

Nov. 10, 1936.

F. H. DELLAREE

2,060,182

PICK-UP AND FEEDING DEVICE

Filed May 1, 1936

3 Sheets-Sheet 1

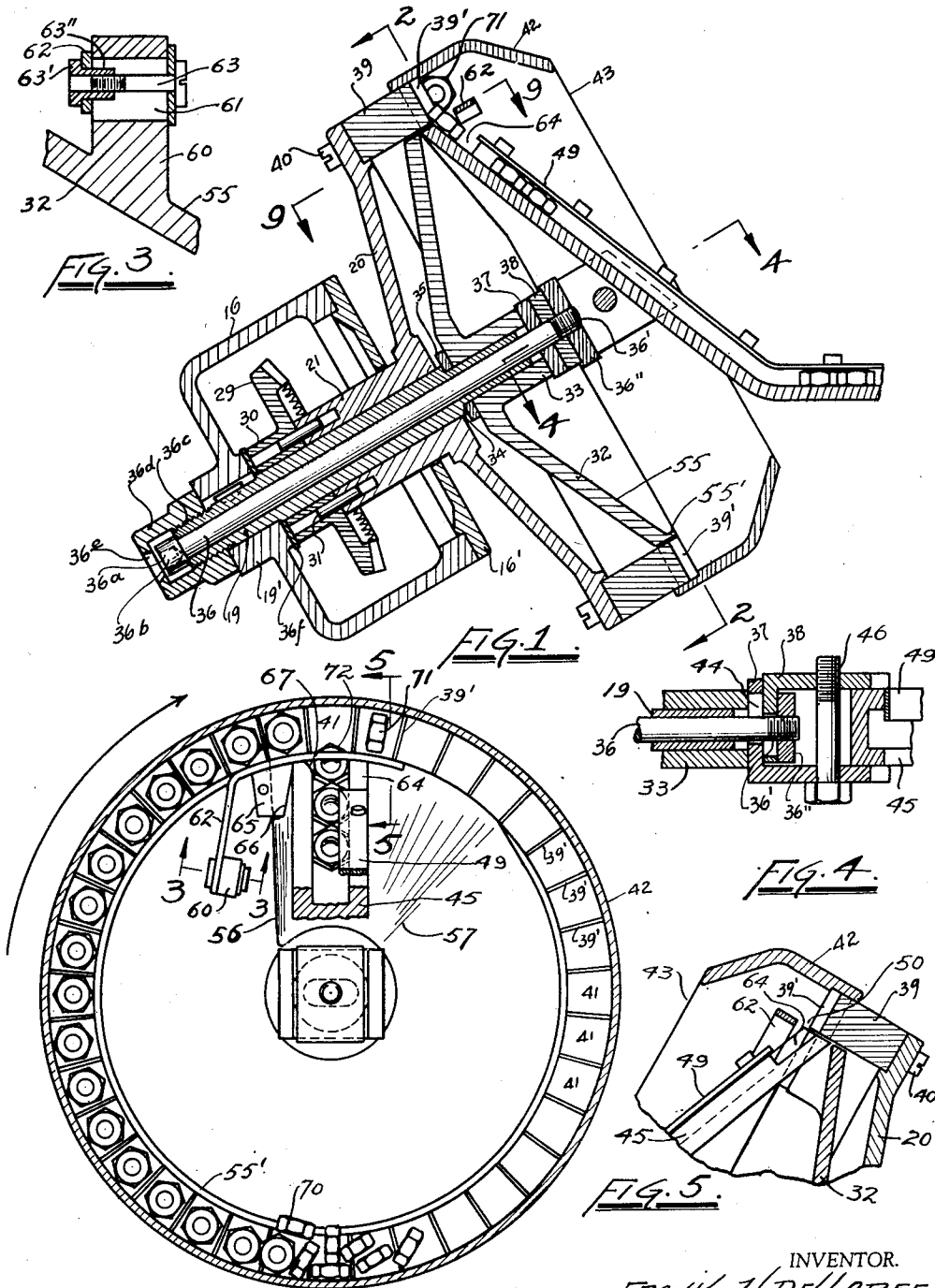


FIG. 2.

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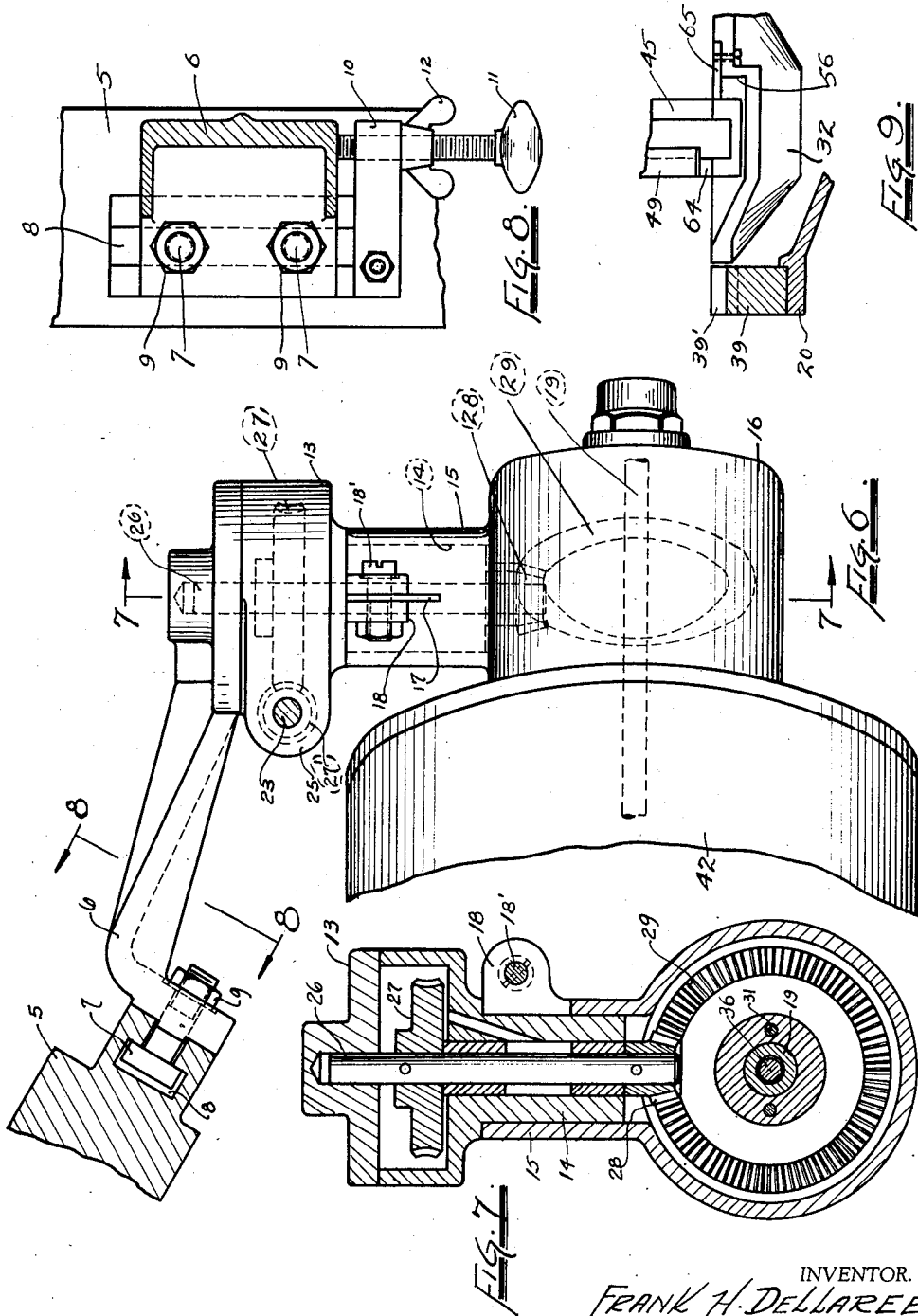
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

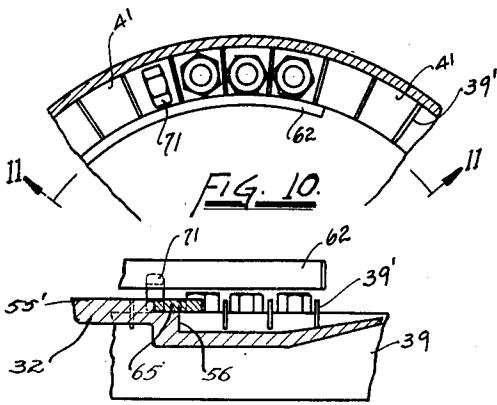


FIG. 11.

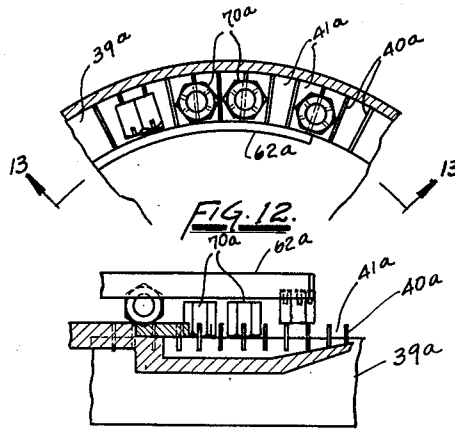


FIG. 13.

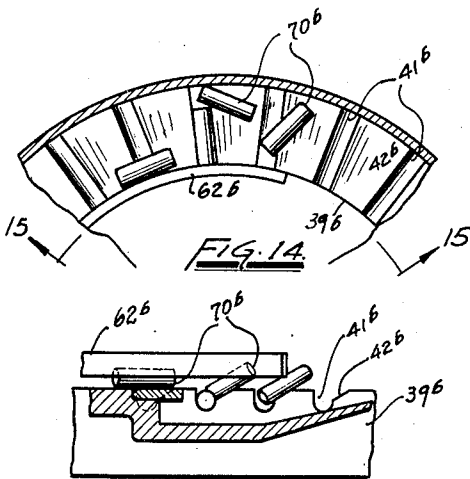


FIG. 15.

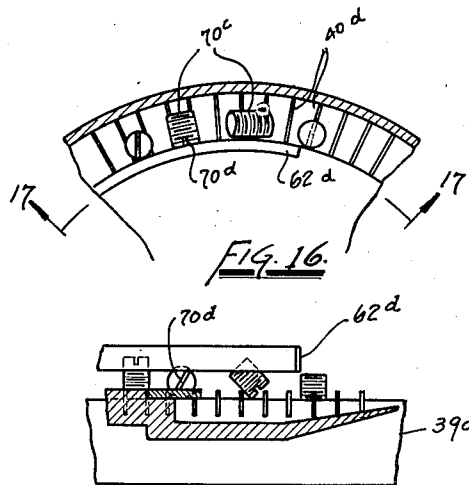


FIG. 17.

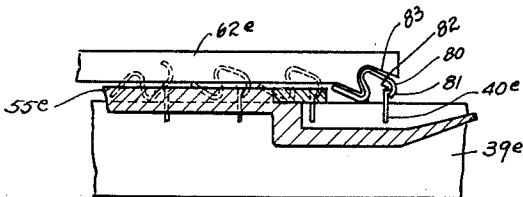


FIG. 18.

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UNITED STATES PATENT OFFICE

2,060,182

PICK-UP AND FEEDING DEVICE

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Application May 1, 1936, Serial No. 77,403

14 Claims. (Cl. 10—169)

The present invention pertains to a novel device for picking up articles out of a mass and delivering them in a desired or predetermined position to a point of assembly. The invention resides in improvements of the device forming the subject matter of my United States Patent No. 2,205,273 of December 24, 1935.

In this patent the invention is disclosed as a pick-up device for screws, the heads of the screws being utilized for the positioning and delivery operations. In the present invention, the previously patented machine is modified for handling articles other than screws or headed members.

The invention includes a rotary collector ring for picking the articles from a mass and delivering them to a track, but the articles find their way to the bottom of slots in the ring rather than hang in the slots as disclosed in the patent. In conjunction with the receiving end of the delivery track, there is a fixed guard lying over the adjacent ring slots and so mounted as to hold back all articles that do not assume a predetermined position in the ring. In other words, only those articles taking the desired delivery position are permitted to pass to the track. While many articles are barred and then returned to the mass the device is so constructed and operated that the percentage of articles passed is sufficient for operating purposes. The collector ring and guard are so constructed and related to each other that an article will not be passed unless it lies on a given surface or unless a projection from the ring is received in an opening in the article or unless both of these requirements are fulfilled. For example, the lower edge of the guard directly above the receiving end of the track may be specially shaped to match and clear only an article engaged with a projection from the ring and thereby held in a given position.

The collector ring rotates about a fixed member that closes the inner ends of the slots except at the trough of the delivery track. This closing is obtained by means of an edge of the fixed member which is continuous with a side of the track up to its trough, to provide an unbroken riding surface. However, the fixed member is rotatably adjustable to shift the point of contact between the edge and the track when various track widths are used. The invention provides a special member that maintains the desired unbroken riding surface in all adjustments of the track.

Another object of the invention is to provide for the overflow of properly positioned articles when the track is filled, for otherwise an article may pass part way into a nearly filled track and

thereby break a part of the machine. Provision for overflow is made by relieving the upper end of the track in the side thereof that is more remote with reference to the direction of rotation of the collector ring. The length of the release lengthwise of the track is somewhat in excess of the length of a properly positioned article in the same direction.

The invention is fully disclosed by way of example in the following description and in the accompanying drawings in which—

Figure 1 is a vertical section of the device;

Figures 2 and 4 are sections on the lines 2—2 and 4—4 respectively of Figure 1;

Figures 3 and 5 are sections on the lines 3—3 and 5—5 respectively of Figure 2;

Figure 6 is a plan view;

Figures 7 and 8 are sections on the lines 7—7 and 8—8 respectively of Figure 6;

Figure 9 is a section on the line 9—9 of Figure 1;

Figure 10 is a fragmentary elevation of the collector ring;

Figure 11 is a section on the line 11—11 of Figure 10;

Figure 12 is a fragmentary elevation of a different form of collector ring;

Figure 13 is a section on the line 13—13 of Figure 12;

Figure 14 is a fragmentary elevation of still another form of collector ring;

Figure 15 is a section on the line 15—15 of Figure 14;

Figure 16 is a fragmentary elevation of another modification of collector ring;

Figure 17 is a section on the line 17—17 of Figure 16, and

Figure 18 is a similar section of another collector ring, showing the guard in elevation.

Reference to these views will now be made by use of like characters which are employed to designate corresponding parts throughout.

As previously indicated, the machine described herein is a modification of the machine disclosed in my United States Patent No. 2,025,273 of December 24, 1935. As far as practicable, the same numerals will be used here as in the patent.

In Figures 6 and 8, the numeral 5 designates the main support or column of the machine. One end of an arm or bracket 6 carries headed bolts 7 received in a key track 8 and is secured in the desired adjustment by tightening the nuts 9. To aid in adjusting the bracket 6 upward, a lug 10 is fastened to the column 5 and receives an inverted thumb screw 11 engaging the bottom

of the member 6, as shown in Figure 6. Turning the screw in one direction raises the bracket 6 and the assembled mechanism carried directly or indirectly thereby. After the adjustment has been made, a wing nut 12 on the screw 11 is tightened against the bottom of the lug 10.

To the outer or free end of the bracket 6 is secured a worm gear housing 13 from which extends a boss 14 in the axial direction and is disposed on that side of the bracket 6 at which the driving spindle assembly is located. Over this boss is slipped another boss 15 extending from a gear housing 16. The boss 15 has a lengthwise split 17 with a lug 18 at each side and a tightening bolt 18' passed through the lugs. When the bolt 18' is loose, the boss 15 with its housing 16 can be adjusted around the axes of the bosses. Tightening the bolts secures the proper adjustment.

It will be seen in Figure 1 that the housing 16 is cylindrical and on an axis perpendicular to that of the bosses, the axis of the housing sloping upward in the direction toward the spindle assembly. In this axis is mounted a fixed sleeve having one end keyed in a bearing 19' formed on the rear end wall of the housing 16. This sleeve extends some distance beyond the forward end wall 16' of the housing 16 and carries an external disk 20 having a hub 21 rotatably mounted on the shaft 19 and extending into the housing 16.

The operation of the pick-up mechanism requires rotation of the disk 20, and the mechanism for effecting such rotation will now be described. The vertical shaft 23 shown in Figure 6, may be considered the power shaft of the machine and is supported and driven in any suitable manner, for example, as illustrated, in the previously mentioned patent. This shaft enters a bearing 25 formed on the worm gear housing 13. A horizontal counter-shaft 26 has one end mounted near the free end of the bracket 6 and, after passing axially through the housing 13 and bosses 14, 15, has its other end just entering the housing 16. Within the housing 13, the shaft 26 carries a worm gear 27 meshing with a worm 27' carried by the shaft 23 within the bearing 25. Within the housing 16, the shaft 26 carries a miter pinion 28 meshing with a miter gear 29 having a hub 30 rotatable on the fixed sleeve 19 as may be seen in Figure 1. Pins 31 extend from the hub 30 into the hub 21 and cause the disk 20 to rotate with the gear 29.

The disk 20 is slightly dished, and at the concave side thereof is mounted a baffle plate 32 by means of a hub 33 thereof fitted on the forward or upper end of sleeve 19. This end of the sleeve 19 is reduced to form a shoulder 34 between the disk 20 and plate 32, and a washer 35 is inserted between the shoulder and the plate.

A long pin 36 is mounted in the sleeve 19 and projects beyond both ends thereof. The end projecting beyond the hub 33 receives two clamp sections 37 and 38, to be described more fully below and is threaded at 36' to receive a clamping nut 36'' for the clamp sections. The other end of the pin 36 is formed with a head 36A bearing against the adjacent end of the sleeve 19 and having a wrench socket 36B. The last named end of the sleeve 19 is threaded at 36C to receive a cap 36D tightened against the bearing 19'. The cap has an opening 36E for entry of a wrench into the socket 36B. By turning the pin 36 with a wrench, the nut 36' is tightened against the clamp sections 37 and 38, the nut itself being inaccessible for tightening because of its position between the

clamp sections as shown in Figure 4. A bearing washer 36F is inserted between the bearing 19' and hub 30. The elevation of the baffle plate 32 on the incline of sleeve 19 may be adjusted, if necessary, by replacing the washer 35 with one of a different thickness.

To the rim of the disk 20 is detachably fastened a collector ring 39 by means of screws 40. In the face of the ring are inserted equidistant fins or blades 39 lying radially and forming slots or spaces 41. The width of each space is slightly greater than the diagonal of the nut to be handled, as shown in Figures 10 and 11. The formation of the slots or spaces by means of fins is merely a preferred construction, as the side walls of the slots may be formed in the casting or machining of the collector ring if desired.

Over the outer wall of the collector ring 39 is fitted and secured a hood 42 having a comparatively large central opening 43 so that it constitutes a receptacle or hopper for the articles to be handled, as clearly illustrated in Figures 1 and 2. The opening 43 permits replenishment of the supply of articles in the receptacle and also to accommodate the delivery track presently to be described, as well as permits access to certain parts of the mechanism for assembly, adjustment and dismantling, as will be described in detail below.

The clamp sections 37 and 38 are of L-shape and slotted at 44 in the shorter leg, these legs being superimposed one on the other to form a U-shaped clamp and a through opening for the pin 36 as shown more clearly in Figure 4. The clamp serves to receive and support a delivery track in the form of a channel member 45, and the clamp sections are firmly secured to the track by a bolt 46 passed through the sides of the clamp.

The base angle of the inner surface 55 of the conical baffle plate 32 is for the most part uniform. The periphery of this plate with its extended lip 55' covers the inner ends of the slots 41. However, the surface 55 has an abrupt step 56 on a radial line, as shown in Figures 2 and 9, changing the angle of the inner conical surface. From the bottom of the step, where the base angle is smallest, it increases gradually to the angle of the main surface 55 at the line 57 in Figure 2. The step and the deformed surface from the bottom of the step to the point where the maximum base angle is reached, are of such extent as to uncover the inner ends of slots 41 along approximately ten degrees of the collector ring circumference, as shown in Figure 2, for a purpose to be described in detail below.

A lug 60 projects outward from the conical surface 55 near the periphery thereof at a distance of about 45 degrees from the track in the counter-rotational direction. This member has a slot 61 formed lengthwise therein or parallel to the axis of the conical surface. A baffle strip 62, of spring metal, if necessary, is held to the lug 60 by means of a bolt 63 and headed nut 63' in the slot 61, whereby the member 62 may be adjustably secured at a desired distance from the face of the collector ring 39. The nut has a rectangular body 63'' fitted in the strip 62 and in the slot so that there is no relative turning of these parts. The member 62 crosses a few of the slots 41 near the upper end of the track 45, including that slot which is directly over the upper end of the track. In this connection it is to be recalled that the collector ring rotates while the baffle plate 32 and baffle 62 remain stationary.

The upper end of the track 45 is notched or recessed at 64 in the side thereof that is more remote in the direction of rotation of the collector ring. The length of this recess along the track 5 is about one and one-half times the dimension of the article being handled, in the same direction, to permit overflow from the track to the receptacle 42 in a manner that will appear more fully hereinafter. On one of the walls of the track is attached a guard 49 overlapping the trough of the track to prevent the articles in the track from piling up one on another.

A small metal wedge-shaped member 64 is fitted and fastened against the conical surface 55 near the periphery thereof and crossing the abrupt step 56 which lies at the approach side of the track 45, that is, the side at which the collector ring approaches the track in its rotation. The top of the member 65 lies close to the inner circumference of the collector ring 39, the lip 55' being interrupted to permit this position of the member 65. The side 66 of member 65 facing the track is a finished surface and slopes downwardly away from the track for a purpose that will presently be described.

Operation

Figures 10 and 11 are details illustrating the operation of the machine when used for delivering hexagonal nuts as shown in Figures 1 and 2. The nuts 70 which are to be transferred by the track to the point of assembly are merely thrown into the receptacle 42 through the opening 43, whereby they lie in a mass against the face of the collector ring 39 at the lower portion thereof. The rotation of the ring 39 causes a tumbling action of the nuts so that some of them fall in various positions into the slots 41. The nuts picked up by the ring, at least those lying flat, are prevented by the lip 55' from falling out of the slots while ascending. Further, these nuts cannot drop until crossing the top of the member 65.

Beyond the member 65, the baffle strip or guard 45 62 extends across the upper end of the track 45 for some distance and is spaced from the face of ring 39, as indicated by the numeral 50 in Figure 11, a distance greater than the thickness of the nuts and smaller than the width thereof. Consequently, when a nut lying flat passes the member 65, it is in a position to slide out of its slot 41. The trough of the track 45 is positioned to receive this emerging nut and deliver it to the point of assembly. If desired, the upper end of the track may be rounded at 67 (Figure 2) on the approach side so that the emerging nut starts its escape from the collector ring earlier by rolling on the rounded corner.

A nut that has been improperly picked up by the collector ring, such as the nut 71 (Figures 10 and 11) standing on one of its facets, rides on the guard 62 and cannot pass through the space 50 to the track. Consequently, it rides to the free end of the guard, as also shown in Figure 2, and then drops back into the hopper 42.

At the lower end of the track 65 is a suitable escapement mechanism (not shown) for releasing the nuts at a timed rate to the point of assembly. The guard 49 prevents overlapping of nuts that may accumulate in the track. The track may become loaded until there remains at its upper end a space not large enough to receive a nut completely, whereupon a nut may drop into this space and remain partly in its slot 41, as is the case of the nut 72 in Figure 2. This nut will

be carried through the recess 64 and permitted to drop back into the hopper instead of breaking one of the blades 39'.

Adjustment

Different articles to be handled require different collector rings and tracks. Preferably, the proper track is provided with each collector ring. The tracks are of varying depth and width. For the larger widths, the plate 32 may require adjustment in the counter-rotational direction to permit the step 56 to clear the approach side wall of the track. This adjustment becomes possible on loosening the nut 36'. Also, the depth of the surface between the step 56 and the line 57 is 15 such as to accommodate various widths and depths of tracks used with particular plates 32, in the various pitch adjustments of the track in the clamp sections 37 and 38.

In keeping with the adjustments already mentioned, other adjustments in the position of the collector ring 39 may be necessary for articles of different sizes and weights. Accordingly, the rotating assembly including the disk 20 and ring 39 is adjustable in height by manipulation of the screw 11 in Figure 8, and adjustable in slope by turning the boss 15 on its axis after loosening the bolt 18' as illustrated in Figure 4.

The finished surface 66 of the member 65 makes contact with the adjacent wall of the track 30 at the upper end of this surface to form a smooth continuation of the lip 55' up to the trough of the track, thereby avoiding any crack or crevice in which the articles being handled may be caught. The slope of the surface 66 provides for contact at the point named even in extreme adjustments of the plate 32 in the counter-rotational direction. Also, the surface 66 being machined or finished, has no projections that might be engaged by the track in extreme adjustments of the plate 32 and thereby leave a crack or crevice between the upper end of surface 66 and the track. The upper end of the track, especially on the approach side, is also curved in continuation of the riding surface presented by the lip 55' and 45 the top of the member 65.

The previously mentioned adjustability of the guard 62 in the slot 61 permits variation in the height of space 50 for articles of various thickness. The resiliency of the guard 62 permits it to yield under the action of irregular accumulations of articles in the slots above the guard, when such accumulations might otherwise break a rigid part of the machine.

Since a separate track is preferably provided 55 for each collector ring 39, the tracks often varying in width, the capacity of the clamp section 37 and 38 is correspondingly adjustable by virtue of the slot 44 therein. For extreme track widths, different clamping members may of course be provided. Figures 12 and 13 illustrate a modified construction for handling castle nuts and feeding them top downward to the track or chute. The slots 41A in the face of the ring, formed by blades, fins or other walls 40a are slightly greater 65 in width than half the diagonal of the nuts being handled. The guard 62a is so spaced from the ring 39a as to clear only those nuts that have received one of the fins 40a in one of its castle slots, such as the nuts 70a. It is evident from a consideration of Figure 13 that nuts taking any other position are carried beyond the track or chute to the free end of the guard 60a from which they return to the hopper.

Figures 14 and 15 illustrate an arrangement for 75

handling pins or rods. The collector ring 39b has grooves 41b formed radially in its face adapted to receive the pins. A wall of each groove slopes at 42b to the face of the ring. The guard 62b is spaced from the face of the ring less than the diameter of the articles 70b being handled. Unless an article is fairly well seated in a groove, it cannot pass beneath the guard to the chute. Those lying wholly upon the face of the ring or on a slope 42b at more than a limited angle to the radius will not pass. The slope permits a greater percentage of pins to adjust themselves to proper position for transfer to the chute.

The construction shown in Figures 16 and 17 handles threaded studs 70c in the same manner that the castle nuts are handled in Figures 12 and 13. Each stud has a screw driver slot 70d in one end, and it is desired to feed the studs with this end downward. The fins 40d in the ring 39d are spaced apart a distance slightly more than the radius of the stud. The guard 62d is at such a distance from the face of the ring 39d as to pass only those studs that receive a fin 40d in its slot.

The applicability of the invention to the feeding of diverse shapes is illustrated in Figure 18. The article selected as an example is a sheet metal member 80 having a somewhat S-shape and designed to be used as a clip. One edge of the member is hooked at 81, and it is desired to feed the members endwise with the hook always at the same side of the track. As in the previous construction, the lip 55' or 55e of the stationary baffle plate 32 retains the articles in the collection ring until they reach the clearance at the discharge end of the guard 62—62E.

The collector ring 39E has fins 40E hooked at 82 to engage the hook 81 of a member 80 lying in the proper position for feeding. The engagement of the hooks also prevents the member 80 from falling out of proper feeding position. In line with the track or chute, the guard 62E has an irregular lower edge 83 adapted to mesh in or match with the upper surface of a member 80 lying in the proper position for feeding. The engagement of the hooks also prevents the member 80 from falling out of proper feeding position. In line with the track or chute, the guard 62E has an irregular lower edge 83 adapted to mesh in or match with the upper surface of a member 80 lying in the proper feeding position. Otherwise, the guard 62E is spaced rather closely to the face of the ring 39E, and only those members 80 that take the desired feeding position are permitted to pass through to the track. Articles of various shapes may be transferred to the track or chute in a given desired position by shaping the lower edge of the guard directly above the track, to conform to the shape of the upper surface of a member when in the desired position, so that only the members in that position are permitted to pass beneath the guard to the track. The shaped edge 83 of the guard prevents the articles from swinging around the free end of the guard, as would be the case of this end even square.

Although specific embodiments of the invention have been illustrated and described, it will be understood that various alterations in the details of construction may be made without departing from the scope of the invention, as indicated by the appended claims.

What I claim is:

1. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner

circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its receiving end positioned at or slightly below the bottom of one of the uppermost slots and substantially in contact with the ring, whereby to receive articles directly from the bottom of said slot, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member obstructing the inner ends of said slots with the exception of a few, including the aforesaid slot, near the receiving end of said track, a receptacle at the face of said ring, the upper end of said track having its side wall relieved on the more remote side in the direction of rotation a distance at least equal to the length of the article being handled, to permit articles dropping from said ring to overflow when said track is filled.

2. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its receiving end positioned at or slightly below the bottom of one of the uppermost slots and substantially in contact with the ring, whereby to receive articles directly from the bottom of said slot, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member obstructing the inner ends of said slots with the exception of a few, including the aforesaid slot, near the receiving end of said track, a receptacle at the face of said ring and adapted to deliver articles into said slots at the face of said ring, and a guard crossing the faces of some of said slots near the approach side of said track, including the slot communicating with the track, and spaced from the bottom plane of said slots a distance approximating the thickness of the article being handled.

3. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its receiving end positioned at or slightly below the bottom of one of the uppermost slots and substantially in contact with the ring, whereby to receive articles directly from the bottom of said slot, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member obstructing the inner ends of said slots with the exception of a few, including the aforesaid slot, near the receiving end of said track, a receptacle at the face of said ring and adapted to deliver articles into said slots at the face of said ring, the upper end of said track having its side wall relieved on the more remote side in the direction of rotation a distance at least equal to the length of the article being handled, to permit articles dropping from said ring to overflow when said track is filled, and a guard crossing the faces of some of said slots near the approach side of said track, including the slot communicating with the track, and spaced from the bottom plane of said slots a distance approximating the thickness of the article being handled.

4. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its receiving end positioned at or slightly

below the bottom of one of the uppermost slots and substantially in contact with the ring, whereby to receive articles directly from the bottom of said slot, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member obstructing the inner ends of said slots with the exception of a few, including the aforesaid slot, near the receiving end of said track, a receptacle at the face of said ring, and a guard crossing the faces of some of said slots near the approach side of said track, including the slot communicating with the track, and spaced from the bottom plane of said slots a distance approximating the thickness of the article being handled, the lower edge of said guard directly above the track being shaped to match and receive the upper surface of an article when in the desired delivery position, whereby to select for delivery only those articles occupying the desired delivery position.

5. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its receiving end positioned at or slightly below the bottom of one of the uppermost slots and substantially in contact with the ring, whereby to receive articles directly from the bottom of said slot, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member obstructing the inner ends of said slots with the exception of a few, including the aforesaid slot, near the receiving end of said track, a receptacle at the face of said ring, the upper end of said track having its side wall relieved on the more remote side in the direction of rotation a distance at least equal to the length of the article being handled, to permit articles dropping from said ring to overflow when said track is filled, and a guard crossing the faces of some of said slots near the approach side of said track, and spaced from the bottom plane of said slots a distance approximating the thickness of the article being handled, the lower edge of said guard directly above the track being shaped to match and receive the upper surface of an article when in the desired delivery position, whereby to select for delivery only those articles occupying the desired delivery position.

6. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its upper end positioned to receive from one of the uppermost slots, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member obstructing the inner ends of said slots with the exception of a few, including the aforementioned slot, near the receiving end of said track, a receptacle at the face of said ring and adapted to deliver articles into said slots at the face of said ring, means carried by said ring for engaging said articles to determine a given position thereof in the ring, a guard crossing the face of the slot in communication with the track and spaced from said ring to form therewith a selective passage for articles engaged by said means.

7. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned

with its face upward in a sloping plane, a delivery track having its upper end positioned to receive from one of the uppermost slots, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member obstructing the inner ends of said slots with the exception of a few, including the aforementioned slot, near the receiving end of said track, a receptacle at the face of said ring and adapted to deliver articles into said slots at the face of said ring, means carried by said ring for engaging said articles to determine a given position thereof in the ring, a guard crossing the face of the slot in communication with the track, and having its lower edge shaped to match the upper surface of an article engaged by said means, whereby to select for delivery only those articles so engaged.

8. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its upper end positioned to receive from one of the uppermost slots, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member obstructing the inner ends of said slots with the exception of a few, including the aforementioned slot, near the receiving end of said track, a receptacle at the face of said ring and adapted to deliver articles into said slots at the face of said ring, projections in said ring adapted to enter openings in the articles being handled to determine a given position thereof in the ring, a guard crossing the face of the slot in communication with said track and spaced from said ring to form therewith a selected passage for articles receiving said projections.

9. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its upper end positioned to receive from one of the uppermost slots, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member being rotatably adjustable and having an edge obstructing the inner ends of said slots with the exception of a few, including the aforementioned slot, a receptacle at the face of said ring and adapted to deliver articles into said slots at the face of said ring, a piece carried by said member and having an upper edge forming a continuation of the first named edge, said piece having a finished surface at the approach side of said track and engageable thereby at said continuation.

10. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its upper end positioned to receive from one of the uppermost slots, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member being rotatably adjusted and having an edge obstructing the inner ends of said slots with the exception of a few, including the aforementioned slot, a receptacle at the face of said ring and adapted to deliver articles into said slots at the face of said ring, a piece carried by said member and having an upper edge forming a

continuation of the first named edge, said piece having a finished surface at the approach side of said track and engageable thereby at said continuation, said surface diverging from said side of said track from the point of engagement therewith.

11. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its upper end positioned to receive from one of the uppermost slots, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member obstructing the inner ends of said slots with the exception of a few, including the aforementioned slot, near the receiving end of said track, a receptacle at the face of said ring and adapted to deliver articles into said slots at the face of said ring, means carried by said ring for engaging articles to determine a given position thereof in the ring, a guard crossing the face of the slot in communication with the track and spaced from said ring to form therewith a selective passage for articles engaged by said means, the upper end of said track having its side wall relieved on the more remote side in the direction of rotation a distance at least equal to the length of the article being handled, to permit articles dropping from said ring to overflow when said track is filled.

12. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its upper end positioned to receive from one of the uppermost slots, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member being rotatably adjusted and having an edge obstructing the inner ends of said slots with the exception of a few, including the aforementioned slot, a receptacle at the face of said ring and adapted to deliver articles into said slots at the face of said ring, a piece carried by said member and having an upper edge forming a continuation of

the first named edge, said piece having a finished surface at the approach side of said track and engageable thereby at said continuation, the upper end of said track having its side wall relieved on the more remote side in the direction of rotation a distance at least equal to the length of the article being handled, to permit articles dropping from said ring to overflow when said track is filled.

13. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its upper end positioned to receive from one of the uppermost slots, a normally fixed plate-like member within said ring and around which said ring is adapted to rotate, said member obstructing the inner ends of said slots with the exception of a few, including the aforementioned slot, near the receiving end of said track, a receptacle at the face of said ring, and a guard crossing the face of the slot in communication with the track and having its lower edge shaped to match the upper surface of an article in the desired delivering position, whereby to select for delivery only those articles occupying the desired delivering position.

14. In a pick-up device for delivering articles in a selected position, a rotary collecting ring having slots in its face and opening into its inner circumference, said ring being positioned with its face upward in a sloping plane, a delivery track having its upper end positioned to receive from one of the uppermost slots, a normally fixed plate-like member obstructing the inner ends of said slots with the exception of a few, including the aforementioned slot, near the receiving end of said track, a receptacle at the face of said ring and adapted to deliver articles into said slots at the face of said ring, means for releasing articles from said ring to said track, and a clamp carried by the fixed structure of the device for supporting said track, said clamp being adjustable in width whereby various widths may be supported thereby.

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