No. 829,948. PATENTED SEPT. 4, 1906.

C. F. CHAPMAN.

PACKAGE SEALING DEVICE.

APPLICATION FILED AUG. 19, 1905.

2 SHEETS—SHEET 1.

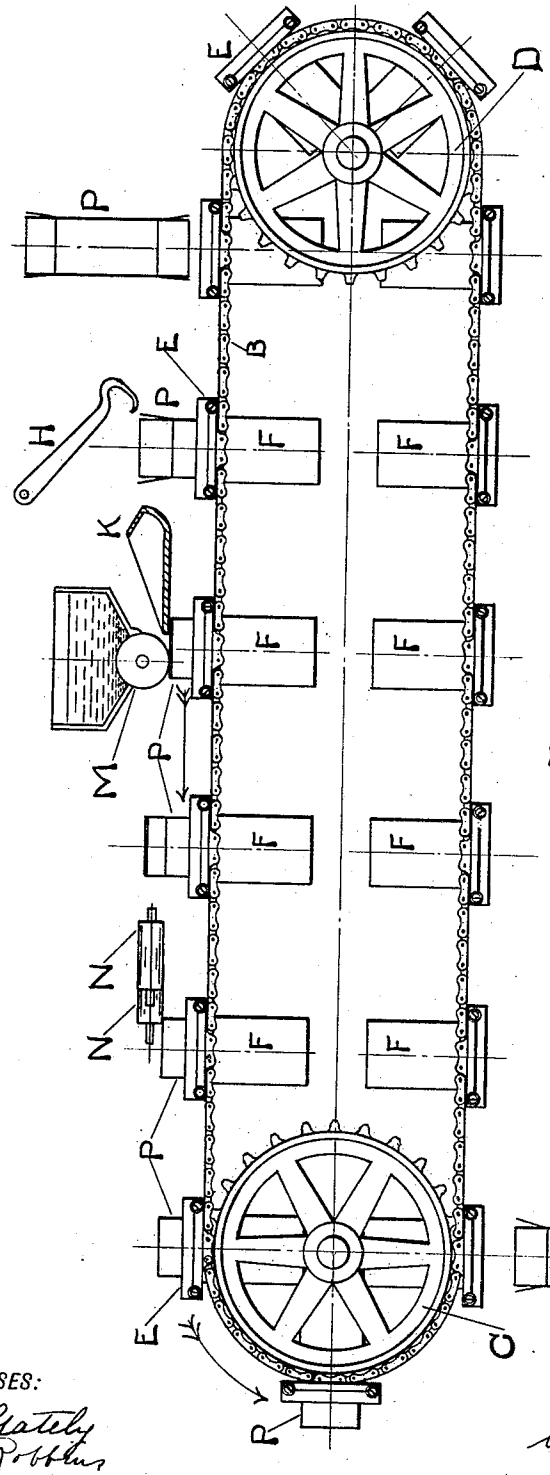


Fig. 1

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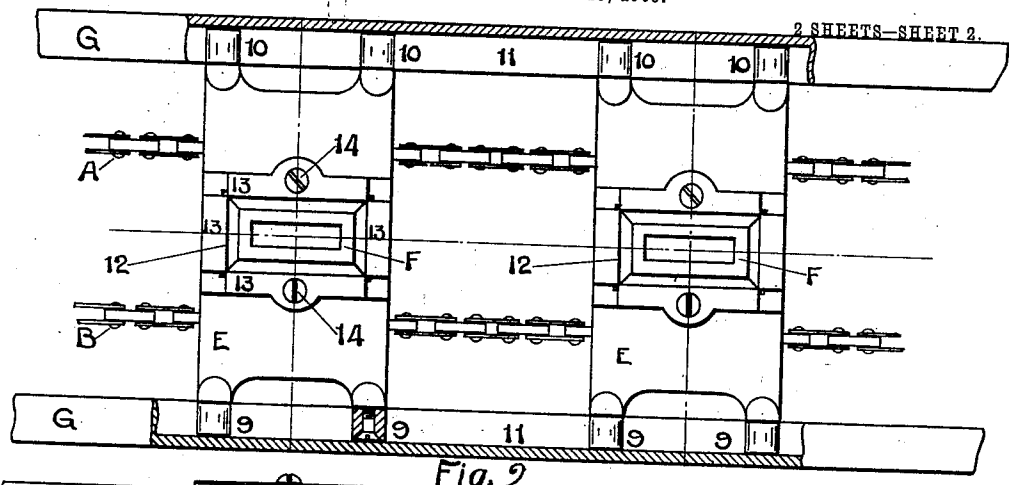


Fig. 2

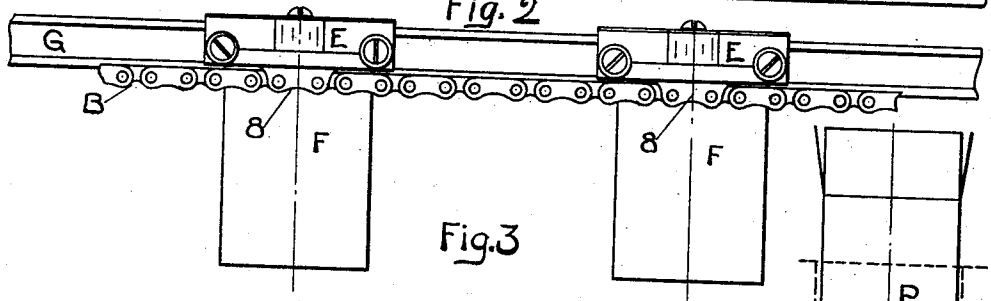


Fig. 3

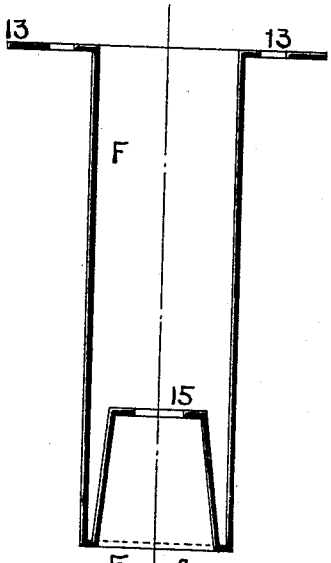


Fig. 4

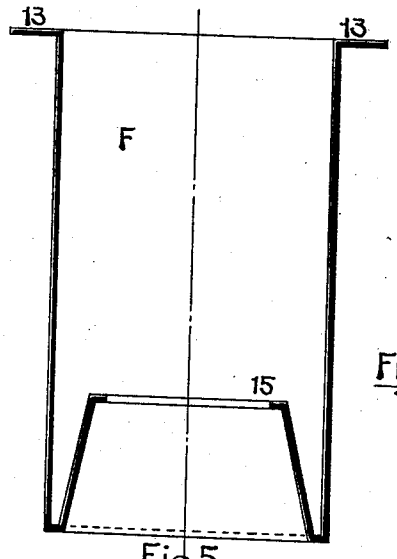


Fig. 5

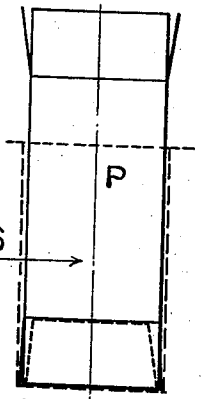


Fig. 6

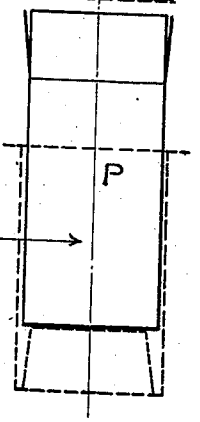


Fig. 7

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UNITED STATES PATENT OFFICE.

CHARLES F. CHAPMAN, OF LOWELL, MASSACHUSETTS.

PACKAGE-SEALING DEVICE.

No. 829,948. Specification of Letters Patent. Patented Sept. 4, 1906.

Application filed August 19, 1905. Serial No. 274,938.

To all whom it may concern:

Be it known that I, CHARLES F. CHAPMAN, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Package-Sealing Devices, of which the following is a specification.

My invention has reference to machines for sealing cartons either empty or filled; and it is adapted to seal the bottom when the carton is empty and to seal the top when the carton is filled without readjustment. It is also adapted by a slight change in the pocket to seal cartons of different sizes.

In the accompanying drawings, Figure 1 is a diagrammatic side view of a machine with my improvements. Fig. 2 is a plan view of my carrier with the guide-rails in partial section. Fig. 3 is a side view of the same with the near guide-rail removed. Fig. 4 is a sectional end view of a pocket. Fig. 5 is a sectional side view of a pocket. Fig. 6 shows the outline of a pocket with the position of a carton in position for sealing the bottom. Fig. 7 shows the same with the bottom of the carton closed and ready for the top to be sealed.

Ordinarily the bottom of the empty carton is sealed on one machine and the top of the filled carton is sealed on another machine. By the use of my pockets both operations can be performed on one machine by passing the cartons through it twice.

In this class of machines the cartons are usually fed onto an endless belt or revolving table, and as they pass along by successive mechanisms the flaps are smeared with glue and folded over onto each other. Now when a tall package is carried along by a conveyer which holds it at the bottom only the top which is being sealed as a rule is not very steady, and if packages or cartons of different heights are used the whole folding and gluing mechanism must be readjusted.

The unfolded carton has about the shape shown in Fig. 6—that is, the flaps stand up and down about in line with the sides. It is evident that when the carton stands upon the unfolded flaps it brings the top much higher than when it stands upon the folded flaps.

My carrier consists of the endless chains A and B, carried by double sprockets C and D, together with plates E E, carried by the chains, and pockets F F F, carried by the plates. Plates E E are attached on top of chains A B and are carried at each end by a single link, as 8, Fig. 3, so that they can be carried around the sprockets C and D. These plates are provided on each side with two rollers 9 9 10 10, which are arranged to travel in and be guided by the grooves 11 11 in guide-rails G G, fixed to the frame of the machine. In the center of plates E E are oblong orifices 12 12, on each side of which is one or more screw-holes for screws 14 14.

The packages or cartons instead of resting on plates E E are carried in the pockets F F, which are preferably made of sheet metal and must be of a suitable size and height to receive them. These pockets F F are dropped through orifices 12 12 in plates E E and rest on flanges 13 13, which overlap on plates E E and are secured thereto by screws 14 14, as shown. These pockets can be readily removed and others of a different size substituted by removing screws 14 14.

The bottom of each pocket F is upset, as shown in 15, Figs. 4 and 5, to a depth equal to the height of the highest flaps of the top of the carton to be sealed. By this upset, as shown in Figs. 6 and 7, the upper rim of the carton is brought on the same horizontal plane, whether the carton rests upon the ends of the flaps, as shown in Fig. 6, or upon the sealed bottom, as shown in Fig. 7.

Pockets F F must be of such height with reference to the packages to be sealed that the distance from the top of upset 15 to the line on which the sealing and gluing devices H K M N N operate shall be just the height of the closed package. The depth of upset 15 must be just equal to the height of the two highest flaps of the top of the package. Pockets F F should be large enough to permit a loose fit of the packages, and upset 15 should taper, as shown in Figs. 4 and 5, to readily receive the flaps.

The empty carton P, bottom up, is fed in at the right of the machine, Fig. 1, by dropping it into a pocket. It rests upon its flaps, which pass down beside upset 15. It is carried along, and its back flap is depressed by finger H and its front flap is depressed by plow K. Its sides are also pressed out flat by plow K, and in this position it passes under glue-roll M. Thence the sides spring up slightly and are pressed over and down one on top of the other by the reciprocating roll-

ers N N, and after passing sprockets C the carton falls out by gravity. It is then filled and right side up is again fed in at the right of the machine, when its top is sealed in the same manner.

Different-sized pockets adapted for different-sized packages can be readily substituted and no readjustment of parts is necessary.

By supporting the package-holder at the top and using two supporting-chains I bring the part of the package to be operated upon always at the same level with the sealing devices, and by using the upset 15 my device does duty for two machines.

The upper rim of the carton should rise a short distance—say a half or three-quarters of an inch above plates E E—and should be exactly on the plane of sealing and gluing devices H K M N N, so that if the attendant skips a pocket in feeding these plates will not come in contact with the glue-roll, but will pass along under it.

On devices where a form is used inside the empty carton when the attendant skips a form the form passes along and its top is covered with glue from the glue-roll, in which case it must be washed, or else some kind of depressing device must be used to keep the form away from the glue. My device avoids this difficulty.

What I claim as my invention, and desire to cover by Letters Patent, is—

1. In a package-sealing machine, parallel endless chains, a plurality of pockets carried thereby and depending between them, combined with flap-closing, and flap-gluing devices as described.

2. In a package-sealing machine, parallel endless chains, a plurality of plates connecting and carried by the chains, and pockets carried at their tops by the plates, combined with flap-closing, and flap-gluing devices as described.

3. In a carton-sealing machine, a pocket with upset bottom adapted to hold a full or empty carton.

4. In a package-sealing machine, parallel endless chains, a plurality of pockets with upset bottoms carried thereby and depending between them, combined with flap-closing and flap-gluing devices as described.

5. In a carton-sealing machine, endless chains, and a plurality of pockets with upset bottoms carried thereby and adapted to carry full or empty cartons.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES F. CHAPMAN.

Witnesses:

EDWARD W. CLARK,

W. E. POTTER, Jr.