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ARTICLE FEEDING DEVICE

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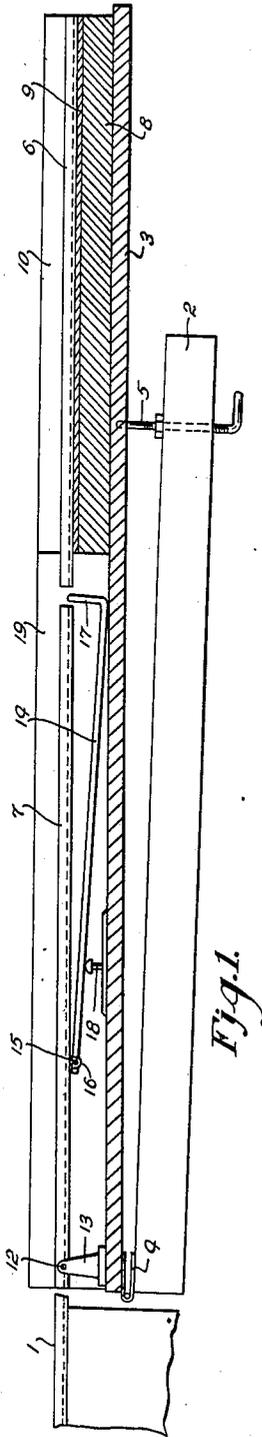


Fig. 1.

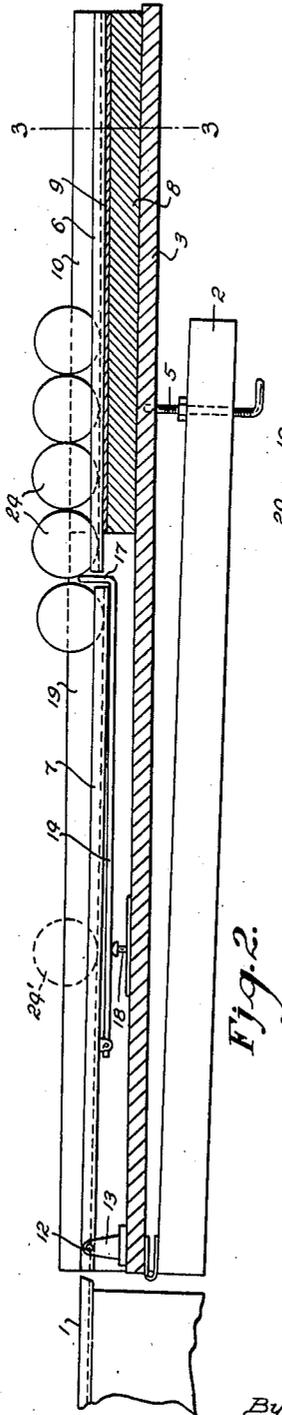


Fig. 2.

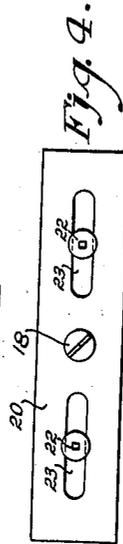


Fig. 4.

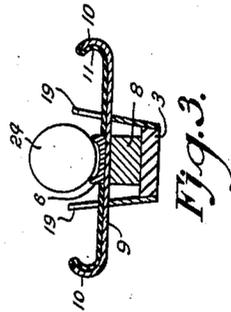


Fig. 3.

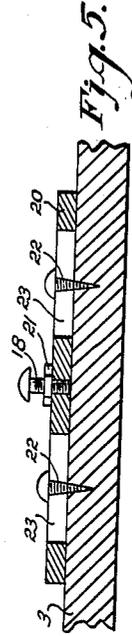


Fig. 5.

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ARTICLE FEEDING DEVICE

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4 Claims. (Cl. 193—32)

This invention relates to article feeding devices, and more particularly to a device for feeding articles singly and in spaced relation to each other.

In grading machines for eggs and the like, it is necessary that each article be handled individually by the machine. Thus, the articles must be fed onto the machine one by one, in sufficiently spaced relation to permit each individual article to be subjected to the action of the machine. Fragile articles, such as eggs, must be carefully handled and, therefore, the feeding thereof to such machines is frequently done by hand. Automatic feeding devices have heretofore been proposed but they have not been wholly effective in operation, particularly in the handling of fragile articles, such as eggs.

It is an object of this invention to provide a simple but effective means for feeding articles in single, spaced order, such means being adapted to handle the articles in a gentle manner whereby injury to the same is avoided. A further object is to provide a gravity feeding means for articles adapted to be actuated by the weight of the articles whereby the use of extraneous power means is avoided.

Other objects, details and advantages will become apparent as the description of the invention proceeds, with particular reference to the accompanying drawing, in which,

Figure 1 is a side elevational view, partly in section, showing the device in one position,

Figure 2 is a side elevational view, partly in section, showing the device in another position,

Figure 3 is a transverse section on line 3—3 of Figure 2,

Figure 4 is a plan view of a detail of the device, and

Figure 5 is a sectional elevation of the detail shown in Figure 4.

In the drawing, the device is shown as adapted to feed eggs or like articles onto the runway of platform 1, which may be a part of a grading device, not shown.

The device comprises a base 2 adapted to be fixed in relation to the grading machine or other apparatus with which the device is to be used, and an adjustable base member 3 hinged at 4 to the fixed base 2. The member 3 is normally supported in inclined relation by the bolt 5 mounted in the base 2. The bolt 5 is adjustable to vary the angle of incline of the member 3.

Mounted on the member 3 is a fixed article track or runway 6 adjacent the end remote from the platform 1, and a tiltable article track 7

extending from a point closely adjacent the end of track 6 to a point closely adjacent the runway 1. The fixed runway 6 is carried by a support 8, which supports the runway in a somewhat elevated position with respect to the base member 3. In order to prevent injury to any article which may be accidentally dislodged from the runway 6, a guard platform 9, with upturned lateral flanges 10 and preferably lined with a resilient material 11, such as rubber, extends along either side of the runway.

The tiltable track 7 is pivotally supported at one end, as indicated at 12, on a lug or lugs 13 mounted on the base member 3. A bar 14 has one end pivoted at 15 to lugs 16 on the under side of track 7, such pivot point being located at a point which is spaced from the pivoted end of the track a distance roughly one-third the length of the track. The other end of bar 14, which may rest normally on the member 3, has an unturned finger 17, which projects between the adjacent ends of tracks 6 and 7. It will be observed that, in the normal position of the bar, as shown in Figure 1, the end of finger 17 does not project above the upper surface of the tracks so that an article may move from one track to the other. A post 18, also mounted on the member 3, engages the lower surface of the bar at a point adjacent its pivot point and spaced therefrom a distance roughly one-quarter more or less the length of the bar. Means for adjusting the height and relative position of the post with respect to the end of the bar are preferably provided. As shown in Figures 4 and 5, the post is screw-threaded in a plate 20, a lock nut 21 being provided to maintain it at any adjusted height. The plate is mounted on the base member 3 by means of screws 22 which extend through longitudinally extending slots 23 in the plate. Thus, the plate and the post carried thereby may be moved forward or backward, as desired, by loosening the screws 22, which may subsequently be tightened to lock the plate and post in any desired position.

It will be observed that the equilibrium of the device is such that, in the normal at rest position thereof, as shown in Figure 1, the track 7 is maintained in substantially the same plane as track 6 with their adjacent ends in opposing relation, the bar 14, supported as described, acting to hold the track 7 in such position.

The track 7 is provided with lateral guard rails 19 to prevent accidental dislodgment of articles thereon.

In operation, the base member 3 with its sup-

ported elements is set at a desired inclination, which is preferably just sufficient to cause positive movement by gravity of articles along tracks 6 and 7 in any position of the latter. The articles 24 to be fed are placed on the track 6 as shown in Figure 2. As the foremost article moves from track 6 into engagement with the end of track 7, the latter is immediately depressed about its pivot 12 under the weight of the article. Such depression of the track immediately causes upward movement of the adjacent end of bar 14 and finger 17 because of the engagement of post 18 therewith. The finger 17 projects between the ends of tracks 6 and 7 and prevents the succeeding articles on track 6 from moving forward onto track 7. It will be observed that only a very slight downward movement of the end of track 7 is necessary to cause upward movement of finger 17 into article arresting position.

As the article on track 7 reaches the position, which is roughly that indicated in dotted lines at 24', the device returns to its normal position, as in Figure 1, and another article is fed onto track 7, as previously described. The spacing of the articles being fed may be varied as desired by moving the plate 20 backwardly or forwardly to alter the point of engagement of the post with the bar 14.

The device described constitutes an efficient and accurate feeding device for eggs and the like. Movement of the various parts is such that possibility of injury to fragile articles is substantially avoided. The provision for convenient and rapid adjustment of the various parts is an important feature of the invention in that the device may be readily maintained in useful operation. The arrangement of parts, while quite simple, is such that sensitive, positive operation is achieved.

It will be apparent that many details of structure may be altered without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. An article feeding device comprising a base, a fixed runway mounted on the base, a track in alignment with and having a free end adjacent the end of the runway, means on the base for pivotally supporting the other end of the track,

a bar positioned between the base and track and having one end pivoted to the track, an article engaging finger carried by the other end of the bar and adapted to project between the adjacent ends of said runway and track, and a post mounted on the base and engaging said bar between the ends thereof, said post and bar forming a support for said free end of the track to normally maintain it in substantially opposing relation to the adjacent end of the runway, said free end being depressible under the weight of an article placed thereon, the finger-carrying end of said bar being upwardly movable in response to depression of said free end of the track.

2. An article feeding device as defined in claim 1 including means for mounting said post on said base comprising a plate fixed to the base, said post having screw-threaded engagement with the plate, and means for adjusting the position of the plate on the base.

3. An article feeding device as defined in claim 1, including a support, means hingedly securing said base to the support, and adjustable means for positioning said base in inclined relation to the base.

4. An article feeding device comprising a base, a fixed runway mounted on the base, a track in alignment with and having a free end adjacent the end of the runway, means on the base for pivotally supporting the other end of the track, said track being tiltable about said supporting means, a bar positioned between the base and track and having one end pivoted to the track and the other end normally resting on the base, an article engageable means carried by the latter end of the bar and adapted to project between the adjacent ends of said runway and track, and a rigid upright member mounted on the base and engaging the under surface of the bar at a point closer to the pivoted end than to the other end thereof, said rigid member and bar forming a support for said free end of the track to normally maintain it in substantially opposing relation to the adjacent end of the runway, said track being tiltable under the weight of an article placed on said free end, said article engageable means being upwardly movable into article engaging position in response to tilting movement of the track.

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