

No. 757,667.

PATENTED APR. 19, 1904.

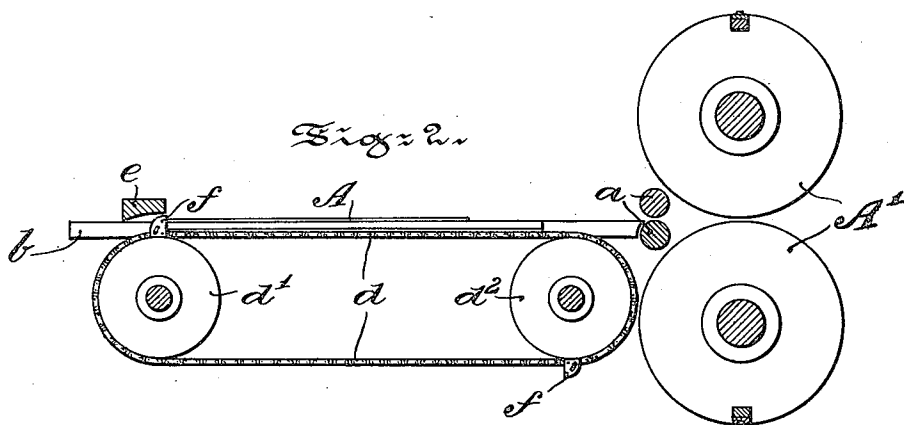
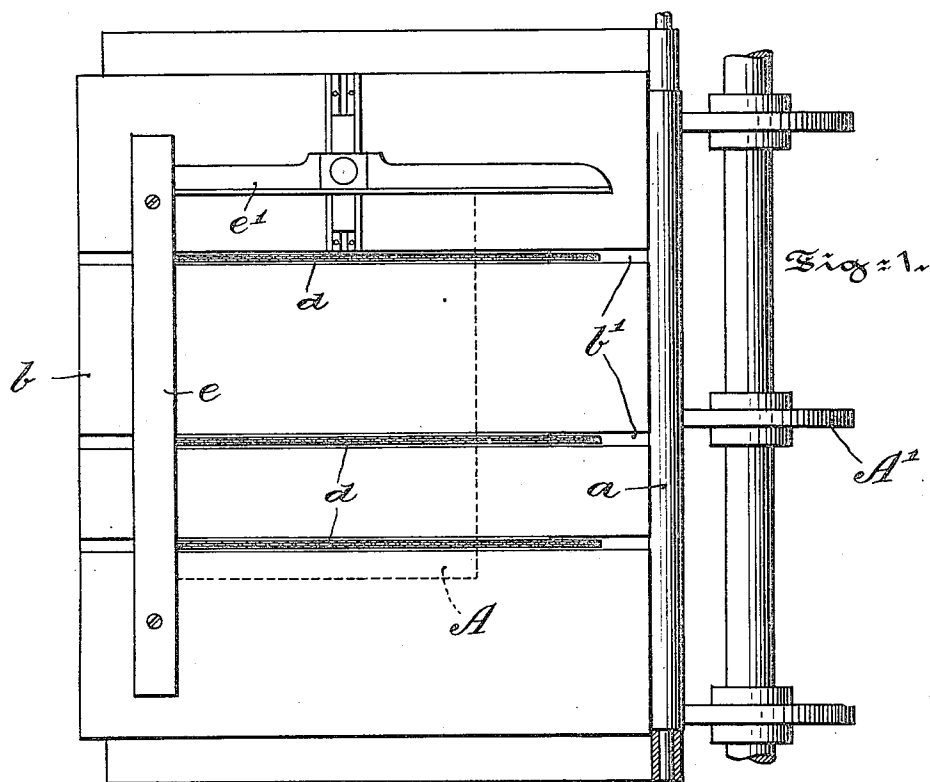
L. A. MAYALL.

MECHANISM FOR FEEDING THIN FLAT FLEXIBLE BLANKS.

APPLICATION FILED AUG. 26, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
 Jas. C. Woburnsmith
 Thomas M. Smith.

Inventor:
 Lewis A. Mayall,
 By J. Walter Douglas
 Attorney.

No. 757,667.

PATENTED APR. 19, 1904.

L. A. MAYALL.

MECHANISM FOR FEEDING THIN, FLAT, FLEXIBLE BLANKS.

APPLICATION FILED AUG. 26, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

Fig: 3.

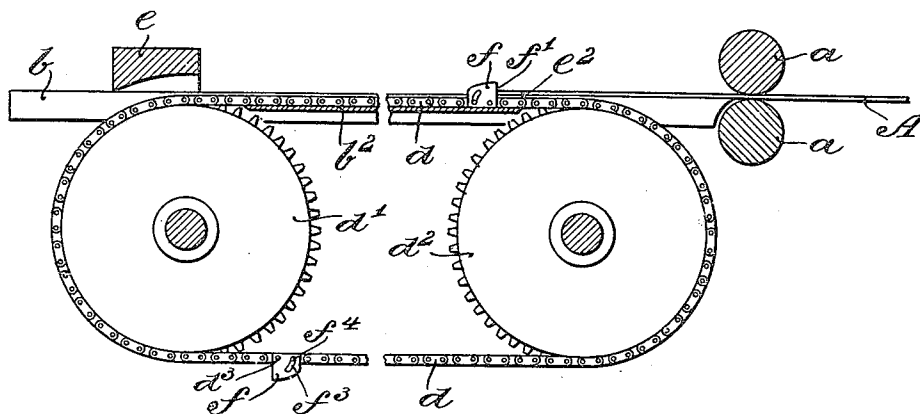


Fig: 4.

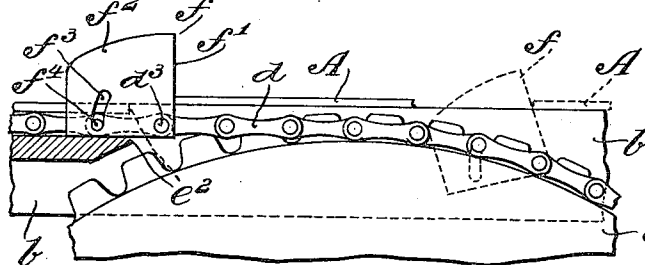


Fig: 5.

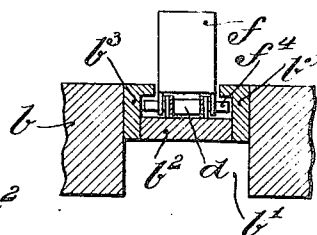


Fig: 6.

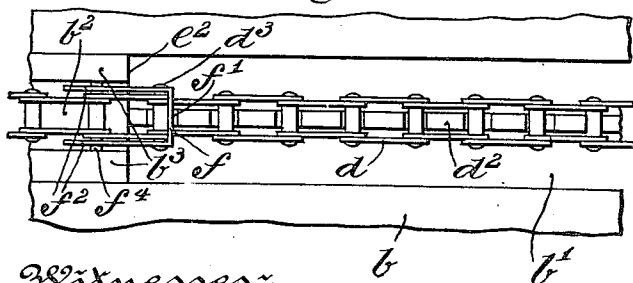
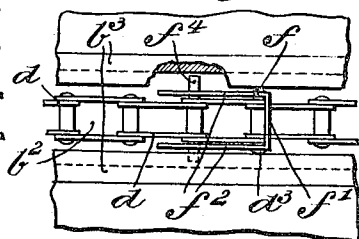


Fig: 7.



Witnesses:
 Jas. C. Wolensmith
 Thomas M. Smith

Inventor:
 Lewis A. Mayall,
 By J. Walter Douglas
 Attorneys

UNITED STATES PATENT OFFICE.

LEWIS A. MAYALL, OF PHILADELPHIA, PENNSYLVANIA.

MECHANISM FOR FEEDING THIN FLAT FLEXIBLE BLANKS.

SPECIFICATION forming part of Letters Patent No. 757,667, dated April 19, 1904.

Application filed August 26, 1903. Serial No. 170,785. (No model.)

To all whom it may concern:

Be it known that I, LEWIS A. MAYALL, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Mechanism for Feeding Thin, Flat, Flexible Blanks, of which the following is a specification.

My invention has relation to a mechanism for feeding thin, flat, flexible blanks—such, for instance, as card or paste board blanks—in a machine, wherein such blanks are to be operated upon; and in such connection it relates to the construction and arrangement of parts constituting such a mechanism.

In the feeding of relatively thin and flexible flat blanks toward, for instance, a creasing mechanism in machines for creasing paper or paste board blanks it has heretofore been found when endless chains or conveyers were utilized to propel the blank across a flat surface to gripping and feeding rollers that as the chain or conveyer left the horizontal path to travel in a circular path around the driving-sprockets a temporary increase of the speed of the chain or conveyer occurred, and this resulted in the feeding of the blank by the conveyers into the feed-rollers at a speed greater than that at which said rollers were rotating. As a result the blank was buckled and broken by the conveyers, and many blanks were thereby rendered unfit for further manipulation in the machine.

The principal object of my present invention is to provide, in conjunction with feed-rollers rotating at a predetermined speed, a conveying or feeding mechanism consisting of one or more endless bands or chains carrying the conveyers and so arranged that as the conveyers of said chains pass from a horizontal to a circular path in traveling over the sprocket driving the chain the speed of said conveyer remains normal and equal to the speed of rotation of the feed-rollers.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a top or plan view of the feeding

mechanism for a paper-creasing machine, said mechanism embodying main features of my invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a view corresponding to Fig. 2, but enlarged. Fig. 4 is a detail view, still further enlarged, illustrating in section the passage of a conveyer from its horizontal path to a circular path around a sprocket. Fig. 5 is a top or plan view of Fig. 4. Fig. 6 is a cross-sectional view of the conveying-chain; and Fig. 7 is a top or plan view of Fig. 6, but partly broken away to more clearly illustrate the construction of a conveyer and its connection with the chain and of the table over which it travels.

In the drawings the conveying or feeding mechanism is illustrated as applied to a creasing-machine wherein pasteboard or similar blanks are fed to creasing-rolls. It is of course to be understood that the conveying mechanism may be applied to any machine wherein thin flat flexible blanks are to be fed to parts of the machine for finishing or manipulating such blanks.

Referring to the drawings, *a a* represent the feed-rollers of the machine, driven by any well-known means, (not shown,) so as to rotate at a predetermined speed and to grip and feed the blank *A* positively through the machine. In rear or to the right of these feed-rollers *a a* are the creasing-rolls *A'*, between which the blank *A* passes to receive its initial crease.

To the left or in front of the feed-rolls *a a* is arranged the conveying mechanism embodying the main features of my present invention. This mechanism comprises a table *b* or similar flat support, having in its upper surface one or more longitudinally - arranged grooves *b'*. From each groove *b'* is arranged to travel the upper portion of an endless chain *d*. This chain *d* travels around two sprockets *d'* and *d''* and has a return or lower portion traveling below the table *b*. The chains *d* travel from left to right in the grooves *b'* of the table, and the point at which each chain emerges from its circular path around the first sprocket *d'* into the horizontal path across the table is covered by a transverse bar or strip *e*, which forms, in conjunction with an adjust-

able bracket e' at right angles to the strip e , a guide into which the blank A is fitted prior to its propulsion over the table b . From a point below the strip e to a point e^2 , at which the chain d leaves its horizontal path across the table to travel around the second sprocket d^2 , each groove b' of the table is fitted with a box, comprising a base b^2 and flanged side walls b^3 to form a channel-way across the table in which the chain d may travel. At appropriate points in the chain d are secured the conveyers f . Each conveyer f consists of a metallic strip bent to form an upright pushing-face f' , and two side wings f^2 , projecting at right angles thereto and to the rear thereof, as clearly illustrated in Figs. 4, 5, 6, and 7. The side wings f^2 of the conveyer f project alongside the links of the chain d and below the pintles of said chain. To one pintle d^3 of a link of said chain d the conveyer f is pivoted at the lower corner adjacent to the pushing-face f' . The rear portion of each side wing f^2 is slotted, as at f^3 , to receive a pin f^4 , which forms the second pintle for the same link of said chain d , but projects slightly beyond each side of the said link. The slot f^3 is so cut that it forms the arc of a circle described from the pintle d^3 of the link. While the conveyer f travels in the box formed by the base b^2 and flanged walls b^3 it is maintained in vertical position, as indicated in full lines in Fig. 4, by reason of its side wings f^2 resting upon the base b^2 . When, however, the conveyer f passes beyond the box-like channel-way, it tilts upon the pintle d^3 backward from the direction in which the chain is traveling, and its face f' slides backward and downward away from the edge of the blank A , as illustrated in dotted lines in Fig. 4. By reason of the tilting the conveyer f slackens in its pushing force upon the blank A at the moment when its speed is being increased—that is, at the point where the conveyer f leaves the horizontal path and enters into its circular path around the sprocket d^2 . It follows, therefore, that the decrease of the pushing force exerted by the conveyer f upon the blank A neutralizes the increase of speed imparted to the conveyer as it leaves the horizontal path, and hence the feeding of the blank to the rolls $a a$ is uniform or constant. No buckling or tearing of the blank A can therefore result when this construction and arrangement of the conveyer f and chain d are used. The tendency of the chain d to

rise above the face of the table b under strain exerted in pushing the blank A across the table b is avoided by the pin f^4 being confined below the table b in the channel-way by the flanged side walls b^3 of the said channel-way.

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A conveying mechanism for thin, flat flexible blanks, comprising two feed-rolls positively driven at predetermined speed and a table arranged in front of said feed-rolls, in combination with an endless chain arranged to travel in a horizontal path across the table toward the feed-rolls in a groove formed in said table, two sprockets arranged below the table and around which the chain travels with accelerated speed in a circular path, a conveyer carried by said chain, and means whereby said conveyer may tilt backward and downward contrary to the direction in which the chain is traveling when said chain leaves its horizontal path to thereby decrease in pushing force sufficient to neutralize the acceleration in speed of the chain.

2. A conveying mechanism, comprising an endless chain, two sprockets around which the chain travels in a circular path, and a table having a channel-way, wherein the chain travels in a horizontal path, in combination with a conveyer, comprising a front pushing-face and two side wings projecting rearwardly from said face, said side wings being slotted, and said conveyer being pivotally connected adjacent to its front face with one pintle of one link of said chain and slottedly connected at its side wings with the other pintle of said link, substantially as and for the purposes described.

3. In an endless conveying mechanism arranged to travel partly in a horizontal and partly in a circular path at varying speeds, means, whereby when the conveyer enters into its circular path under accelerated speed its conveying-surface recedes to neutralize said accelerated speed in pushing the article to be conveyed.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

LEWIS A. MAYALL.

Witnesses:

J. WALTER DOUGLASS,
THOMAS M. SMITH.