reach the delivery edge of the transfer table their contact with these deflector plates will cause them to assume a horizontal or rolling position on the bottom of the chute.

The cams 40 previously filled and processed are delivered from the processing apparatus into trays 41, these trays consisting of flat metal baskets in which the cans stand upright. One of these trays is placed on receiving table 1 resting on rollers 16. The rotatable cage is then rotated so as to bring one of its frames 11 or 12 into horizontal alignment with the surface of receiving table 1. The tray is then pushed into the space between frame 11 and 12 and rests on one of the frames, say on frame 11. The cage is then rotated about half a rotation so as to bring frame 12 in horizontal alignment with the surface of the first section 2 of the transfer table. This, of course, reverses the tray and cans, leaving the tray resting upon them. The tray and cans are then pushed out on to this first section of the transfer table and the tray is lifted off leaving the cans standing upright on the dead rollers of the first section 2. The cans are then pushed onto the live rollers of the second section 3 of the transfer table and are moved forward by the live rollers and eventually reach the edge of the table and fall over into chute 29, their contact with deflector plate 37 causing them to fall on their sides onto the tray so that they will roll down the chute, their progress being accelerated by the movement of the chute.

Having thus described my invention what I claim is:

1. In a device for transferring cans a receiving table adapted to receive a tray of cans, a transfer table having its top in the same horizontal plane with the top of the receiving table, and a cage rotatable on an axis in line with the receiving and transfer tables arranged between the receiving table and the transfer table comprising a pair of frames each adapted to suport a tray of cans extending across the cage parallel with its axis and respectively one above and the other below the axis spaced apart a distance slightly greater than the height of a can so as to form a passage for the tray extending axially of the cage, and means for so supporting the cage that said frames will upon rotation of the cage be brought successively into the horizontal plane of the tables.

2. In a device for transferring cans a receiving table adapted to receive a tray of cans, a transfer table having its top in the same horizontal plane with the top of the receiving table, and a cage rotatable on an axis in line with the receiving and transfer tables arranged between the receiving table and the transfer table comprising a pair of frames each adapted to support a tray of cans extending across the cage parallel with its axis and respectively one above and the other below the axis spaced apart a distance slightly greater than the height of a can so as to form a passage for the tray extending axially of the cage, rollers carried by said frames and means for so supporting the cage that said frames will upon rotation of the cage be brought successively into the horizontal plane of the tables.

3. In a device for transferring cans a receiving table adapted to receive a tray of cans, a transfer table having its top in the same horizontal plane with the top of the receiving table, and a cage rotatable on an axis in line with the receiving and transfer tables arranged between the receiving table and the transfer table comprising a pair of frames each adapted to support a tray of cans extending across the cage parallel with its axis and respectively one above and the other below the axis spaced apart a distance slightly greater than the height of a can so as to form a passage for the tray extending axially of the cage and means for so supporting the cage that said frames will upon rotation of the cage be brought suc-

cessively into the horizontal plane of the tables, means carried by the transfer table for advancing the cans and a chute at the delivery end of the transfer table adapted to receive the cans.

4. In a device for transferring cans a receiving table adapted to receive a tray of cans, a transfer table having its top in the same horizontal plane with the top of the receiving table, and a cage rotatable on an axis in line with the receiving and transfer tables arranged between the receiving table and the transfer table comprising a pair of frames each adapted to support a tray of cans extending across the cage parallel with its axis and respectively one above and the other below the plane spaced apart a distance slightly greater than the height of a can so as to form a passage for the tray extending axially of the cage and means for so supporting the cage that said frames will upon rotation of the cage be brought successively into the horizontal plane of the tables, means carried by the transfer table for advancing the cans and a chute at the delivery end of the transfer table adapted to receive the cans, and means by the chute for causing the cans to be so turned that their axis will be horizontal.

5. In a device for transferring cans a receiving table adapted to receive a tray of cans, a transfer table having its top in the same horizontal plane with the top of the receiving table, the transfer table comprising a section provided with freely rotatable rollers and a second section provided with driven rollers and a cage rotatable on an axis at right angles to the axis of the rollers of the transfer table arranged between the receiving table and the transfer table comprising a pair of frames each adapted to support a tray of cans extending across the cage parallel with its axis and respectively one above and the other below the axis spaced apart a distance slightly greater than the height of a can so as to form a passage for the tray extending axially of the cage and means for so supporting the cage that said frames will upon rotation of the cage be brought successively into the horizontal plane of the tops of the tables.

6. In a device for transferring cans a receiving table adapted to receive a tray of cans, a transfer table having its top in the same horizontal plane with the top of the receiving table, and a cage rotatable on an axis in line with the receiving and transfer tables arranged between the receiving table and the transfer table comprising a pair of frames each adapted to support a tray of cans extending across the cage parallel with its axis and respectively one above and the other below the axis spaced apart a distance slightly greater than the height of a can so as to form a passage for the tray extending axially of the cage and circular rims carrying the pair of frames and means for so supporting the circular rims that said frames will upon rotation of the cage be brought successively into the horizontal plane of the tops of the tables.

In testimony whereof, I hereunto affix my signature.

JOHN M. SEAMAN.