My invention relates generally to cooky machinery and more particularly to a cooky feeding tower therefor.

It is desirable, during the making of goods of this kind, to feed baked cookies or wafers or the like to a conveyor in conjunction with which a further operation is to be performed and one previous method of doing this is to house the cookies to form vertical stacks, the lowermost cookie being slid therefrom as required.

One object of my present invention lies in my slanting construction, this causing the supply of cookies to be so positioned as to have their weight carried largely by the trough or duct in which they rest rather than by the cookies themselves. It is to be understood that should the cookies be stacked vertically that the bottom cookie would necessarily carry all of the weight of the entire stack of cookies thereabove and that each cooky would, in its turn, pass through this condition and furthermore, while in this state of compression, would be subjected to the sliding removal action. The sliding removal action causes a rubbing and shearing action which is especially objectionable in the case of intricate and delicate designs as it renders them less distinct and somewhat blurred even though the cookies are in a more or less hardened state.

Hand in hand with the aforesaid advantage comes a second advantage, namely, the fact that a large supply of cookies may be kept in the feeding device, thus permitting the persons feeding the same to have longer rest periods between the intermittent feedings. Of course, the rest periods are of only a minute or less duration but nevertheless the efficiency of the worker is increased.

Another advantage is that the supply of cookies in the feeding reservoir is visible from a large angle and consequently the probability of having any of the feeding lines running dry is materially lessened. This lack of cookies, in the case of making sandwich cookies, would cause the confection to be deposited upon the carrying means which means is usually a belt.

Yet another advantage, and one of the main ones, is the ease of observing broken or defective cookies and also the ease of their removal. It will be understood that the operator grasps a series of cookies in transferring them to the feeding tower and that broken cookies are sometimes included thereamong. When this occurs, it is not necessary that these cookies be removed before the entire bunch is inserted into one of the several ducts or troughs, with the attendant danger of dropping a good cooky or two, but, contrariwise, the entire bunch can be laid into feeding position, and then the defective cooky or cookies be easily seen and quickly and expeditiously removed.

Still another feature is the ease of placing the bunch of cookies into the machine. They do not need to be more or less singly dropped, as in the case of a vertical chute, but can simply be laid as a unit upon their several sides, the ends of the same being grasped and in compression as they are lifted.

The nature and advantages of the invention will be better understood when the following detailed description is read in connection with the accompanying drawing, the invention residing in the construction, combination, and arrangement of parts as claimed.

In the drawing—
Fig. 1 is a front view of my feeding tower.
Fig. 2 is a side view of the feeding tower.
Fig. 3 is an enlarged sectional view taken along the plane of the line 3—3 of Fig. 1.
Fig. 4 is a sectional view taken along the plane of the line 4—4 of Fig. 2.
Fig. 5 is a side view of the tower stand or bearing.
Fig. 6 is an end view thereof, parts being broken away to expedite the showing.
Fig. 7 is a fragmentary view of the front of a modification of my tower.
Fig. 8 is a side view of Fig. 7.
Like numerals refer to like parts throughout the several views.

Referring to Figs. 1, 2, 3 and 4, numeral 10 indicates a back plate which is curved at 11 and extended downwardly at 12.

A cross supporting bar 13, see Fig. 2, may be attached to the back of the back plate as by welding at 14. This bar extends well beyond the sides of the back plate and aids in mounting or carrying the same.

Partitions or sides 15 have their bottom edges curved to fit the upper face of the back plate and may be attached thereto or made as one therewith, these partitions being parallelly positioned and the end ones serving as the ends of the tower. The upper portions of these partitions 15, beginning at or near their upper ends, and extending downwardly for a portion of their length, are cut away as at 16 and then gradually carried in a curved manner as at 17 to their full height. The upper corners of the partitions 15 may be cut away as at 18. See Fig. 2.

The upper edges of the full height parts of
the side bars 15 carry the strips 20 rounded at their tops as at 21. The end strips are cut away so as to not protrude beyond the end plates. As shown in Figs. 1 and 3, these strips form flanges which approach one another but leave spaces 22 therebetween, these openings permitting visual inspection of the cookies therebetween and also manual adjustment if the same be necessary.

As shown in Figs. 2 and 3, numeral 25 indicates the several cookies as positioned within the device. As shown in dotted lines, the cookies may be stacked to any desired position in the tower. And, as also indicated in Fig. 1, the inner ducts may be first supplied with the cookies whereby inspection of the edges thereof, looking for broken ones, is rendered very easy. As the cookies are removed one by one, the remainder gravitate downwardly around the bend and into the chute.

A supporting plate 25, carried by the side angle member 29 of the main frame, only one of these being shown, by means of the spacer block 23, welded in place at 30, extends across the machine under the tower. A sliding feeder plate 31, V-notched at 32, is attached at 33 to the bearings 34, one at each side of the machine. These bearings are reciprocated upon the shafts or rods 35 and thus the plate 31 removes one cookie from each of the several stacks. The belt 36 receives the cookies as they are pushed from the top of the plate 25.

Supporting bars 40, right and left hand respectively, are attached to the end plates 15, in alignment with the previously mentioned bar 13, and aid in carrying the tower.

Each of the ends of the bars 13 and 40 are identically formed, having a slot 41 and a hole 42. As shown in Figs. 5 and 6 the holes 42 receive the arms 45 of the crosshead 46. The arms are shouldered and the nuts 44 threaded upon the threads 45 of the arms push the bars 13 and 40 into a locked and rigid position with the crosshead.

The bearing or standard, shown in side view in Fig. 5, end view in Fig. 6, and in dotted lines in Fig. 1, has a base 50, sides 51 and a top bar 52. The base 50 may be attached, as by welding at 53, onto the side frame member 23. See Fig. 5. The sides are slotted at 55 to slidably receive the arms 45 of the crosshead. A stud 56, see Fig. 5, enters the slot 41 and aids in guiding and locking movement of the several parts.

A threaded rod 57, having a knurled operating nut 58, is revolvably mounted in the standard and receives the threaded opening 59 of the crosshead whereby rotation of the rod causes the crosshead to move up and down, as desired.

It will be apparent, with this construction, that the tower may be individually adjusted at either or both ends so as to be properly positioned above the abutment or receiving plate 25.

As shown in Figs. 7 and 8, numeral 70 indicates the back plate which has parallel walls or sides 71 extending forwardly therefrom. The walls are extended forwardly as at 72 and have front flanges 73 attached as shown. Slots 74 extend upwardly as shown.

Without limiting myself to the particular embodiments of my invention illustrated and explained above, and desiring to protect my invention in the broadest manner legally possible, what I claim is:

1. A cooky mechanism of the class described, the combination of: cooky supporting means consisting of a trough-like member having sides extending upwardly in spaced relationship so as to form an upwardly facing trough adapted to receive cookies, said trough slanting downwardly, a substantially vertically positioned portion for said trough and in alignment therewith, connecting means between the vertical portion and the trough and means connected onto the substantially vertically positioned portion of the trough for preventing lateral movement of the cookies from the said portion, said means extending upwardly and terminating at the bottom end of the upwardly facing trough.

2. A cooky mechanism as set forth in claim 1 in which the height of the sides of the trough-like member is approximately one half the width of the upwardly facing trough.

3. In a cooky machine having a moving belt, cooky feeding means thereabove, the combination of gravity means to deposit cookies on said feeding means, said gravity means comprising, a tube-like lower portion, an upper duct connected onto the lower tube and extending upwardly therefrom, said duct having a bottom positioned on an incline, sides thereon, said duct extending upwardly in parallelism and at right angles to the bottom thereof whereby said duct may receive circular cookies or rectangular cookies as desired, said duct having an open top of the same lateral dimension as the spacing of the sides thereof whereby a series of cookies having a combined height greater than the diameter thereof may be received therefrom.

4. A cooky machine as set forth in claim 3 in which the sides of the duct are of a height which is substantially equal to one half the width of the duct.

5. A cooky feeding tower comprising a vertical tube for receiving cookies within predetermined sizes, a feeding trough extending upwardly therefrom at an angle, said trough having a seat portion extending along its length to slidably receive cookies, the angle being 45° or less to cause the cookies to be primarily supported upon their edges, and non-overhanging wall means for preventing lateral movement of the cookies.

FRANK CHARLES WERNER.