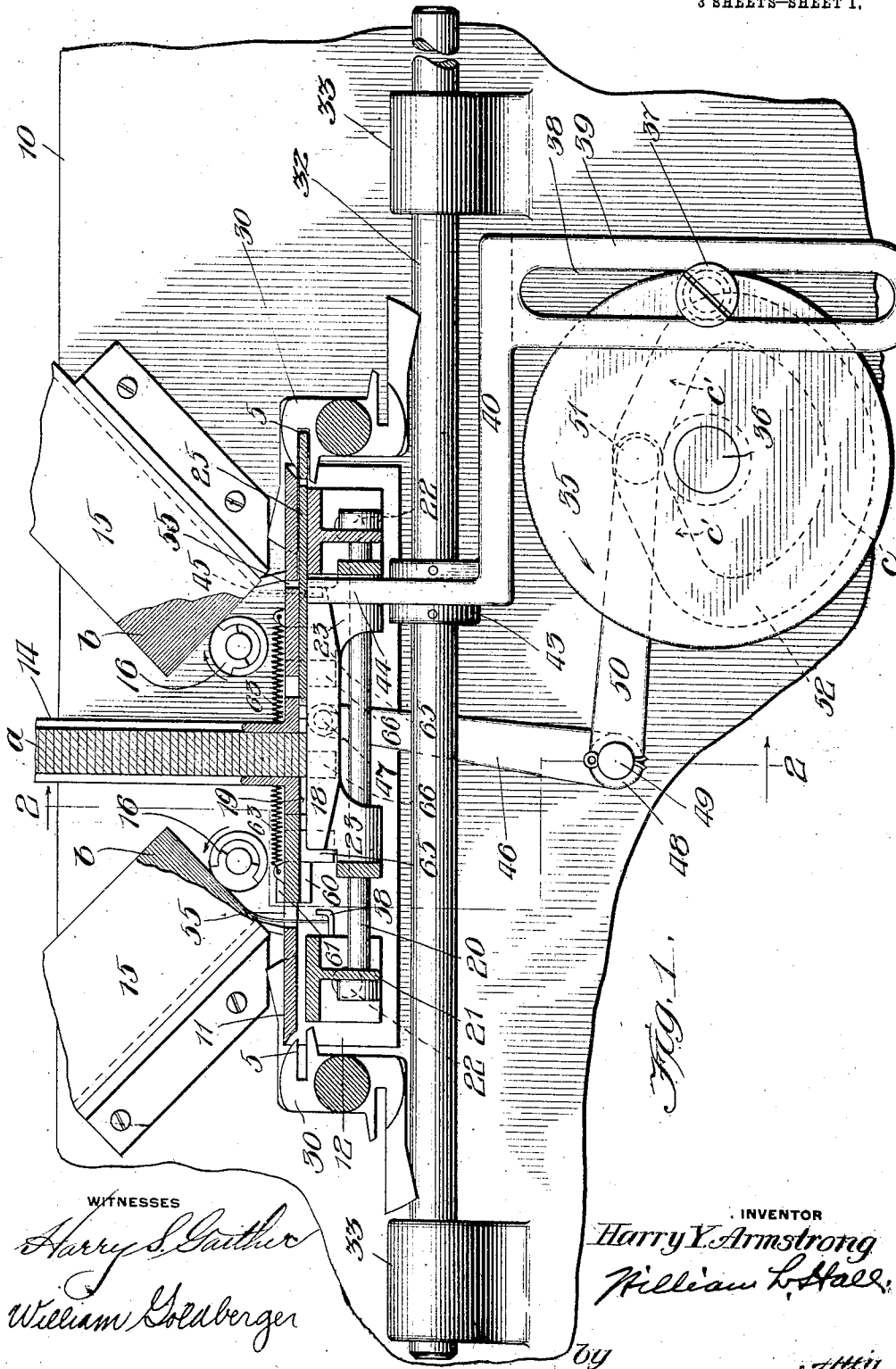


H. Y. ARMSTRONG.  
 FEED MECHANISM FOR WRAPPING AND OTHER MACHINES.  
 APPLICATION FILED JULY 21, 1911.

1,053,963.

Patented Feb. 25, 1913.

3 SHEETS—SHEET 1.



WITNESSES  
*Harry S. Gaither*  
*William Goldberger*

INVENTOR  
*Harry Y. Armstrong*  
*William L. Hall*

by

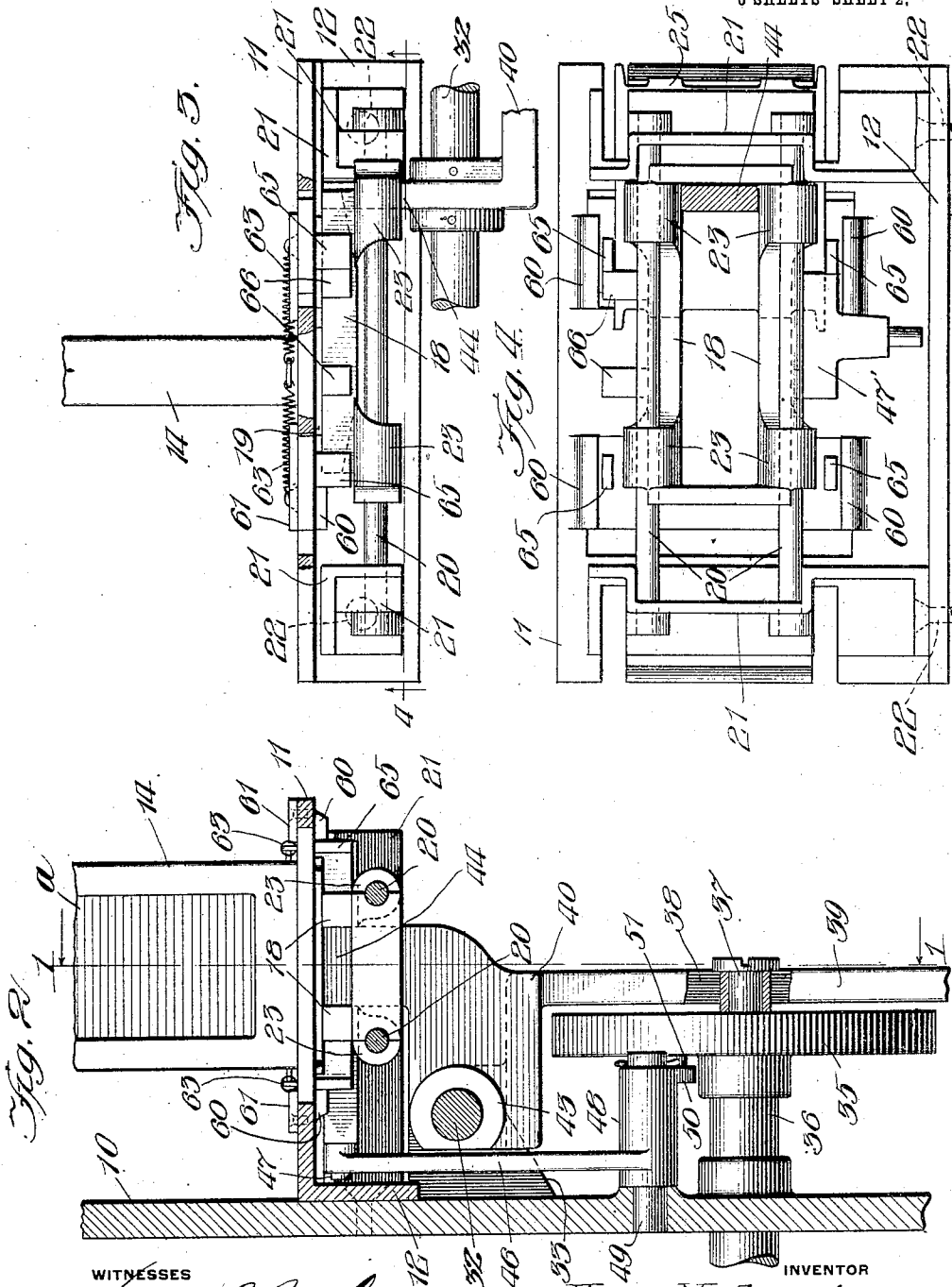
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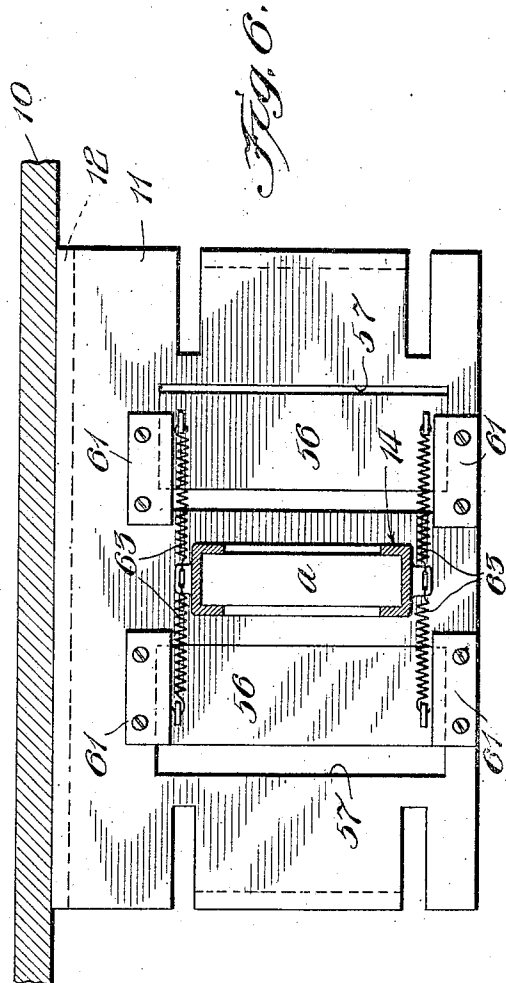
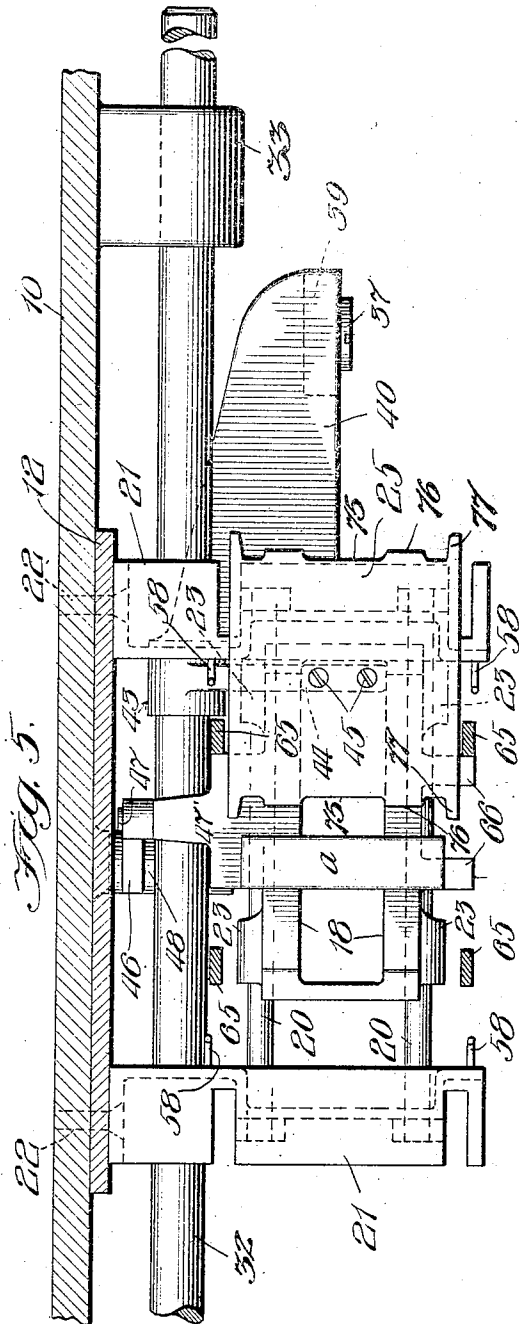
INVENTOR  
*Harry Y. Armstrong*  
 by *William H. Hall*  
*Att'y*

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3 SHEETS—SHEET 3.



WITNESSES  
*Harry S. Gauthier*  
*William Goldberger*

INVENTOR  
*Harry Y. Armstrong*  
 by *William H. Hale*  
*Atty*

# UNITED STATES PATENT OFFICE.

HARRY YARRINGTON ARMSTRONG, OF ELGIN, ILLINOIS, ASSIGNOR TO ARMSTRONG WRAPPING MACHINE COMPANY, OF LOUISVILLE, KENTUCKY, A CORPORATION OF KENTUCKY.

## FEED MECHANISM FOR WRAPPING AND OTHER MACHINES.

1,053,963.

Specification of Letters Patent.

Patented Feb. 25, 1913.

Application filed July 21, 1911. Serial No. 639,719.

*To all whom it may concern:*

Be it known that I, HARRY Y. ARMSTRONG, a citizen of the United States, and a resident of Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Feed Mechanism for Wrapping and other Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in feed mechanisms for wrapping or other machines designed to feed articles from the lower end of a stack of such articles to a wrapping mechanism or other mechanism for further operation thereon. The invention is herein shown as applied to a chewing gum wrapping machine to feeding sticks or cakes of gums from the lower end of a stack to a wrapping mechanism or mechanisms by which the wrappers are wrapped about the gums.

Among the objects of the invention is to provide a feed mechanism of this general character which may be operated at high speed, and which is so arranged as to minimize the shock due to the contact of the movable feed element against the articles, and thereby minimize the liability of crushing or deforming the articles being operated upon.

Another object of the invention is to provide an improved mechanism for alternately feeding articles from the lower end of a stack or pile thereof to wrapping or other mechanisms located at opposite sides of said stack or pile, and thereby increase the capacity of the machine for handling the articles.

Other objects of the invention are to simplify and increase the efficiency of feeding mechanisms of this general character, and the invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

My invention is herein shown as applied to a wrapping machine of the construction illustrated in my co-pending application for United States Letters Patent, Serial Number 639,091 filed on the 19th day of September, 1911, and will be hereinafter specifically described with respect to said ma-

chine; but it will be understood that the description of the specific adaptation of the invention is not intended to limit the spirit and scope of the invention.

In the drawings,—Figure 1 is a fragmentary side elevation of a feed mechanism for wrapping machines embodying my invention, taken on the line 1—1 of Fig. 2. Fig. 2 is a section thereof on the indirect section on the line 2—2 of Fig. 1. Fig. 3 is a fragmentary partial side elevation and partial section of the feed mechanism. Fig. 4 is a bottom plan view of the gum carrier and the parts associated therewith. Fig. 5 is a section on the line 5—5 of Fig. 2, looking downwardly. Fig. 6 is a plan view of the shelf or bracket which supports the various parts of the feed mechanism.

As shown in the drawings, 10 designates a vertical portion of the frame of the wrapping machine and 11 designates a horizontal shelf or bracket which extends laterally therefrom and is attached thereto by screws extending through a flange 12 of the bracket. 14 designates a vertically arranged chute above and supported on said bracket in which sticks of gums *a*, or other articles to be wrapped, are arranged in a vertical stack in such manner that said articles may be fed or removed one at a time from the lower end of the stack.

15, 15 designate wrapper magazines arranged one at each side of the chute 14, each arranged to contain compressed bundles of wrappers *b* that are adapted to be fed one at a time from the magazines into the path of the articles to be wrapped by means of the feed roller 16, as clearly set forth in my aforesaid application.

The gums or other articles *a* of the vertical stack rest upon a carrier 18 beneath the bracket, 11 and which has a limited reciprocatory movement beneath the chute 14. Said carrier constitutes the bottom of the chute and supports the weight of the stack of gums *a*. The carrier 18 is spaced at such distance below the bracket as to constitute between the same and the bracket a horizontal way 19 through which the gums or other articles are delivered from the stack to the wrapping mechanisms. The said carrier is of skeleton form, as best shown in Figs. 4 and 5, it having a central longitudinal opening, and it is supported on and is guided by a pair of guide rods 20 which are

supported at their ends in the frame members 21, 21 arranged below the bracket 11, and attached to the frame, as by means of the screws 22, 22; the said carrier having integrally formed bearings 23, 23 on their lower sides which are apertured for the passage of the guide rods 20 therethrough. The outer ends of the feed slots or ways are formed between the frames 21 and bracket 11, as best shown in Figs. 1 and 3.

25 designates an ejector bar that slides through the feed slot or way 19, said ejector bar serving to deliver the gums or other articles from the stack to the wrapping mechanisms. The ejector bar is herein shown as arranged to deliver the gums alternately from the lower end of the stack *a* to the two mechanisms, and in this construction the ejector bar passes beneath and entirely beyond the chute 14 in each reciprocation thereof so as to feed the next gum of the stack in the next or return movement of said bar. The only parts of the wrapping mechanism herein shown are the wrapping heads 30 which are understood to be operated in the same manner as set forth in my aforesaid prior application and need not be further herein described.

One feature of my invention resides in means for delivering the gums or other articles from a central chute to two wrapping or other mechanisms located on opposite sides of the chute thereof. In such construction the ejector bar slides entirely across the lower end of the stack of gums or other articles in one movement thereof to carry one gum to the wrapping mechanism toward which it travels, and allows another gum to fall into the path of said ejector bar as to be forced from the stack toward the other or opposite wrapping mechanism in the return movement of the ejector bar. The said ejector bar 25 is given motion through the following mechanism: 32 designates a guide rod at the side of the machine below the shelf or bracket 11, said rod being slidably supported in lugs 33 on the vertical frame plate 10. 35 designates a crank disk which is fixed on a rotating shaft 36 and said disk is provided with an eccentric stud 37 which operates in a vertical groove 38 of the yoke 39 of a connecting member 40 that is connected at its other end to the ejector bar in a manner presently to be described. Said connecting member 40 is attached to the guide rod 32, said member being shown as provided with an apertured, hub-like bearing 43 through which the rod extends and to which it is pinned or otherwise secured. The said connecting member is provided at its outer side with an upstanding part 44 which extends upwardly between the side members of the carrier 18 to the under side of the ejector bar and is attached thereto by the screws 45.

The movable carrier is given a limited movement at the beginning of each reciprocation of the ejector bar, in the same direction as said bar, with the result that the inertia due to the changing of the gums *a* from a state of rest to motion is more readily overcome than if the carrier or gum support be stationary, thereby diminishing the shock brought on the gums and reducing liability of crushing or deforming the gums. The means which I have herein shown for thus giving a limited movement to the carrier 18 comprises a lever arm 46 which is pivotally and loosely connected at its upper end to a stud 47 formed on a lateral extension 47' at the inner side of said carrier 18, said lever arm being provided at its lower end with a bearing sleeve 48 which is mounted to rock on short shaft 49 that extends outwardly from the machine frame 10. A second lever arm 50 is made integral with and extends rearwardly from said sleeve 48, and is provided at its rear end with a laterally directed lug 51 which travels in a cam groove 52 formed on the inner face of the disk 35. Said cam groove 52 embraces a concentric portion *c* consisting of approximately one-half of a circle and two equal length eccentric portions *c'*, *c'* which meet each other in the plane of the axis of the disk.

The parts are shown in Fig. 1 with the ejector bar 25 and carrier 18 at one limit of the movement thereof, the ejector bar having delivered a gum into the right hand holding head 30. In the continued movement of the disk 35 the said ejector plate and carrier will travel toward the left hand wrapping mechanism, the ejector bar moving more rapidly than the carrier. The carrier travels in the same direction with the ejector bar through substantially one-quarter of the rotation of the disk 35, (or while the stud 51 is traveling through one-half of the eccentric portions *c'*) and is moving beneath the stack of gums at the time the ejector bar strikes the lower gum of the stack; and will continue to move until the ejector bar engages with and has brought the lowermost gum into motion toward the wrapping mechanism. The carrier remains stationary while the stud 51 is passing through the concentric portion of the cam groove during about one-half of the cycle of operation of the machine. By reason of the movement of the carrier beneath the gum which is to be next ejected from the stack the friction between said lower gum and the carrier is greatly reduced as compared to the conditions which would exist if the carrier be stationary when the ejector bar strikes the edge of the gum.

The wrappers *b* are discharged by the feed rollers 16 downwardly through openings 53 formed between sliding spring controlled plates 56 and outer edges of the open-

ings 55 formed in the bracket. Said wrappers are deposited across the gum way or slot upon supports 58 which extend inwardly from the frame members 21. The plates 57 are narrower than the openings 55 in the bracket 11 which receives them and the ends of the plates 56 are slidingly sustained between depressed portions 60, 60 at the ends of the openings in the brackets and cap plates 61 secured to the bracket. The movable plates 56 are drawn by the springs 63 toward the inner sides of the openings in the brackets, as shown at the left side of Fig. 6. They are forced out toward the outer sides of the openings 55 to partially bridge the outer sides of said openings when the gums or other articles are delivered to the folding heads by means of depending lugs 65 which are engaged by sides of the extension 47' at one side of the carrier and laterally extending lugs 66 at the opposite side of the carrier.

The ejector 25 is provided at its ends, when it comprises a double ended ejector, or at one end when consisting of a single ended ejector, with the recesses 75, and is provided at the sides of said recesses, immediately over the side rails or supports of the bracket 18, with projections 76 which engage the edges of the article as the ejector slides through the bottom of the chute. The recesses 75 constitute clearance spaces through which may be discharged fragments of gum or other articles that may break off from said articles and thereby prevent the fragments from clogging the gums or articles in said way. Said ejector is also provided at the sides of its ends with horns 77 which engage the ends of the gums or other articles and prevent said gums or articles from moving endwise, or laterally with respect to the travel of the ejector when under the influence of and being moved by the ejector.

The ejector member 25 and the carrier 18, which latter constitutes the bottom of the chute and which supports the stack of articles in the chute, may be otherwise arranged and organized with respect to each other to produce the result of giving movement to the carrier or support just before the ejector member, which is located above said carrier or support, strikes the edges of the articles in the bottom of the chute.

Other variations may be made within the spirit and scope of the invention, and the invention is not limited to the particular details herein shown except as to the claims in which said details are specifically set forth.

I claim as my invention:—

1. A feeding mechanism comprising a reciprocable carrier for a stack of articles, a reciprocable ejector movable relatively to the carrier and located in the plane of the

lowermost article of the stack, with means for actuating the ejector to push the articles one at a time from the bottom of the stack and separate means for giving movement to the carrier, constructed to actuate the same during the first part only of the movement of the ejector.

2. A feeding mechanism embracing means to confine a stack of articles, a rectilinearly reciprocable carrier to support the stack, an ejector for ejecting the articles one at a time from the bottom of the stack, and separate means for giving movement to the ejector and to the carrier, constructed to move the carrier during the first part of the ejecting movement of the ejector.

3. A feeding mechanism embracing an upright chute having a horizontally movable bottom constituting a carrier upon which the articles in the chute are supported, a horizontally reciprocable ejector reciprocable through the lower end of the chute and movable independently of the carrier, and separate means for giving movement to said ejector and to said carrier.

4. A feeding mechanism embracing a bracket or table, a chute supported thereon, a carrier movably mounted beneath the bracket to constitute a support for the articles in the chute and spaced from the bracket to form a horizontal way, an ejector slidable through said way and through the bottom of the chute and means for giving positive and independent movement to the ejector and to the carrier.

5. A feeding mechanism embracing a bracket or table, a chute supported thereon, a carrier constituting a support for the articles in the chute and spaced from the bracket to constitute a way, guide and supporting rods supported beneath said bracket on which said carrier is slidably mounted, an ejector movable relatively to the carrier slidable through said way and the lower end of said chute and means for giving positive movement to said ejector and carrier, arranged to bring the carrier into action just before the ejector strikes the articles to eject them from the lower end of the chute.

6. A feeding mechanism embracing a bracket or table, a chute supported thereon, a carrier movably mounted beneath the bracket to constitute a support for the articles in the chute and spaced from the bracket to form a way, an ejector slidable through said way and through the bottom of the chute, a rotative disk, a connecting member actuated by the disk and attached to the ejector to give movement to the latter, said disk being provided with a cam groove and a lever device connected to said carrier and having a stud which travels in said cam groove.

7. A feeding mechanism embracing a bracket or table, a chute supported thereon,

a carrier movably mounted beneath the table to constitute a support for the articles in the chute and spaced from the bracket to form a way, an ejector slidable through said way and through the bottom of the chute, a rotative disk, a connecting member attached to the ejector, a guide member having sliding engagement with a stationary part of the machine to which said connecting member is attached, said connecting member having a slotted portion, an eccentric stud on the disk engaging said slotted portion of the connecting member, the disk being provided with a cam groove, and an actuating lever for the carrier connected at one end to the carrier and provided at its other end with a stud to engage said cam groove.

8. A feeding mechanism embracing a bracket or table, a chute supported thereon, a movable carrier constituting a support for the articles in the chute and spaced from the bracket to constitute a way, an ejector slidable through said way and the lower end of said chute, means for giving movement to said ejector and carrier, arranged to bring the carrier into action just before the ejector strikes the articles to eject them from the lower end of the chute, said bracket being provided with an opening through which wrappers are fed transversely across the path of the ejector, the inner side of which opening comprises a plate movable in the plane of the bracket, yielding means to normally hold the plate toward the chute, and interacting parts on the carrier and said plate to move the plate with the carrier to partially close the wrapper feed opening.

9. A wrapping machine comprising two wrapping mechanisms, a chute therebetween to support a stack of articles, an ejector slidable through and beyond the chute in two opposite directions to deliver the articles from the chute alternately to the two wrapping mechanisms, means for giving movement to said ejector, a carrier movably mounted beneath the chute to constitute a support for the articles therein, and means for giving movement to the carrier in both directions of movement of the ejector, constructed to bring said carrier in motion in both directions of movement of the ejector just before the ejector ejects the articles from the stack.

10. A feeding mechanism embracing a bracket or table, a chute supported thereon, a carrier movably mounted beneath the bracket to constitute a support for the articles in the chute and spaced from the bracket to constitute a way, two wrapper feeding mechanisms located one at each side of the chute and above the bracket, said bracket being formed with openings through which the wrappers are delivered transverse to the

plane of said way, an ejector slidable in said way and through the bottom of said chute to deliver the articles from the chute alternately to the wrapping mechanism and means for giving movement to the ejector member and to said carrier, arranged to bring the carrier into motion in each direction of movement of said ejector just before the ejector strikes the lowermost article in the bottom of the chute.

11. A feeding mechanism embracing a bracket or table, an upright chute supported thereon, there being a horizontal way beneath the bracket into which the articles are delivered from the chute, an ejector slidable through said way to eject the lowermost articles from the chute, said bracket being provided with an opening through which wrappers are fed transversely across said way, the inner side of which comprises a plate movable in the plane of the bracket toward and from the bracket, yielding means to normally hold the plate toward the chute, and means to move the plates outwardly away from the chute during the ejecting movement of said ejector to partially close said wrapper feed opening.

12. A feeding mechanism for wrapping machines embracing a bracket or table, a chute, there being a way beneath the chute into which the articles are delivered from the chute, an ejector slidable through said way to eject the lowermost articles from the chute, said bracket being provided with an opening through which the wrappers are fed transversely across said way, with means for enlarging said opening during the time the wrappers are being fed therethrough and for restricting said opening during the time the articles are fed through the way across the path of said wrappers.

13. A feeding mechanism for wrapping machines comprising a chute for a stack of articles and a movable bottom therefor on which the stack is supported, combined with an ejector member elevated above the level of the movable bottom and in the plane of the lowermost article of the stack and movable independently of the bottom of the chute to engage the rear edges of the articles in the bottom of the chute to eject them therefrom, with independent means for positively moving the said bottom and said ejector.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 22nd day of May A. D. 1911.

HARRY YARRINGTON ARMSTRONG.

Witnesses:

W. L. HALL,  
WILLIAM GOLDBERGER.