

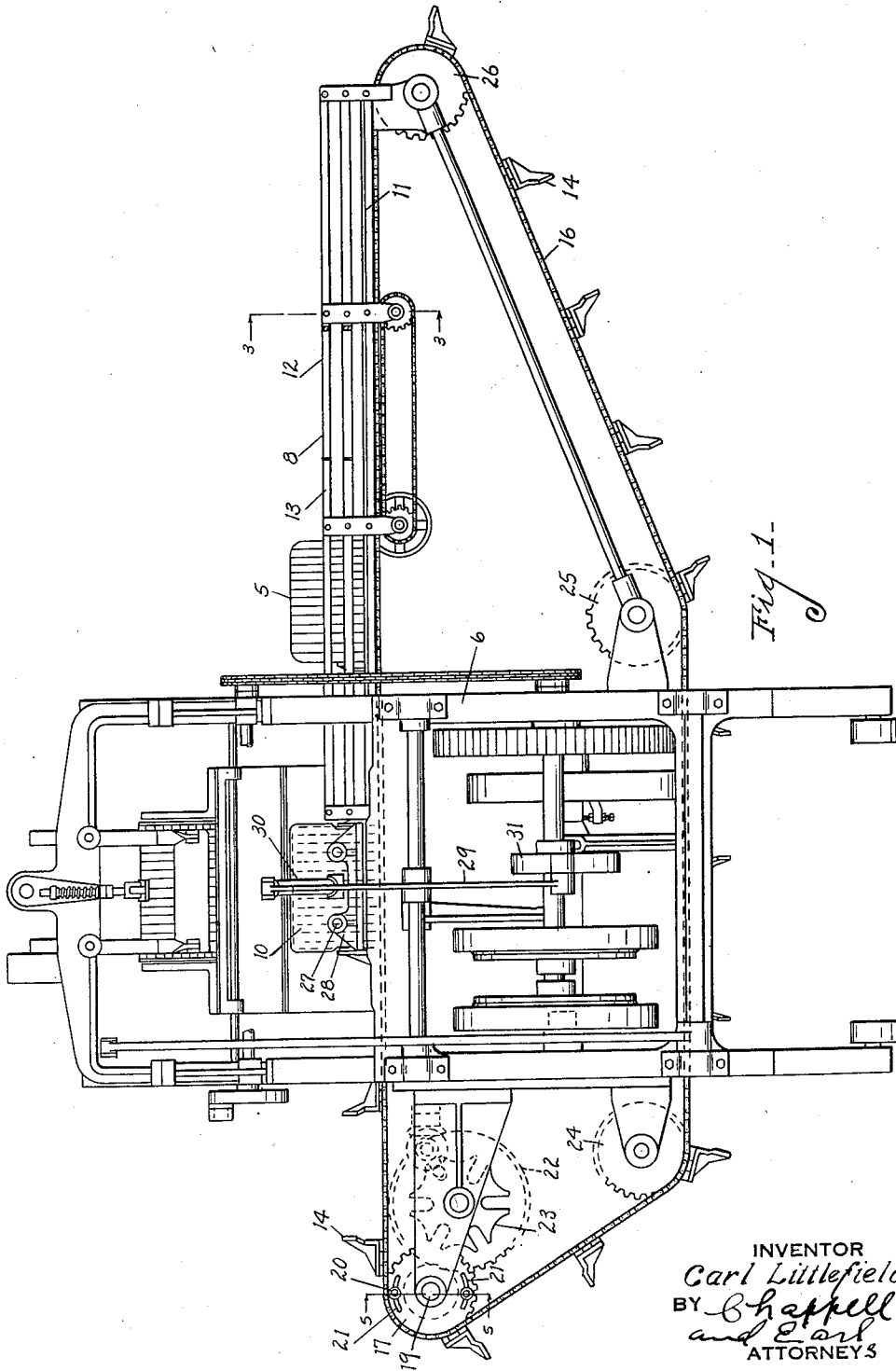
Feb. 2, 1932.

C. LITTLEFIELD

1,843,453

CONVEYER MECHANISM FOR WRAPPING MACHINES

Original Filed Nov. 9, 1929 3 Sheets-Sheet 1



INVENTOR
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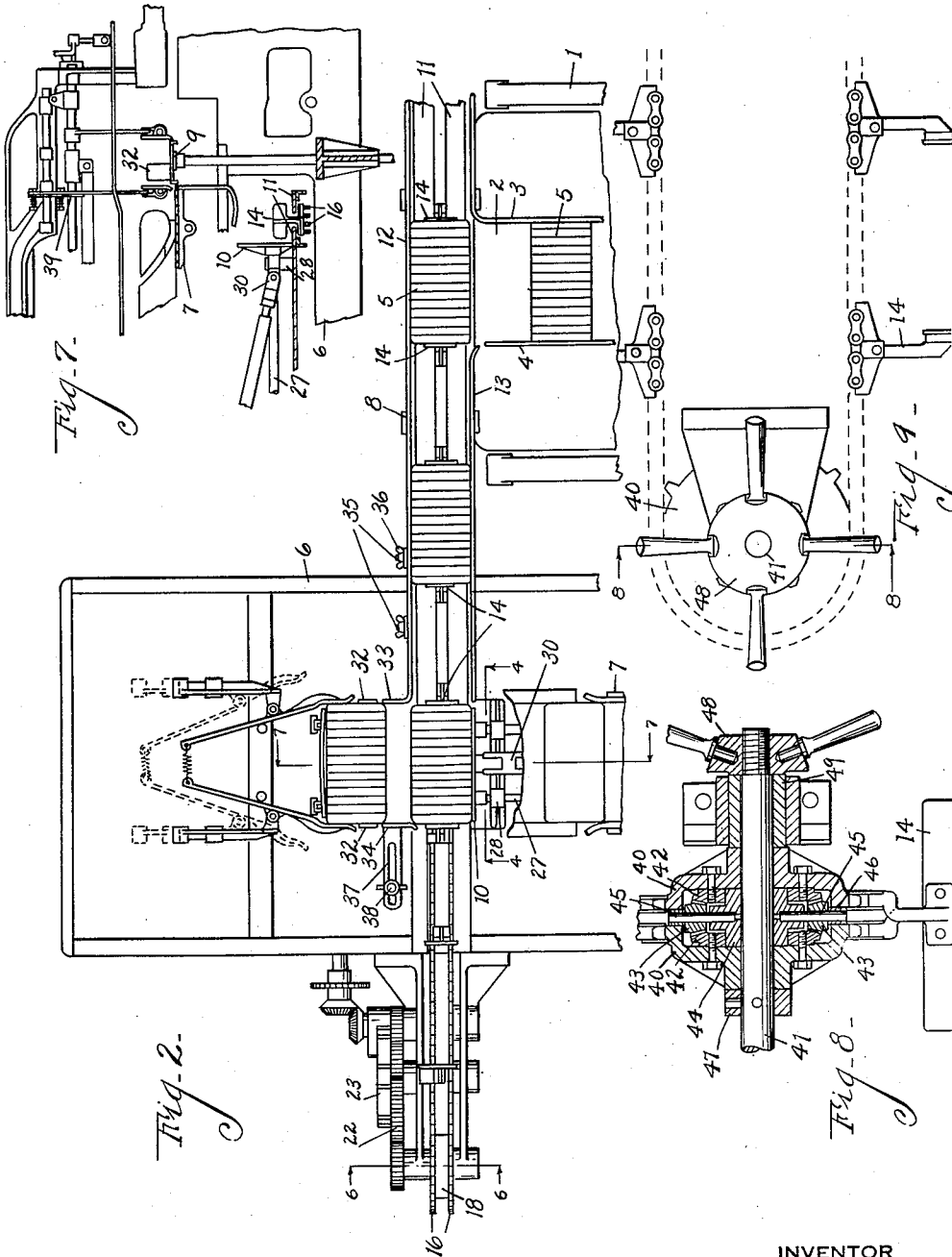
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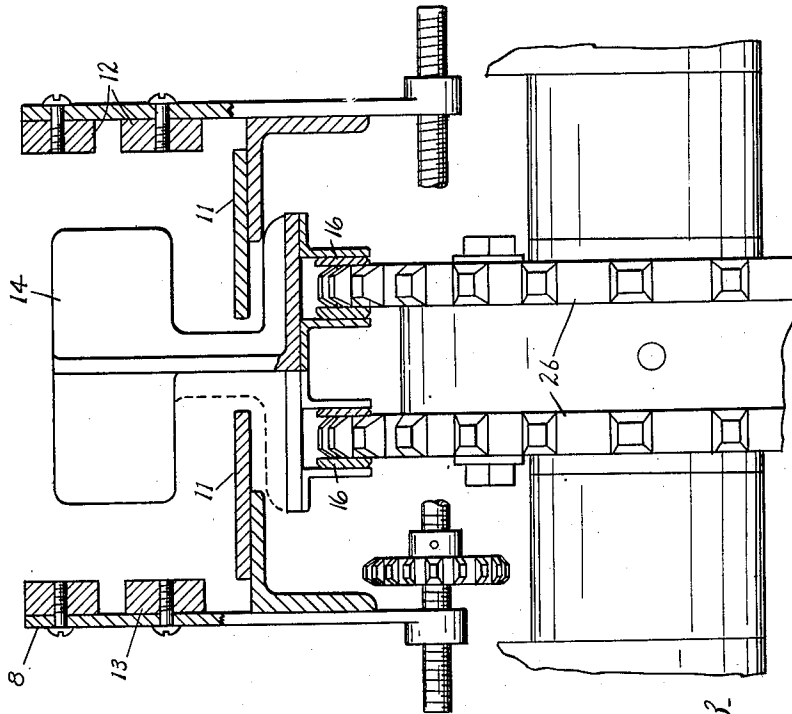


Fig. 3.

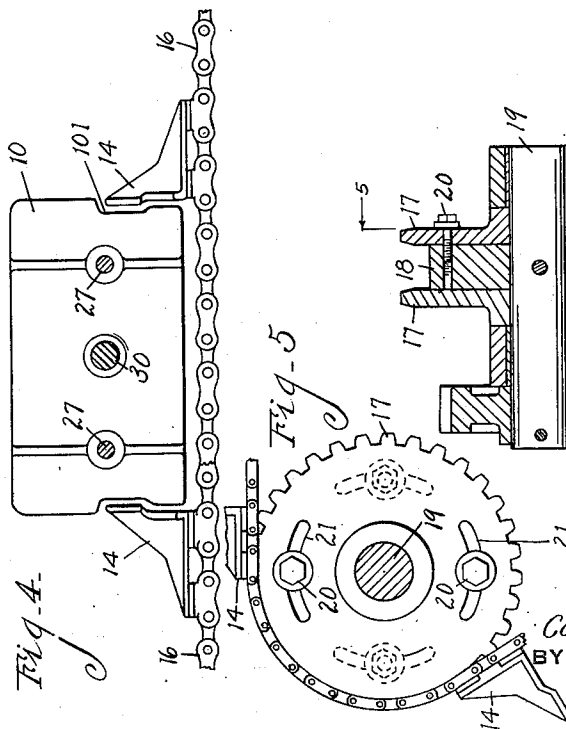


Fig. 4.

Fig. 5.

Fig. 6.

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CARL LITTLEFIELD, OF BATTLE CREEK, MICHIGAN, ASSIGNOR TO BATTLE CREEK BREAD WRAPPING MACHINE COMPANY, OF BATTLE CREEK, MICHIGAN

CONVEYER MECHANISM FOR WRAPPING MACHINES

Original application filed November 9, 1929, Serial No. 405,934. Divided and this application filed February 9, 1931. Serial No. 514,559.

My improved conveyer mechanism is especially designed by me and I have illustrated the same as embodied for use in combined wrapping and slicing machines of the type illustrated in my application for Letters Patent filed November 9, 1929, Serial No. 405,934, this present application being a division thereof.

The main objects of this invention are:

First, to provide a conveyer mechanism by means of which sliced loaves of bread are effectively fed or delivered to the machine to be wrapped as a unit.

Second, to provide a conveyer mechanism which is adapted to handle sliced loaves of bread or the like without displacing or crushing the slices.

Third, to provide a mechanism of this character which may be easily adjusted to different size loaves.

Objects pertaining to details and economies of my invention will definitely appear from the description to follow. The invention is defined in the claims.

A structure which embodies the features of my invention is clearly illustrated in the accompanying drawings, in which:

Fig. 1 is an elevation of a machine embodying the features of my invention.

Fig. 2 is a fragmentary plan view.

Fig. 3 is an enlarged fragmentary view partially in section on line 3—3 of Fig. 1 showing certain details of the adjusting mechanism.

Fig. 4 is an enlarged detail view partially in section on line 4—4 of Fig. 2 showing further details of the conveyer mechanism.

Fig. 5 is a fragmentary view partially in section on line 5—5 of Fig. 6.

Fig. 6 is a fragmentary view partially in section on line 6—6 of Fig. 2.

Fig. 7 is a fragmentary view partially in section on line 7—7 of Fig. 2.

Fig. 8 is a fragmentary view partially in section on a line corresponding to line 8—8 of Fig. 9 showing a second form of adjusting means for the conveyer.

Fig. 9 is a fragmentary side elevation of the structure shown in Fig. 8.

In the embodiment of my invention illus-

trated 1 represents the slicing unit of a combined slicing and wrapping machine and 2 the delivery table of that machine. This delivery table is provided with guide members 3 and 4 between which the sliced loaves 5 are delivered by the slicing machine. A satisfactory slicing machine is illustrated in my application for Letters Patent filed September 30, 1929, Serial No. 396,033, or in my application for letters Patent filed September 19, 1929, Serial No. 393,339.

The wrapping machine is designated generally by the numeral 6, a part of the wrapping mechanism being indicated at 7. This mechanism is fully illustrated in my said application Serial No. 405,934, of which this is a division.

The spliced loaves are transported from the slicing machine to the wrapping machine by means of a feed conveyer designated generally by the numeral 8. A vertically reciprocating plunger 9 is disposed to reciprocate at the side of the conveyer 8 and a transfer plunger 10 is adapted to transfer the articles from the feed conveyer to the feed plunger. The feed plunger delivers the articles to the wrapping mechanism designated generally by the numeral 7.

The feed conveyer comprises a pair of ways 11 having side bars 12 and 13 mounted at the sides thereof and between which the articles to be wrapped are carried as indicated in Fig. 2. The way members 11 are spaced to receive the flights 14 which are arranged in coacting pairs, constituting holders engaging the ends of the sliced loaf. These flights are mounted on a pair of sprocket chains 16, the flights carried by one chain facing in one direction and the flights carried by the other chain facing in the opposite direction. The flights of the two chains are alternated.

The sprockets 17 for these chains are mounted on a drum-like hub 18 pinned to the journal 19 so that by rotating the sprockets on this journal the coacting pairs of flights may be adjusted to and from each other, thereby adapting them to the particular length of loaf or article to be handled. The sprockets are adjustably secured to the hub by means of the screws 20 which engage

segmental slots 21 in the sprockets. By this means the holder flights may be quickly adjusted to support the loaf without undue compression thereon. It will be understood that both sprockets should be adjusted so as to properly center the loaf relative to other operating parts of the machine.

These sprockets described are driven through a train of gears 22, see Fig. 2, which includes a Geneva gear 23 so that the feed conveyer is driven with a step by step movement. The feed conveyer is further supported by the slide rods 27 reciprocating in the bearing on the bracket 28.

The plunger is actuated by the lever 29 to the upper end of which it is connected by the pitman 30, the lever being actuated by the cam 31. The movements are synchronized so that the transfer plunger is actuated while the feed conveyer is at rest. It is also actuated while the feed or elevating plunger 9 is at rest in its lower or initial position. The transfer plunger is recessed at 101 to receive the flights 14 so that the end slices of the loaf are effectively engaged by the transfer plunger.

The elevating or feed plunger 9 is provided with end members 32 between which the loaf is delivered by the transfer plunger. The conveyer side member 12 has a laterally turned guide 33 at its inner end and an adjustable guide 34 is arranged in opposed relation to guide the articles to the feed plunger. The side member 12 is mounted for longitudinal adjustment by means of bolts 35 and thumb nuts 36 so that both guide members to the feed plunger may be adjusted. This is necessary for properly centering the article on the feed plunger. The guide member 34, it will be noted, has a longitudinal slot 37 in its base engaged by the bolt 38.

The feed plunger 9 is actuated in suitably timed or synchronized relation to the movement of the feed conveyer and transfer plunger. This feed plunger delivers the articles to be wrapped to the folder carriage, that is, a carriage for carrying the articles into and through the folding mechanism and supporting them while the folding operations are being performed thereon. This carriage is designated generally by the numeral 39. The details are not illustrated herein but are illustrated in my said application for patent of which this is a division.

In the embodiment shown in Fig. 9 the conveyer sprockets 40 corresponding to the sprockets 17 in the previously described embodiment are provided on the shaft 41. On each sprocket I mount a beveled gear 42 coacting with the planetary gears 43 carried by the hub 44, the hub having radial spindles 45 for the gears 43 and the spindles being supported at their outer ends by the annular member 46.

The shaft 41 has a collar 47 pinned thereto

and has a clamping nut 48 in supporting engagement with the bushing 49 so that by means of this nut the sprockets may be clamped to the shaft 41 as a unit. When it is desired to adjust the flights relative to each other the nut 48 is loosened and this, through the connecting gears described, rotates the other sprocket an equal distance in the opposite direction, thereby simultaneously adjusting both flights of a coacting pair, moving them equal distances toward or from each other. This has the advantage of easier adjustment than the embodiment shown in Fig. 1 to 7, inclusive.

The means for feeding the paper into the path of the article to be wrapped as it is carried upwardly by the feed plunger are not illustrated herein as such means form no part of this invention; and, as stated, I have not attempted to illustrate or describe the wrapping mechanism other than as is deemed desirable to show the relation to the conveyer features to which this application is directed.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. The combination of a conveyer way, a pair of conveyer chains having flight-like holder members disposed in alternating relation, a pair of sprockets for said chains having segmental slots therein, and a member disposed between said sprocket members and to which they are adjustably secured by means of screws engaging said slots.

2. The combination of a way having a longitudinal slot therein, side members disposed at the sides of said way, a pair of conveyer chains having flight-like holder members projecting through said slot in said way in oppositely facing coacting pairs, and an adjusting and driving member for said conveyer chains comprising a pair of sprockets rotatively adjustable relative to each other whereby the holder members may be adjusted to and from each other.

3. The combination of a way having a longitudinal slot therein, side members at the sides of said way, a pair of conveyer chains having flight-like holder members disposed in alternating relation to project through said slot and associated in facing pairs, and means for adjusting the sprocket chains relative to each other whereby the distance between the holder members may be varied.

4. The combination of a way, a pair of endless conveyer members having flight-like holder members thereon disposed in alternating relation, adjacent members coacting to provide a holder, and means for adjusting one of said endless conveyer members relative to the other for varying the spacing between the coacting holder members.

5. The combination of a way, a pair of conveyer chains having holder members dis-

posed in oppositely facing coacting pairs, and an adjusting and driving member for said conveyer chains comprising a pair of sprockets rotatively adjustable relative to each other whereby the holder members may be adjusted to and from each other.

6. The combination of a way, conveyer chains disposed in parallel relation and each having holder members projecting above said way, the holder members of one conveyer chain being disposed in alternating relation to the holder members of the other, and means for adjusting one of the conveyer chains relative to the other whereby the distance between the holder members may be varied.

7. The combination of a way, a pair of endless conveyer members having holder members thereon disposed in coacting pairs, and means for adjusting one of said endless conveyer members relative to the other for varying the spacing between the coacting holder members.

8. In an apparatus of the class described, the combination of a way having a longitudinal slot therein, a pair of conveyer chains having flight-like holder members projecting through said slot in said way in oppositely facing coacting pairs, and means for adjusting said chains relative to each other whereby the holder members may be adjusted to and from each other.

9. In an apparatus of the class described, the combination of a feed conveyer provided with coacting pairs of holders adapted to receive sliced loaves as units, a feed plunger disposed at the side of said conveyer and having end members adapted to receive a sliced loaf as a unit between them, and a transfer plunger acting to transfer the sliced loaves as units from said feed conveyer to said feed plunger.

10. In an apparatus of the class described, the combination of a feed conveyer driven with a step by step movement and provided with a plurality of flight-like holder members disposed in coacting pairs, a reciprocating feed plunger disposed at the side of said feed conveyer and lying in the plane thereof when in its retracted position, said feed plunger having holders at the ends thereof, guide members disposed between said conveyer and feed plunger, a transfer plunger adapted to transfer the articles from said feed conveyer to said feed plunger delivering them between its said holders, said transfer plunger being adapted to pass between said holder members on said conveyer and being notched at its ends to receive the same, and means for actuating said feed conveyer transfer plunger and feed plunger in timed relation.

11. In an apparatus of the class described, the combination of a feed conveyer driven with a step by step movement and provided

with a plurality of flight-like holder members disposed in coacting pairs, a reciprocating feed plunger disposed at the side of said feed conveyer and lying in the plane thereof when in its retracted position, said feed plunger having holders at the ends thereof, a transfer plunger adapted to transfer the articles from said feed conveyer to said feed plunger delivering them between its said holders, said transfer plunger being adapted to pass between said holder members on said conveyer and being notched at its ends to receive the same, and means for actuating said feed conveyer, transfer plunger and feed plunger in timed relation.

12. In an apparatus of the class described, the combination of a feed conveyer driven with a step by step movement and provided with a plurality of flight-like holder members disposed in coacting pairs, a reciprocating feed plunger disposed at the side of said feed conveyer and lying in the plane thereof when in its retracted position, said feed plunger having holders at the ends thereof, guide members disposed between said conveyer and feed plunger, a transfer plunger adapted to transfer the articles from said feed conveyer to said feed plunger delivering them between its said holders, and means for actuating said feed conveyer, transfer plunger and feed plunger in timed relation.

13. In an apparatus of the class described, the combination of a feed conveyer driven with a step by step movement and provided with a plurality of flight-like holder members disposed in coacting pairs, a reciprocating feed plunger disposed at the side of said feed conveyer and lying in the plane thereof when in retracted position, said feed plunger having holders at the ends thereof, a transfer plunger adapted to transfer the articles from said feed conveyer to said feed plunger delivering them between its said holders, and means for actuating said feed conveyer, transfer plunger and feed plunger in timed relation.

14. In an apparatus of the class described, the combination of a way, a pair of endless conveyer members having holder members thereon disposed in coacting pairs, means for adjusting both of said conveyer members relative to each other for varying the spacing between the holders, a transfer plunger reciprocating transversely of said way, a feed plunger disposed at the side of said way and having holders at opposite sides thereof, and adjustable guide members disposed between said conveyer and feed plunger.

15. In an apparatus of the class described, the combination of a way, a pair of endless conveyer members having holder members thereon disposed in coacting pairs, means for adjusting both of said conveyer members relative to each other for varying the spacing be-

tween the holders, a transfer plunger reciprocating transversely of said way, and a feed plunger disposed at the side of said way and having holders at opposite sides thereof.

16. The combination of a conveyer way, a pair of conveyer chains having flight-like holder members disposed in alternating relation, a pair of sprockets for said chains, means for securing said sprockets together so that they rotate as a unit, and a connection for said sprockets whereby they may be uniformly rotated in opposite directions for positioning the holder members of one of the sprocket chains relative to the holder members of the other chain.

17. The combination of a way, a pair of endless conveyer members having holder members thereon disposed in coacting pairs, and means for adjusting said conveyer members relative to each other for simultaneously varying the spacings of the several pairs of coacting holder members.

18. The combination of a way, a pair of conveyer members operatively associated with said way and each having holder members thereon, the holder members of one conveyer member being disposed in alternating relation to the holder members of the other conveyer member, said holder members being disposed in coacting pairs, and means for adjusting the conveyer members relative to each other whereby the distance between the coacting pairs of holder members may be varied.

19. The combination of a way, endless conveyer members disposed side by side in parallel relation below said way and having coacting pairs of holder members operatively associated with said way, and means for adjusting one of said conveyer members relative to the other for adjusting the spacing between the holder members.

20. The combination of a way, and conveyer members disposed in parallel relation and having coacting pairs of holder members operatively associated with said way, one of said conveyer members being adjustable relative to the other for simultaneously varying the spacing between the coacting pairs of holder members.

21. In an apparatus of the class described, the combination of a way having a longitudinal slot, side members disposed at the sides of said way, endless conveyer members disposed in parallel relation below said way and having coacting pairs of flight-like holder members projecting through said slot in said way and traveling between the side members thereof, means for adjusting said conveyer members relative to each other for varying the spacing between the coacting pairs of holder members, a receiving member disposed at the side of said conveyer way, adjustable guide members disposed between said conveyer way and receiving member,

and a transfer plunger reciprocating transversely across said way and adapted to pass between said pairs of holder members for transferring the articles from said way to said receiving member.

22. In an apparatus of the class described, the combination of a way having a longitudinal slot, side members disposed at the sides of said way, endless conveyer members disposed in parallel relation below said way and having coacting pairs of flight-like holder members projecting through said slot in said way and traveling between the side members thereof, and means for adjusting said conveyer members relative to each other for varying the spacing between the coacting pairs of holder members.

In witness whereof I have hereunto set my hand.

CARL LITTLEFIELD.