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GUMMING MACHINE.
APPLICATION FILED MAY 3, 1906.

998,246.

Patented July 18, 1911.

Fig. 1.

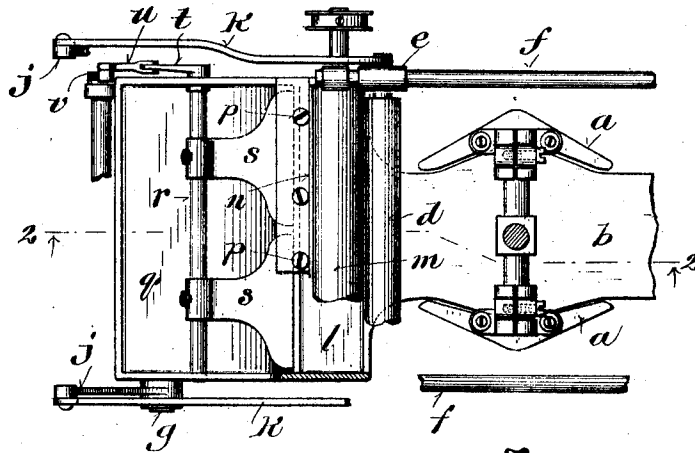
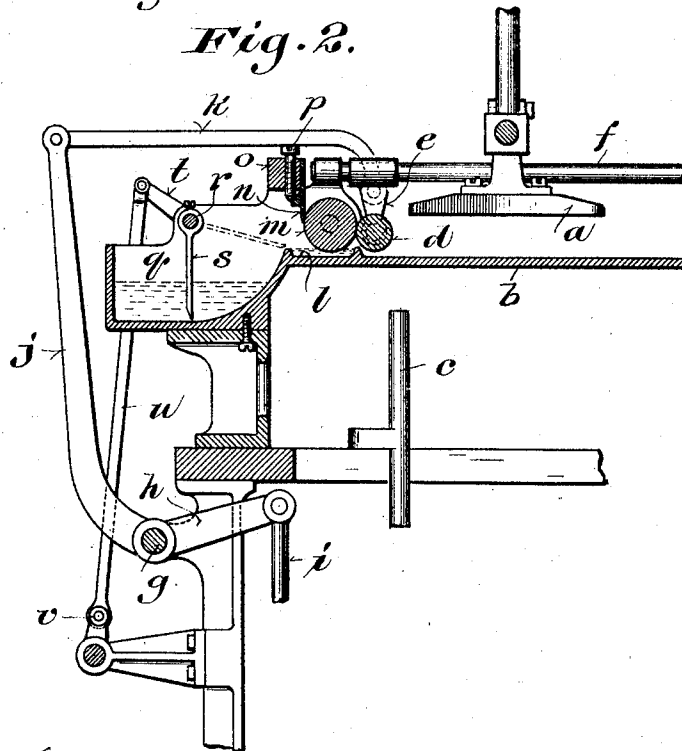


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES H. HEYWOOD AND DENISON E. TRAVIS, OF WAUKEGAN, ILLINOIS, ASSIGNORS
TO UNITED STATES ENVELOPE CO., OF SPRINGFIELD, MASSACHUSETTS, A CORPORATION OF MAINE.

GUMMING-MACHINE.

998,246.

Specification of Letters Patent.

Patented July 18, 1911.

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To all whom it may concern:

Be it known that we, CHARLES H. HEYWOOD and DENISON E. TRAVIS, citizens of the United States, residing at Waukegan, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Gumming-Machines, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention relates to mechanism for applying gum to envelops or paper, and more particularly to machines of the class shown in United States Letters Patent No. 516,811 dated March 20, 1894. Its main objects are to simplify and improve the construction and operation of machines of this class without increasing the movement of the gummers and decreasing the speed and capacity of the machines, and at the same time to provide the feed roller with a constant and sufficient supply of gum.

It consists in certain novel features of construction and in the peculiar arrangement and combinations of parts as herein-after particularly described and pointed out in the claims.

In the accompanying drawing like letters designate the same parts in both figures.

Figure 1 is a plan view, certain parts being broken away, of gumming mechanism embodying the present invention as applied to an envelop machine; and Fig. 2 is a vertical longitudinal section of the same on the line 2 2, Fig. 1.

a designates the vertically moving gummers, *b* the take-off plate, *c* one of the blank guides as commonly constructed and arranged in an envelop machine.

d is the gum-applying roller movable horizontally between the gummers and take-off plate in contact with the under or working faces of the gummers when they are in their upper position, as shown in Fig. 2. It is journaled in the usual way at the ends in slides *e*, which are mounted on the guide rods *f*.

A horizontal rocker shaft *g* actuated from any convenient moving part of the machine through a crank *h* and connecting rod *i*, is provided with upwardly extending arms *j*,

which are connected by links *k* with the slides *e* so as to impart a reciprocating movement to the roller *d*.

l is a shallow gum basin, which may be conveniently formed with or mounted directly upon the take-off plate *b* adjacent to one end of the gummers. The sides of this basin are preferably formed, as shown, by ribs raised on the upper side of and integral with the take-off plate which forms the bottom of the basin; *m* is the feed roller dipping on the under side into said basin and supported by bearings at the ends parallel with the roller *d*, which in its normal position or at the limit of its backward movement as shown in the drawing, is in contact therewith. At one end the roller *m* is provided as shown in Fig. 1, with a pulley or other connection for turning it.

The usual scraper *n* attached to a cross bar *o* and adjusted with relation to the feed roller *m* by screws *p*, is provided to prevent the said roller from taking up too much gum.

In order to minimize the movement of the gummers *a* above the take-off plate *b*, the gum-applying roller *d* of the ordinary diameter must be carried on the under side as close as possible to the top of said take-off plate, and in order to bring the roller so arranged into direct contact with the feed roller *m*, the basin *l* has to be made shallow. To maintain the requisite supply of gum in the basin *l*, a gum reservoir *q* is arranged alongside of and below said basin, and means are provided for transferring gum as it is needed from said reservoir into the basin. For this purpose, upon a rocker or rotative shaft *r* supported by bearings at the ends of the reservoir above and parallel with the adjacent side of the basin *l*, is mounted one or more blades or paddles *s*, the bottom and side of the reservoir next to the basin *l* being formed on a curve concentric with the shaft *r* with a radius but slightly greater than the radius of said blades. The blade or paddle *s* oscillates or rotates in the arc of a circle and the blade or its gum lifting face stands radially to the orbit of movement described by the blade so that the gum lifted by the blade from the reservoir will

slide or be delivered from the surface of the blade over the side of the gum basin next to the delivery edge of the blade as will be apparent from an examination of Fig. 2 of the drawing.

The shaft *r* is provided at one end with a crank *t* connected by a rod *u* with a crank *v*, which is turned or rocked by connection with any convenient moving part of the machine.

The reservoir *q* is preferably formed integral with the take-off plate *b* and basin *l*, thus avoiding joints, maintaining a fixed relation between said parts and enabling the entire structure to be mounted as a unit on the frame work of the machine. The reservoir being located at the end of the take-off plate and in different vertical and horizontal planes from said basin, leaves the space beneath the take-off plate clear for the feed table and its pile of blanks without limiting the depth of the reservoir.

The machine hereinbefore described operates as follows: The basin *l* and reservoir *q* being supplied with gum and the gumming mechanism being set in motion, the roller *m* takes up gum from the basin *l* and spreads it evenly over the surface of the roller *d*, turning in contact therewith. While the gummers *a* stand in their upper position as shown in Fig. 2, the gum-applying roller *d* advances underneath them and in contact with their under or working faces, transferring to them an evenly distributed supply of gum, and dwells at the limit of its advance movement. The gummers then descend at the sides of and below the take-off plate *b* upon the upper blank or sheet of the pile held between the guides *c*, transferring the gum on their working faces to said blank or sheet, which is lifted from the pile by the return movement of the gummers and stripped therefrom by the take-off plate *b*, being discharged from the machine by the usual or any suitable mechanism, not shown. Upon the return of the gummers to their upper position the roller *d* moves back underneath and in contact with them, transferring to their working surfaces another evenly distributed coat of gum. Returning into contact with the feed roller *m*, the roller *d* receives therefrom a fresh supply of gum, which is evenly spread over its surface.

In gumming machines of another and older type to which the present invention is applicable, the gum applying roller moves forth and back while the gummers remain in their upper position; in other words, the gummers descend once to each complete advance and return of said roller.

The basin *l* is supplied with gum as it is taken up therefrom and used, by the action of the oscillating blades *s*, which raise and transfer the gum as it is required from the reservoir *q* to said basin, the gum flowing

by gravity into the basin from the inclined faces of the blades as they are brought to the top of the basin.

The operations above explained are thus repeated while the machine continues to run and is supplied with gum and with blanks to work upon.

Various changes in minor details of construction and arrangement of parts may be made without departing from the principle and intended scope of the invention.

We claim:

1. In a gumming machine, the combination with a gum basin, of a gum reservoir in a different vertical and in a lower horizontal plane, and means comprising a movable member positioned to have its gum lifting face stand radially to its orbit of movement for raising gum from said reservoir and delivering it over the side of the gum basin next to the delivery edge of said member.

2. In a gumming machine, the combination with a gum basin and gum reservoir, of a blade for raising the gum from said reservoir into said basin having a rotative movement about an axis in a plane above the top of the gum basin, and means for moving said blade into an elevated position at an oblique angle to the top of said gum basin.

3. In a gumming machine, the combination with a gum basin and a gum reservoir alongside of and below said basin, of means for transferring gum from said reservoir to said basin, comprising a rocker shaft, a radial blade carried by said shaft in a plane parallel with its axis, and means for imparting an oscillating motion to said shaft.

4. In a gumming machine the combination with vertically moving gummers and a take-off plate, of a shallow gum basin, a feed roller dipping into said basin, a gum applying roller movable horizontally forth and back from and into contact with the feed roller and between the take-off plate and gummers, a gum reservoir arranged alongside of and below said basin, and an oscillating blade rotative on an axis parallel with the side of the gum basin over which the gum is delivered and adapted to elevate gum from said reservoir into said basin, substantially as described.

5. In a gumming machine, the combination with gummers, and a gum applying roller having a traversing movement across and in contact with said gummers, of a gum basin, a feed roller dipping into said basin and arranged in the path of said gum applying roller, a gum reservoir adjacent to said basin, and an oscillating blade rotative on an axis parallel with the side of the gum basin over which the gum is delivered and adapted to transfer gum from said reservoir into said basin, substantially as described.

6. In a gumming machine, the combination with gummers and a take-off plate, of a

gum basin on the upper side of said plate, a
gum reservoir at the end of said plate along-
side of and below said basin, a blade for
raising gum from the reservoir into the
5 basin rotative about an axis above and par-
allel with the side of the basin over which
the gum is delivered, the bottom and side
of the reservoir next to the basin being
curved concentric with said axis, a feed
10 roller dipping into said basin, and a travers-

ing gum applying roller for transferring
gum from the feed roller to the gummers,
substantially as described.

In witness whereof we hereto affix our
signatures in presence of two witnesses.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."