April 4, 1939. S. H. PELLAR 2,153,098

CONVEYER

Filed Jan. 16, 1937

Fig. 2

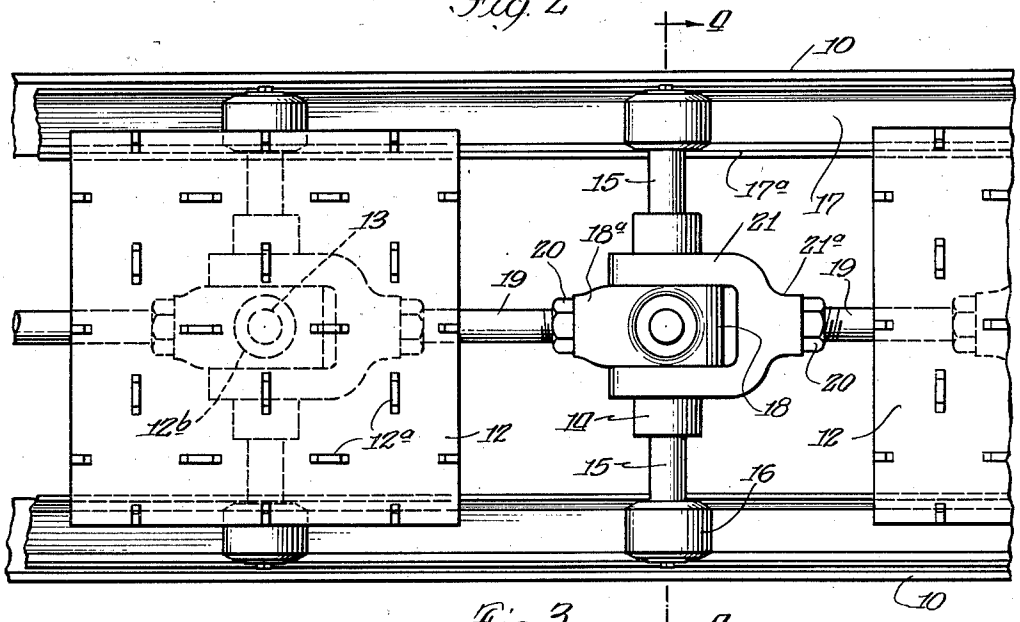


Fig. 3

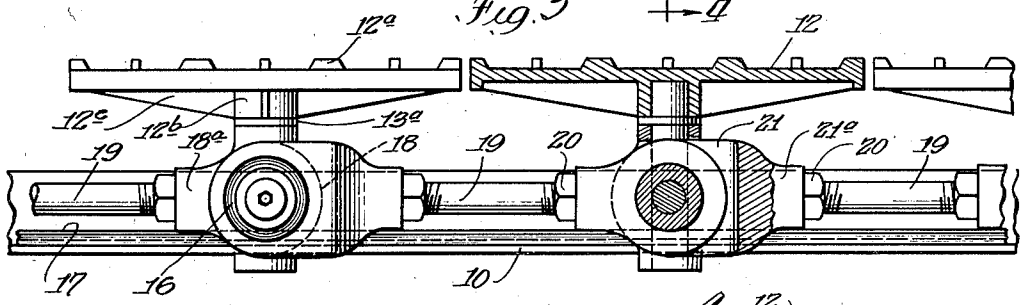
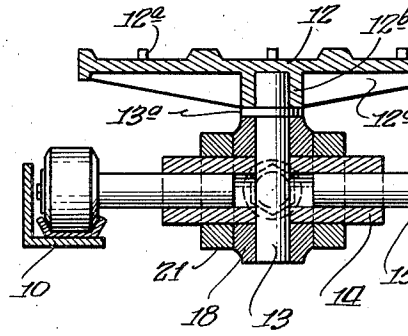


Fig. 4



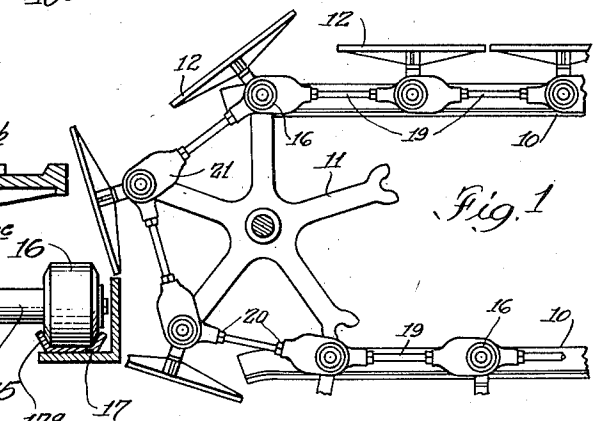


Fig. 1

Inventor:
Sidney H. Pellar
By: Stevens & Batchelder
Attys.

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CONVEYER

Sidney H. Pellar, Chicago, Ill.

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9 Claims. (Cl. 198—189)

My invention relates to conveyers of the chain type, and more particularly to those applicable to the transportation of units in baking establishments, and my main object is to provide a conveyer which maintains its alinement at all times.

A further object of the invention is to include in the novel conveyer the combination of a rolling unit and a track which will eliminate any lateral deviation of the conveyer links or sections from their course.

A still further object of the conveyer is to constitute each link or section of the conveyer as a compact and sturdy unit, which operates efficiently.

Another object of the invention is to provide simple means in the conveyer for the adjustment of longitudinal spacing of the links or sections thereof.

An important object of the invention is to construct the novel conveyer along lines of utmost simplicity, strength, and durability.

With the above objects in view, and any others which may suggest themselves from the description to follow, a better understanding of the invention may be had by reference to the accompanying drawing, in which—

Fig. 1 is an elevation of one end of the novel conveyer;

Fig. 2 is an enlarged plan view of a portion thereof;

Fig. 3 is an elevation, partly in section, of the showing in Figure 2; and

Fig. 4 is a section taken on the line 4—4 of Fig. 2.

While chain conveyers or carriers for horizontal travel in various establishments are not generally novel, my interest is particularly in such conveyers as require each link to carry a support for a food or other commodity, and more particularly where the food or such commodity must travel in a straight or true path in order to receive attention or treatment at certain points, and it is in this respect that accuracy in the travel of the conveyer is an all-important factor. Where the supports are apt to jerk, wobble, or in other ways get out of alinement, the attention or treatment administered to the materials carried would miss the exact zones intended for them to a greater or less degree, resulting in errors which are evident during the remainder of the process and which detract from the appearance and value of the product. It has therefore been my intention to so construct a conveyer for this purpose that both lateral alinement and longitudinal unit spacing may be secured to a high degree of accuracy.

In accordance with the foregoing, specific reference to the drawing indicates the horizontal support or runway of the conveyer in the form of facing angle bars 10, and the end sprockets at 11.

The conveyer is intended to carry a longitudinally-spaced series of platforms 12 made of cast metal and preferably formed with an array of top lugs 12a. The platforms are intended to receive trays or other containers of the material moved by the conveyer, the trays having bottom depressions to fit the lugs 12a and so prevent the trays from shifting. The trays have not been shown, since they do not contribute to the novel mechanism of the conveyer.

Each of the platforms 12 is in the form of a square plate as shown in Fig. 2, although any other form which will suit the purpose of the work may be employed. The center of the platform has a pendent hub 12b, from which webs 12c extend to the rim portion of the platform to reinforce the same.

Each platform 12 is bored in its hub 12b to be tightly driven on the upper parts of a king-pin 13. The platform comes to rest on a collar 13a integral with the king-pin, and the lower portion of the latter is driven through a horizontal sleeve 14 extending crosswise of the conveyer.

Into each end of the sleeve 14 is tightly driven a spindle 15, the outer portion of the same carrying a free-running roller 16 by means of an ordinary or ball bearing. The ends of each roller 16 are chamfered at the periphery in order to seat in a channeled track 17 carried by each angle rail 10. The flanges 17a of the rail 17 have the same angularity as the chamfer of the roller and extend slightly above such chamfer as clearly shown in Fig. 4. Thus, the rollers of each pair of spindles 15 not only have a close fitting track in which to run, but the sides of the track are amply deep to retain the rollers from lateral deviation at all times.

Before the king-pin 13 is driven through the sleeve 14, the latter is driven through a centrally-located block 18. This block has a forward extension 18a which is horizontally-tapped to receive one end of a connecting rod 19. The latter also receives a lock nut 20 to fix its relation to the block after the rod has been threaded into the proper extent. Straddling the block 18 is a fork 21, the latter being freely mounted on the sleeve 14. The fork has its shank 21a rearwardly directed and tapped to receive the forward end of

another connecting rod 19, the latter also being secured by a lock nut 20. It is thus seen a conveyer chain is formed by a pair of cross spindles 15 and their connections with the forward rod 19 as one link, while the fork 21 and its connection with the rear rod 19 form the next link to the rear. Necessarily, the end portions of each connecting rod are threaded in opposite directions to either gather or separate the units connected when the rod is turned accordingly.

The assembly of the conveyer as described above is characterized by its medial rod series 19 as forming the basis or backbone of conveyer. Being centrally located, the connecting rod series renders the chain compact and balanced, and is of course more simple than a chain formed with side links. The assembly of the massive block 18 with the sturdy cross sleeve 14 assures the accurate and dependable disposal of the cross-spindle 15 so that the cross members of the chain are also in true relation to the longitudinal element thereof. Further, the spindles 15 are rigidly retained by the sleeve 14 without any special fastening means, and therefor maintain the rollers 16 in properly alined and spaced relation, so as to run true in their tracks. The expedient of the lock nuts 20 provides a simple and accurate adjusting means for any cross unit in the chain which may be slightly forward or rearward of the proper position in respect to the other cross members or the sprocket 11. As assembled, the novel conveyer presents a simple, sturdy, efficient, and durable mechanism which may operate indefinitely without other attention than an occasional lubrication or adjustment. Also, a conveyer so accurately constituted assures the travel of the food containers in a true course, whereby to receive treatment by or deposits from operative or supply units along the course of the container in proper registration and harmony, avoiding deformations in the structure and appearance of the foods treated and the overrunning and loss of fluid materials serving as fillings or toppings. With the conveyer accurately adjusted, errors of the kind mentioned are clearly attributable to one or another of the instrumentalities designed for the treatment or the supply of the conveyer contents. With the series of platforms in close succession, a belt of solid, rather than of flexible sections is formed, each section having its own firm support on the track. The materials in the containers may thus receive treatment by cutting, stamping or pressure from units along the course of conveyer travel without yielding or giving way, since each conveyer link joint furnishes an independent and firm support.

I claim:—

1. A conveyer comprising stationary parallel track supports, an endless chain member movable between the supports and including a series of links, alined pairs of cross-spindles between the latter, rollers carried by the outer portions of the cross-spindles and adapted to travel over the track supports, a block carried between the inner portions of each pair of spindles, and a fork linked to said inner portions and straddling the block, the latter receiving one of said links from one side of the spindle pair and the shank of the fork receiving the next link from the other side.

2. The structure of claim 1, the joint of the block with the related link being longitudinally adjustable.

3. The structure of claim 1, the joint of the fork shank with the related link being longitudinally adjustable.

4. The structure of claim 1, said link being a rod threaded at the joining end with the block, and the latter being tapped to receive such end.

5. The structure of claim 1, said link being a rod threaded at the joining end with the block, the latter being tapped to receive said end, and a lock-nut carried by the threaded portion of rod and applicable to the block to lock the joint.

6. The structure of claim 1, a king-pin vertically directed through said block and rising therefrom, and an article support recessed on its underside to receive the upper portion of the king-pin.

7. The structure of claim 1, a king-pin vertically directed through said block and rising therefrom, an article support recessed on its underside to receive the upper portion of the king-pin, and a collar carried by said upper portion of the king-pin and forming a limit for the recessed portion of the article support.

8. The structure of claim 1, a sleeve tightly receiving said inner spindle portions within its ends and vertically perforated at a central point, the perforation of the sleeve extending through the block, and a king-pin driven through the perforated portion of the block and sleeve and extending upwardly to receive an article support.

9. The structure of claim 1, a sleeve tightly receiving the inner spindle portions within its ends and vertically perforated at a central point, the perforation of the sleeve extending through the block, and a king-pin driven through the perforated portion of the block and sleeve and extending upwardly to receive an article support, the divisions of said fork being perforated to ride on the sleeve.

SIDNEY H. PELLAR.