

No. 733,460.

G. H. CORMACK.

PATENTED JULY 14, 1903.

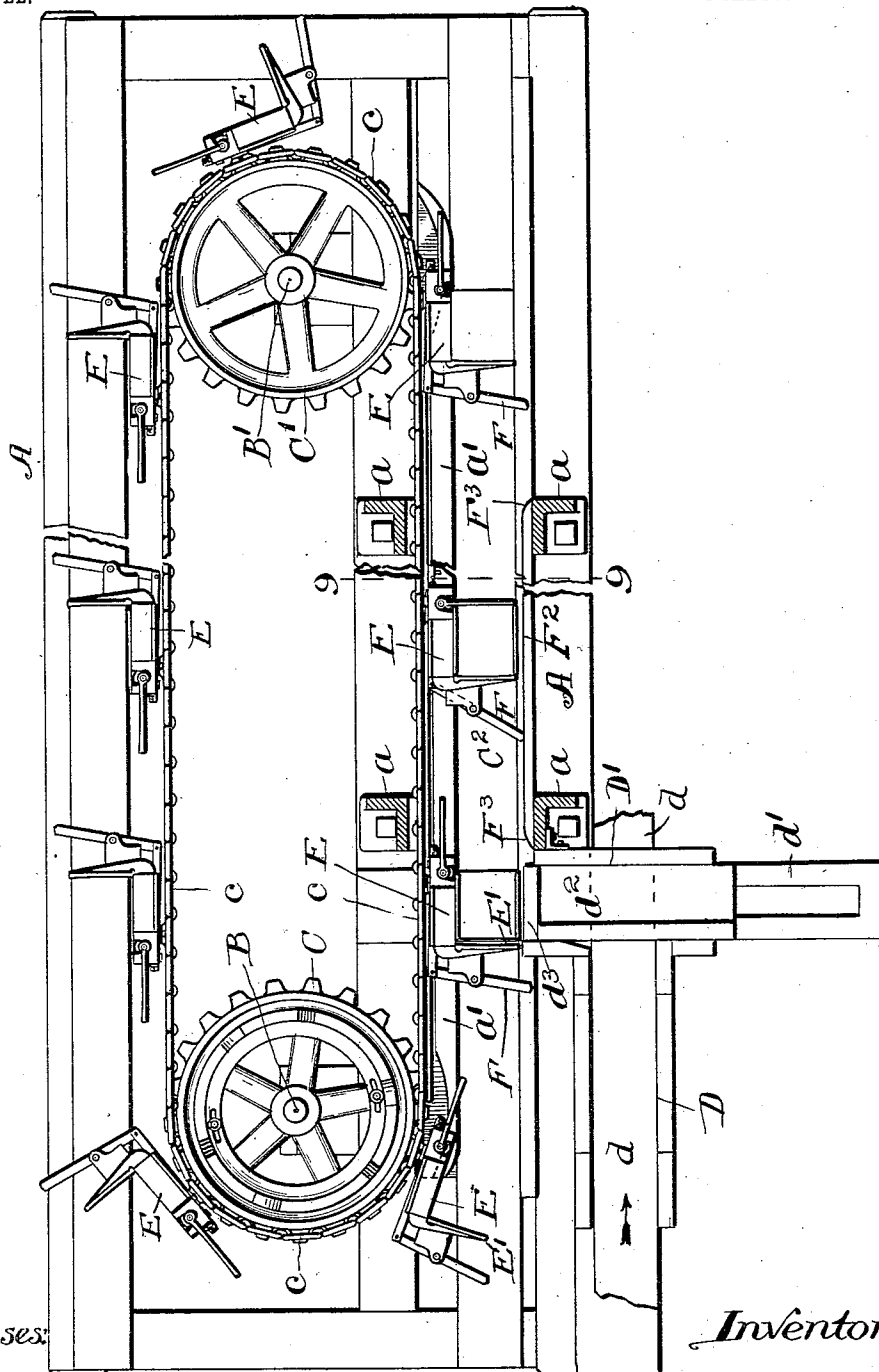
CARTON HOLDER FOR MACHINES FOR FOLDING AND GLUING THE END  
FLAPS OF CARTONS.

NO MODEL.

APPLICATION FILED JULY 1, 1902.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

Chas. O. Shurvey,  
S. Bliss.

Inventor:

George H. Cormack,  
by H. P. Bittner,  
Atty.

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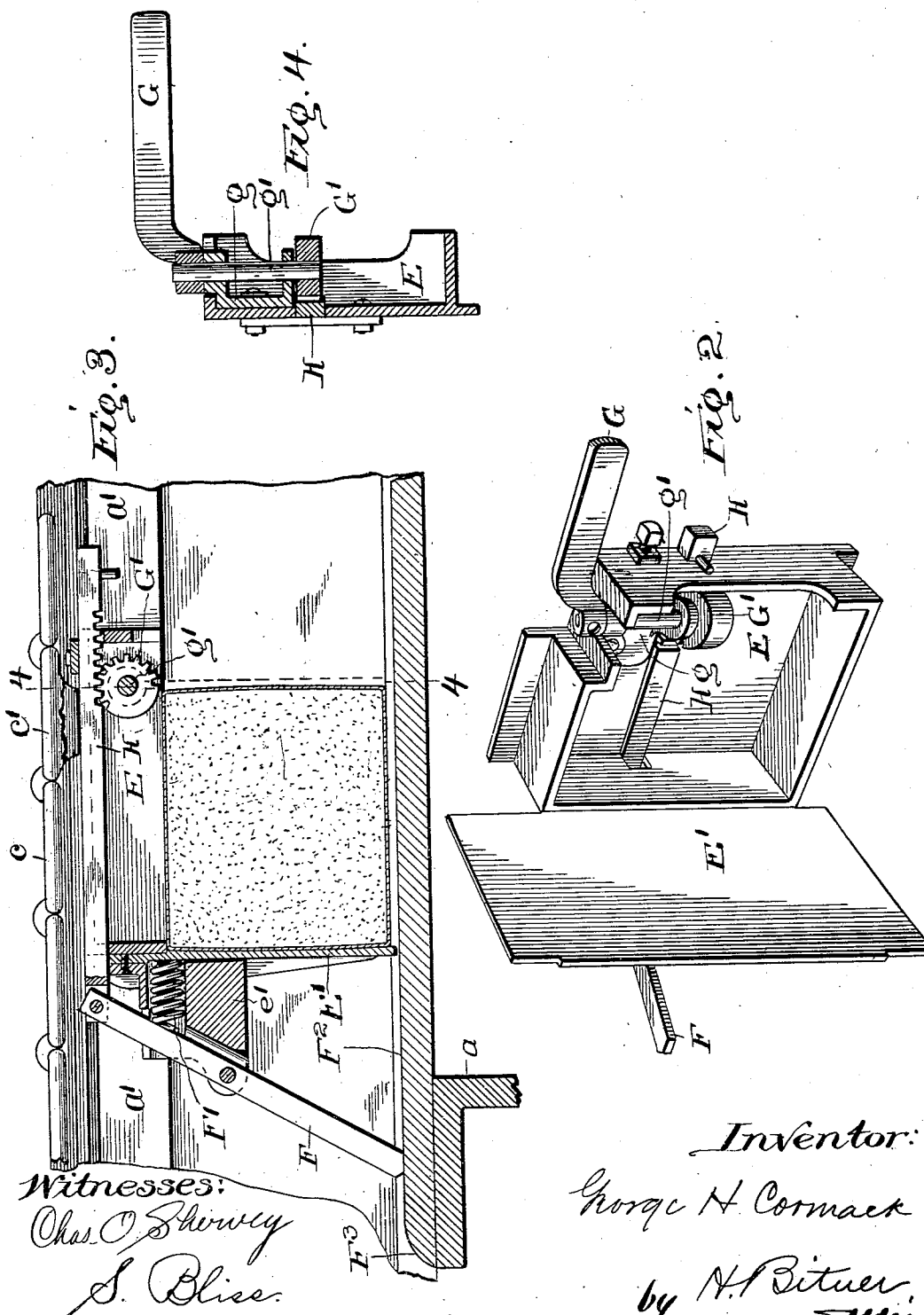
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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

Fig. 6.

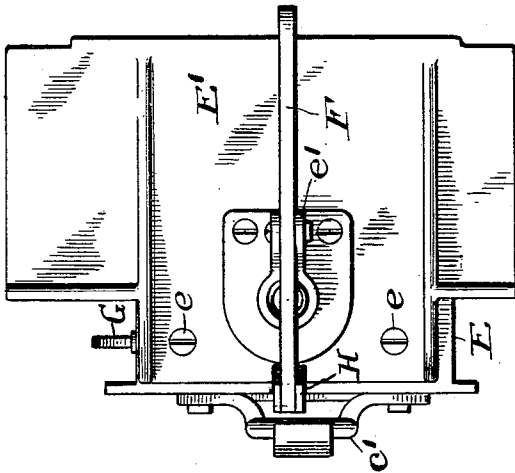


Fig. 8.

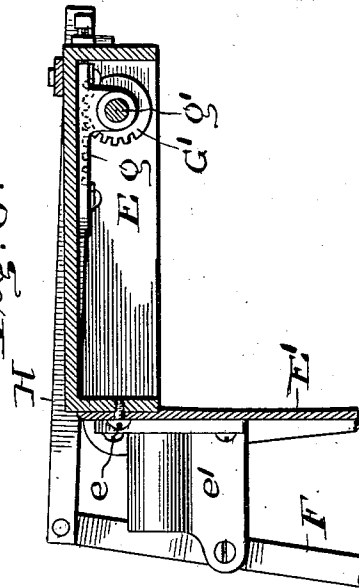


Fig. 5.

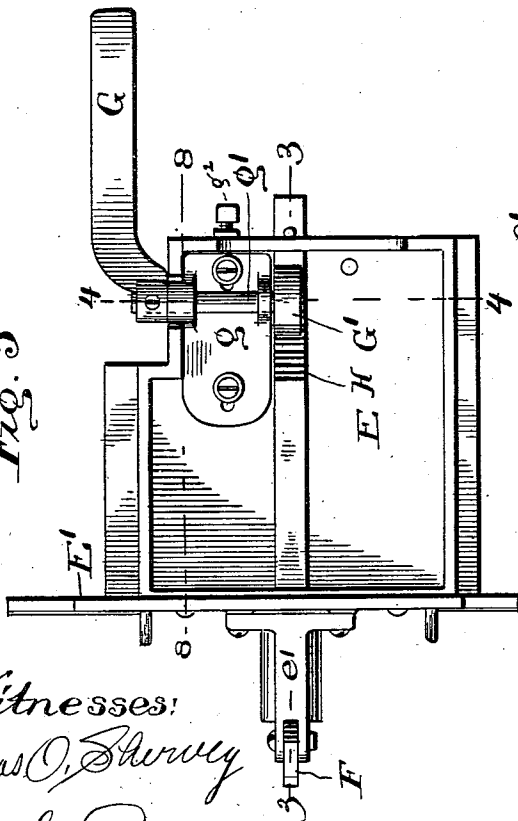
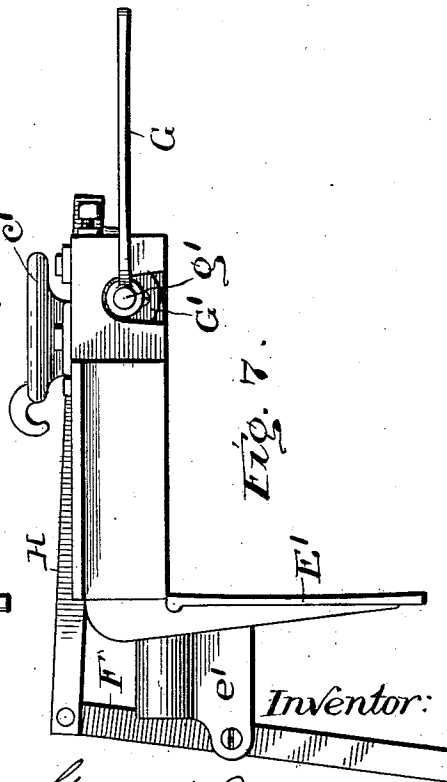


Fig. 7.



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PATENTED JULY 14, 1903.

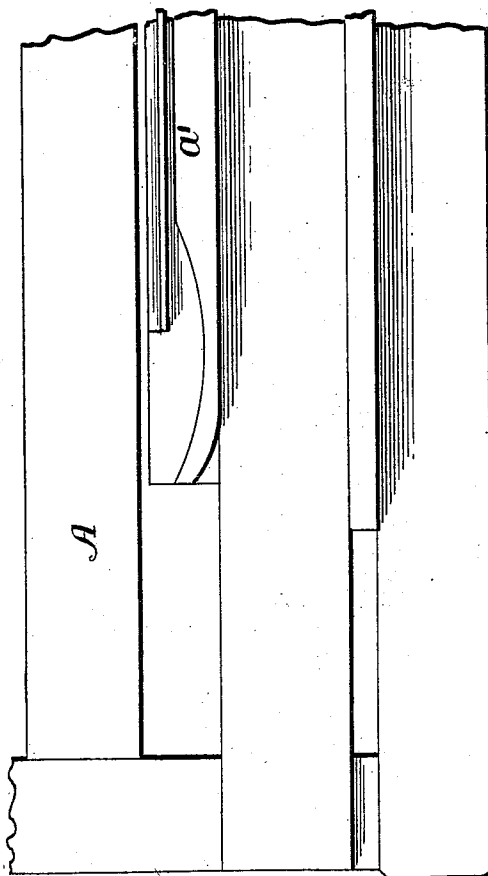
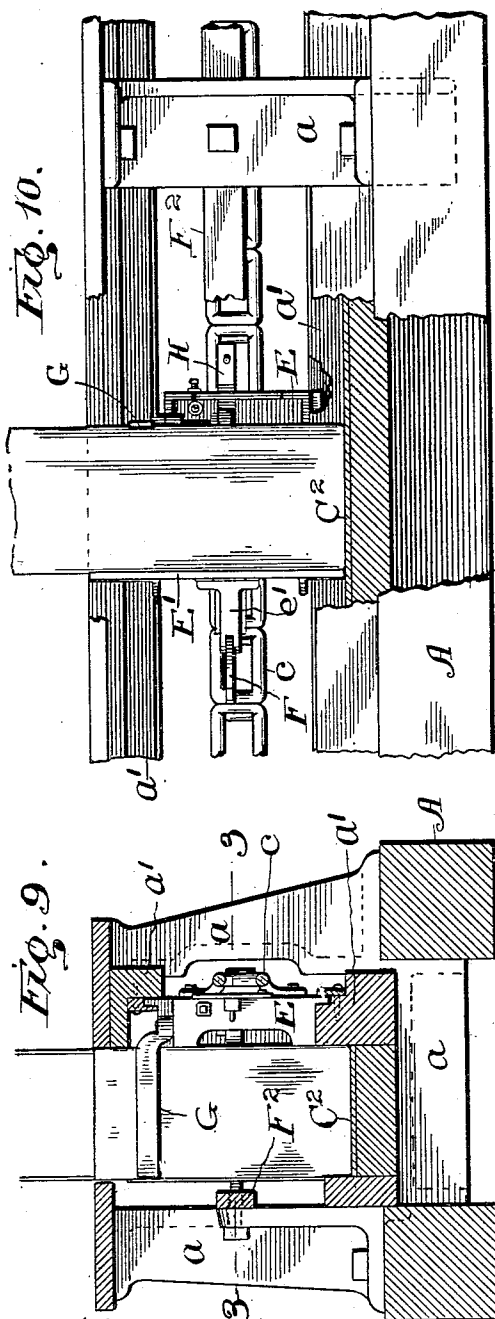
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4 SHEETS—SHEET 4.



Witnesses:  
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by 147 Peter  
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# UNITED STATES PATENT OFFICE.

GEORGE H. CORMACK, OF ROCKFORD, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO ISAAC PIESER AND CHARLES G. LIVINGSTON, OF CHICAGO, ILLINOIS.

CARTON-HOLDER FOR MACHINES FOR FOLDING AND GLUING THE END FLAPS OF CARTONS.

SPECIFICATION forming part of Letters Patent No. 733,460, dated July 14, 1903.

Application filed July 1, 1902. Serial No. 113,886. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. CORMACK, a citizen of the United States of America, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Carton-Holders for Machines for Folding and Gluing the End Flaps of Cartons, of which the following is a specification.

My invention relates to certain new and useful improvements in carton-holders for machines for folding and gluing the end flaps of cartons; and its object is to produce a holding device for filled cartons for use in connection with machines of the type heretofore in use.

Reference is made to the application of Charlie Redd, now pending in the Office, filed February 7, 1901, and allotted Serial No. 46,319, on machines for closing and sealing up the ends of cartons. The framework of the machine herein shown and its general operation are identical with those of Redd's application, and my invention consists only in an improved substitute for the conveying wings or paddles indicated in his drawings by the letter D. Only such portions of the machine are shown herein as are necessary to show in its entirety my particular invention, none of the folding or gluing mechanisms being shown.

Reference is also had in this specification to the application filed on even date with this and allotted Serial No. 113,920 on apparatus for folding the first flap of cartons, the application being made by Redd and myself as joint inventors.

In the drawings, Figure 1 is a top plan of the frame of the machine, showing the conveyer-belts and my improved carton-holders, the middle portion of the machine being broken away and all of the parts above the holders removed. Fig. 2 is a perspective of my carton-holder. Fig. 3 is a horizontal section in the line 3 3 of Figs. 5 and 9. Fig. 4 is a transverse section in the line 4 4 of Figs. 3 and 5. Fig. 5 is a side elevation of the holder. Fig. 6 is a rear elevation. Fig. 7 is a top plan. Fig. 8 is a section in the line 8 8 of Fig. 5

looking downward. Fig. 9 is a section in the line 9 9 of Fig. 1. Fig. 10 is a side view of the parts shown in Fig. 9 with a portion broken out; and Fig. 11 is a plan view of a portion of the frame of the machine, taken at the left end of the machine and showing how the guides are cut away to permit the carton-holder to swing around the curve at that end of the machine.

Referring to the drawings, A is the framework, consisting of the necessary longitudinal and transverse members to provide the proper support for the various parts of the mechanism. Suitably journaled in the frame of the machine are two shafts B B', the shaft B' being driven by any suitable mechanism. Upon the upper end of the shaft B is a sprocket-wheel C, upon which runs a conveyer-chain c, extending longitudinally of the machine and running over a sprocket-wheel C', which is secured upon the vertical shaft B'. At intervals along the chain are secured the carton-holding devices, the construction of which will be described more particularly later. Upon the frame of the machine are secured a series of trough-castings a a, which are clearly shown in Fig. 9. These castings support two guides a', which hold the carton-holder in its path. These guides, of course, run longitudinally of the machine and they form substantially a trough, through which the carton-holder and cartons pass, and above this trough are located folding and gluing devices which are not shown herein, but which are clearly shown and described in the specification of Redd referred to. A feed-trough D is supported at one end upon the framework of the machine and extends therefrom any desired distance to the point in which the packages are to be brought, and this trough is preferably of sufficient length to accommodate any accumulation of packages when the machine is run to its fullest capacity. Along the bottom of this trough runs a conveyer-belt d, driven as may be desired, and operating in the ordinary way. The belt moves along the bottom of the trough in the direction shown by the arrow and empties into a feed-chute D'. This feed-chute con-

tains in a laterally-projecting portion  $d'$  a feed-slide  $d^2$ , the forward part of which,  $d^3$ , pushes the packages laterally from the feed-belt into the feed-chute. The details of this construction are not shown here, as they are clearly set forth in the application of Redd heretofore referred to, and they do not form an essential portion of my invention. By suitable mechanism the feed-slide  $d^2$  is operated at the proper intervals to advance one of the cartons from the feed-chute  $D'$  to the conveying mechanism. This operation is so timed that one of the cartons is thrust out every time one of my carton-holders passes the end of the feed-chute.

When the carton is forced out of the feed-chute  $D'$ , it passes upon a conveyer-belt  $C^2$ , the function of which is to move the cartons at a reasonable speed and prevent friction upon their bottoms. The operation of this conveyer-belt  $C^2$  is described in detail and claimed in the joint application of Redd and myself heretofore referred to.

The carton-holder proper is constructed substantially as follows: A hollow metal framework  $E$  has secured to one side of it a link  $c'$ , Fig. 7, and this link is secured in and forms part of the conveyer-chain  $c$ . To the rear of this hollow box-like frame  $E$  is secured a vane  $E'$  by screws  $e$ , and this vane extends laterally from the box on the side opposite to the conveyer-chain  $c$ . The function of this vane is to bear against and propel the cartons after they are pushed out of the feed-chute. To the vane  $E$  is secured a bracket  $e'$ , to which is pivoted a lever  $F$  of the first order. Inside of the hollow frame  $E$  is a bracket  $g$ , bearing a shaft  $g'$ , which extends vertically from the frame through a slot in its side. Upon the upper end of this shaft  $g'$  is an arm  $G$ , and upon the opposite end of the shaft is a segmental pinion  $G'$ , engaging a rack-bar  $H$ , which is pivotally connected at its opposite end with the end of the lever  $F$ . This arrangement of parts is such that motion backward of the end of the lever  $F$  removed from the conveyer-chain will move the rack-bar  $H$ , rotating the pinion  $G'$  and shaft  $g'$ , thereby swinging the arm  $G$  through an arc of ninety degrees, so that it will come in contact with and firmly hold a carton, pressing the same against the vane  $E'$  and preventing any motion of it with respect to the conveyer. A spring  $F'$  holds the lever  $F$  normally in such a position that the arm  $G$  is not in contact with the carton—that is, it holds it firmly in the position shown in Fig. 7. It will be observed from Fig. 9 that the guides  $a' a'$ , heretofore referred to, exactly fit the frame  $E$  and absolutely guide its forward motion. A bolt  $g^2$  extends through the casing  $E$  and into contact with the bracket  $g$ , the bracket being capable of a limited longitudinal movement upon its supporting-screws to enable the holder to accommodate itself to different sizes of cartons.

In the operating-trough, heretofore referred to, upon the side farthest removed from the conveyer-belt is a cam-surface  $F^2$ , having beveled ends  $F^3$ . (See Figs. 1 and 3.) The operation of this cam-surface is as follows: When the package is pushed out of the feed-chute  $D'$ , it comes in contact with the vane  $E'$  of the carton-holder and is pushed along by it and into the operating-trough. As soon, however, as the rear end of the carton-holder enters this trough the end of the lever  $F$  comes in contact with the beveled end  $F^3$  of the cam-surface  $F^2$ , and is thereby forced backward, thereby rotating the arm  $G$  into contact with the carton, holding the latter firmly in place. A carton-holder is shown in Fig. 1 in transit through the operating-trough. As soon, however, as the carton-holder passes from the end of the operating-trough the lever runs off of the cam-surface, and the spring  $F'$  thrusts the lever and arm back to their normal position, as heretofore explained, thereby releasing the carton, which passes on along the conveyer-belt to any suitable exit.

I realize that considerable variations can be made in the details of this construction, and I do not, therefore, desire to limit myself to the specific form herein shown.

I claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the combination with a suitable frame, of a vane attached thereto adapted to push a carton through a gluing-machine, an arm pivoted on a vertical pivot in said frame and swinging in a horizontal plane, said arm normally extending from its pivot in the direction of the motion of said frame, and means for swinging said arm from this position to a position substantially at right angles to the line of motion of said frame to hold a carton against said vane, substantially as described.

2. In a device of the class described, the combination with a frame, and a vane attached thereto for the purposes indicated, of a shaft journaled in said frame, an arm rigidly connected thereto, a pinion also connected to said shaft, a rack-bar engaging said pinion, and a lever connected to said rack-bar and adapted, by its motion, to rotate said arm toward said vane, substantially as described.

3. In a device of the class described, the combination with a frame, and a vane connected thereto, substantially for the purposes indicated, of a lever pivoted between its ends upon a suitable bracket upon said vane, an arm upon said frame adapted to be swung toward said vane, means of connection between said arm and said lever and a spring between said lever and said vane, adapted to hold said lever in such position that said arm shall be normally away from said vane, substantially as and for the purposes described.

4. In a device of the class described, the combination with a frame and a vane attached thereto, of a shaft journaled in said

frame, an arm connected to said shaft and adapted to swing toward said vane, a pinion also secured to said shaft, a rack-bar engaging said pinion, a lever pivoted between its ends upon a suitable bracket connected to said vane and pivotally connected at one end to the extremity of said rack-bar, and a spring adapted to hold said lever in such position that said arm shall be normally swung away from said vane, substantially as described.

5. In a device of the class described, the combination with a conveyer and frame attached thereto, a vane attached to said frame and adapted to push forward a carton, an arm pivoted in said frame and adapted to swing toward said vane and hold a carton between itself and said vane, a suitable lever pivoted between its ends upon said vane and means of engagement between said lever and said arm, whereby backward motion of the end of said lever farthest removed from said conveyer will swing said arm toward said vane, of a suitable cam-surface, in the path of said lever and substantially parallel to said conveyer, whereby said arm shall be swung up to grasp a carton at one point in the path of

said frame and permitted to swing away from said carton at another point in the path of said frame, substantially as described.

6. In a device of the class described, the combination with a suitable frame, of a journal-box secured therein, a shaft in said journal-box, an arm secured to said shaft and means for rotating said shaft, of means for bodily moving said journal-box together with said arm, substantially as and for the purposes described.

7. In a device of the class described, the combination with a suitable frame, of a journal-box secured therein, a shaft in said journal-box, an arm secured to said shaft, and means for rotating said shaft, of a regulating-bolt adapted to bodily move said journal-box with said arm, substantially as described.

In witness whereof I have hereunto set my hand, at Rockford, in the county of Winnebago and State of Illinois, this 19th day of June, A. D. 1902.

GEORGE H. CORMACK.

Witnesses:

ANDREW GILRUTH,  
F. E. DICKINSON.