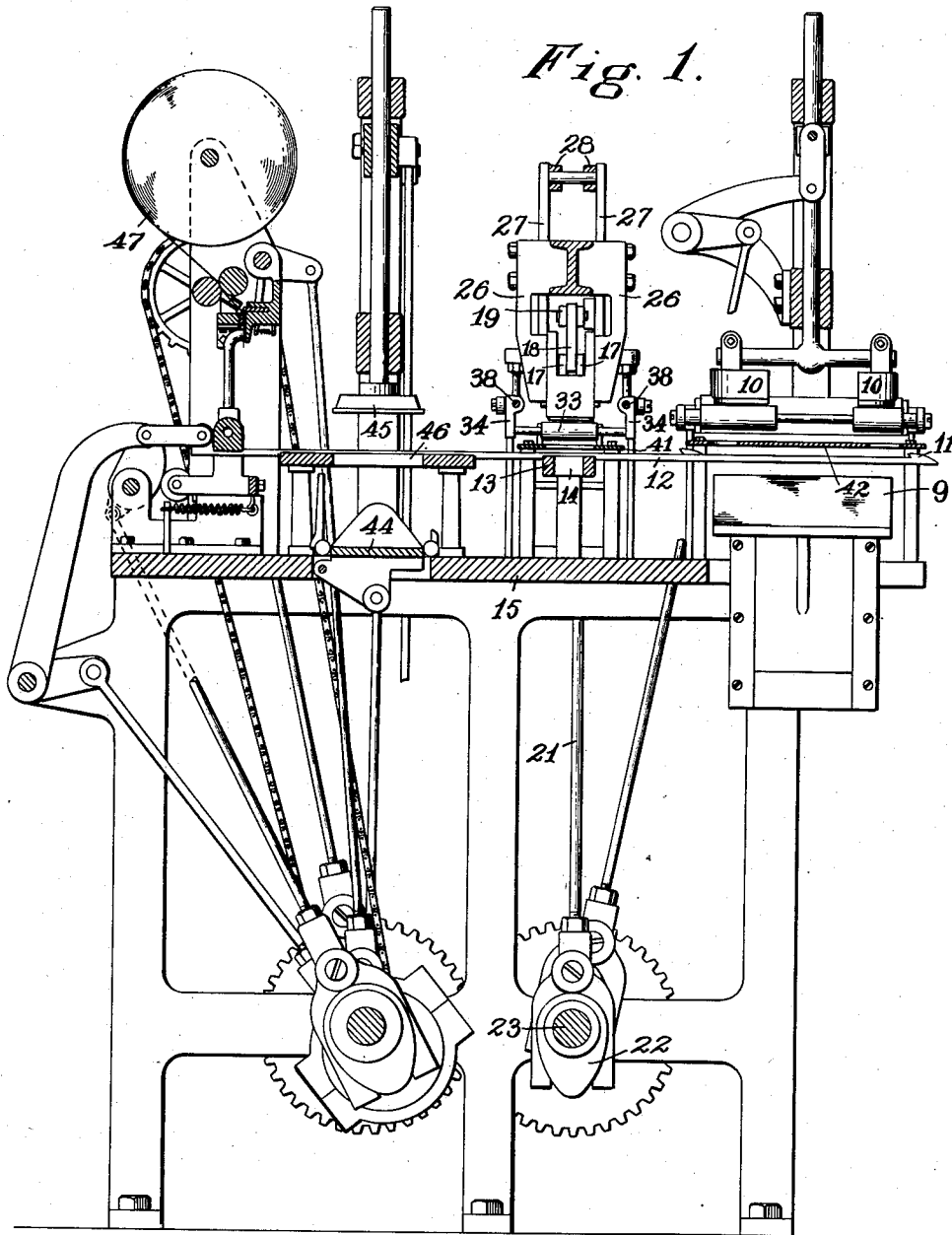


F. L. SCHMIDT.
PUNCHING AND GUMMING MECHANISM FOR ENVELOP BLANKS.
APPLICATION FILED NOV. 8, 1909.

997,330.

Patented July 11, 1911.

2 SHEETS—SHEET 1.



Witnesses

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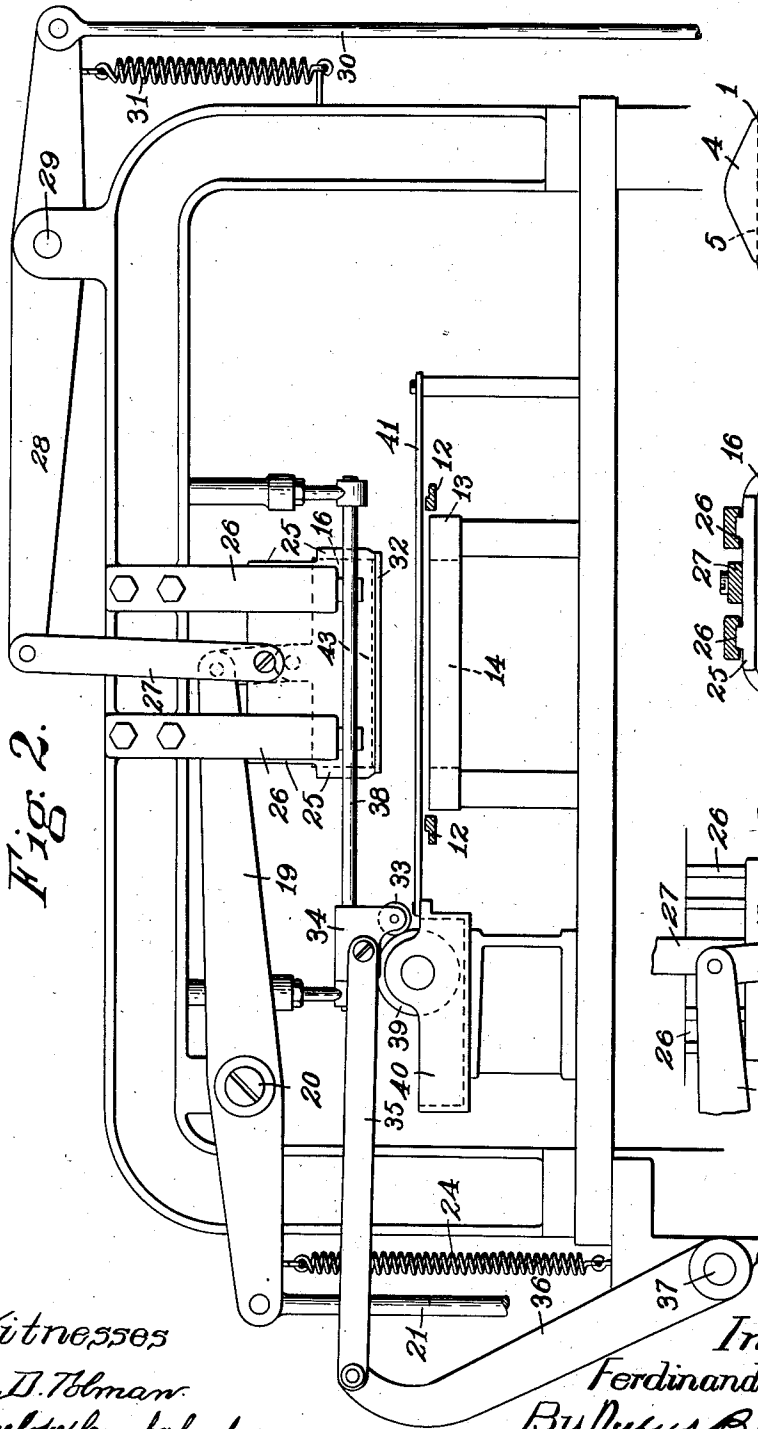


Fig. 2.

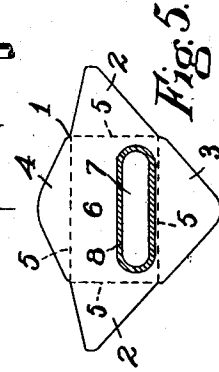


Fig. 5.

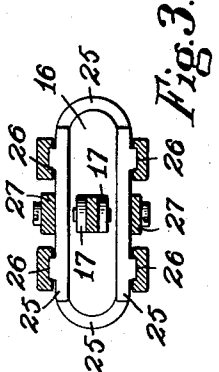


Fig. 3.

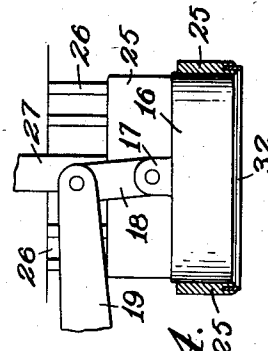


Fig. 4.

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UNITED STATES PATENT OFFICE.

FERDINAND L. SCHMIDT, OF NEW YORK, N. Y., ASSIGNOR TO UNITED STATES ENVELOPE COMPANY, OF SPRINGFIELD, MASSACHUSETTS, A CORPORATION OF MAINE.

PUNCHING AND GUMMING MECHANISM FOR ENVELOP-BLANKS.

997,330.

Specification of Letters Patent.

Patented July 11, 1911.

Application filed November 8, 1909. Serial No. 526,694.

To all whom it may concern:

Be it known that I, FERDINAND L. SCHMIDT, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Improvement in Punching and Gumming Mechanism for Envelop-Blanks, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a side elevation of an envelop machine shown in sectional view and embodying my improved punching and gumming mechanism. Fig. 2 is a front elevation of the punching and gumming mechanism shown on a larger scale. Fig. 3 is a detached top view of the punching die. Fig. 4 is a side view of the punching die, and Fig. 5 is a plan view of an envelop blank after it has been punched and gummed.

Similar reference characters refer to similar parts in the different figures.

My present invention relates to a mechanism for punching an opening in the body of an envelop blank and gumming the margin of the opening to receive a transparent patch in the manufacture of what is known as outlook envelopes, and my invention consists in the construction and arrangement of parts as hereinafter described and pointed out in the annexed claims.

In the accompanying drawings 1, Fig. 5, represents an envelop blank in extended form, having end flaps 2, 2, a back flap 3 and a seal flap 4 which, folded on the broken lines 5, form an envelop having a rectangular body 6. The punching and gumming mechanism illustrated in the accompanying drawings is adapted to punch an opening 7 in the body of the envelop in proper position to disclose an address on the inclosure, and having the margin of the opening 7 gummed, as indicated by the shaded surface 8. The punching and gumming mechanism is shown in the accompanying drawings as forming a component part of an envelop machine designed to operate upon a pile or stack of envelop blanks for the purpose of gumming and folding the flaps of the envelop, but the punching mechanism may, however, be em-

ployed separated from the other parts of the envelop machine.

Fig. 1 of the accompanying drawings represents in side elevation and in sectional view an envelop machine having means for supporting and feeding to the operative parts of the mechanism a pile of blanks 9, from which the topmost blank is raised by flap gumming dies 10, 10 into position to be engaged by the hooks 11 of a reciprocating conveyer 12 and carried over a die plate 13 having an opening 14, corresponding to the opening 7 to be formed in the envelop blank. In the present application I have not shown in detail the reciprocating conveyer 12 nor the registering means by which the blank is held in the various positions, these means having been fully described in Letters Patent of the United States, No. 401,462, issued to A. A. Rheutan, April 16, 1889. The die plate 13 is supported in a fixed position upon the table 15 of the envelop machine, and is arranged to coöperate with a reciprocating punch 16 having on its upper side lugs 17, which are connected by a link 18 with one end of a lever 19 pivoted at 20 upon the framework of the machine, and having its opposite end connected by a link 21 with a cam 22 on a cam shaft 23. The cam 22 is constructed to depress the punch 16 and allow it to be raised by means of a spring 24. The punch 16 is thereby given a vertical reciprocating motion within a sleeve 25, which likewise is capable of a vertically reciprocating movement in fixed ways 26. The sleeve 25 is connected by links 27 with one end of a lever 28, which is pivoted at 29 upon the framework of the machine and connected at its opposite end by a link 30 with an actuating cam, not shown, carried upon the cam shaft 23, said cam being adapted to vertically depress the sleeve 25 in the ways 26 and allow it to be raised by a spring 31. Inserted within a recess in the lower edge of the sleeve 25, or otherwise suitably attached thereto, is a strip of elastic material, such as rubber, forming a yielding face 32, to which gum is applied by a reciprocating gumming roller 33, supported in a frame 34 connected by a link 35 with a swinging lever 36 piv-

totally supported upon the framework of the machine at 37 and suitably connected with an actuating cam, not shown, to impart a reciprocating movement to the frame 34 along the horizontal ways 38, by which the gumming roller 33 is brought into contact at one end of its travel with a gumming roller 39 revolving in a gum box 40. During the reciprocating movement of the gumming roller 33, it passes into contact with the yielding face 32 when the latter is in its highest position, applying gum to the face 32 which is transferred to the envelop blank by the downward movement of the sleeve 25. Supported above the die plate 13 is a stripping table 41, having an opening sufficient to allow the sleeve 25 to pass in its downward movement and bring the yielding gummed face 32 into contact with an envelop blank held in position over the die plate 13.

The operation of my improved punching and gumming mechanism when employed in connection with the operative parts of an envelop making machine is as follows:— Each envelop blank, as it is raised from the pile 9 by the flap gumming dies 10 in their vertically reciprocating movement, is stripped therefrom by a stripping plate 42 and deposited upon the reciprocating conveyer 12 and engaged by the hooks 11. At the next forward movement of the conveyer 12 the blank is carried into position over the die plate 13 and given a period of rest, during which time the sleeve 25 descends carrying the gummed yielding face 32 into contact with the body of the envelop and applying gum thereto on the margin of the opening 7 forming a gummed surface 8, as indicated by the shading 8 in Fig. 5. The punch 16 also descends and, passing into the opening 14 of the die plate 13, punches the hole 7, Fig. 5, in the blank. The punch 16 is then raised until its lower surface is brought above the gummed face 32, as indicated by the broken line 43, Fig. 2, thereby causing the envelop blank to be stripped from the punch. The punch 16 and sleeve 25 are then moved upward above the stripping table 41, which releases the gummed blank from the sleeve 25, allowing it to rest upon the reciprocating conveyer 12 and be carried at its next forward movement to the folding mechanism, comprising a folding bed 44, plunger 45 and a creasing plate 46, in the manner common in machines of this class.

The envelop machine, in connection with which my punching and gumming mechanism is illustrated, is provided with mechanism for feeding and applying a transparent strip from a coil 47 to cover the opening 7 of the envelop blank; but the patch applying mechanism employed for that purpose

forms no part of my present invention, it being described in a copending application for Letters Patent, Serial No. 526,358, filed by me November 5, 1909.

I do not confine myself to the employment of a punching and gumming mechanism in connection with an envelop machine, as the same may be employed separately; neither do I restrict myself to any particular type of envelop machine with which the punching and gumming mechanism may be employed.

I claim,

1. In a mechanism of the class described, a die plate, a reciprocating punch, a reciprocating sleeve inclosing said punch, means for applying gum to said sleeve, and a stripping plate for said sleeve.

2. In a mechanism of the class described, a support for a blank, a vertically reciprocating gumming die arranged to gum a portion of said blank, and a punch arranged to reciprocate within said gumming die and to form an opening in said blank within said gummed portion.

3. In a mechanism of the class described, a support for a blank, a vertically reciprocating punch arranged to form an opening in said blank, a vertically reciprocating sleeve inclosing said punch arranged to gum the margin of said opening before the operation of said punch and to act as a stripping plate for said punch after its operation is complete.

4. In a mechanism of the class described, a support for a blank, a vertically reciprocating punch arranged to form an opening in said blank, and a vertically reciprocating sleeve inclosing said punch arranged to gum the margin of said opening.

5. In a mechanism of the class described, a support for a blank, a vertically reciprocating punch arranged to form an opening in said blank, a vertically reciprocating sleeve inclosing said punch arranged to gum the margin of said opening, means for applying gum to the lower face of said sleeve, said sleeve also arranged to strip the envelop blank from the punch, and a stripping plate arranged to remove the envelop blank from said sleeve.

6. In a mechanism of the class described, a die plate, means for moving a blank over the die plate, a reciprocating punch cooperating with said die plate to form an opening in the blank, means for applying gum to the blank around the opening, and a reciprocating gumming roll for applying gum to the gumming means.

7. In a mechanism of the class described, the combination with a cooperating punch and die for forming an opening in a blank, of a reciprocating sleeve outside said punch,

means for applying gum to said sleeve, and means for removing the gummed blank from said sleeve.

5 8. In a mechanism of the class described, a cooperating punch and die, a reciprocating gumming sleeve, a gum roll, and a reciprocating gumming roll moving from contact

with said gum roll over the face of said sleeve.

Dated this first day of November 1909.

FERDINAND L. SCHMIDT.

Witnesses:

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MINNIE CLARKE.