

979,535.

3 SHEETS—SHEET 1.

[illegible]

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979,535.

3 SHEETS--SHEET 2.

Fig. 5.

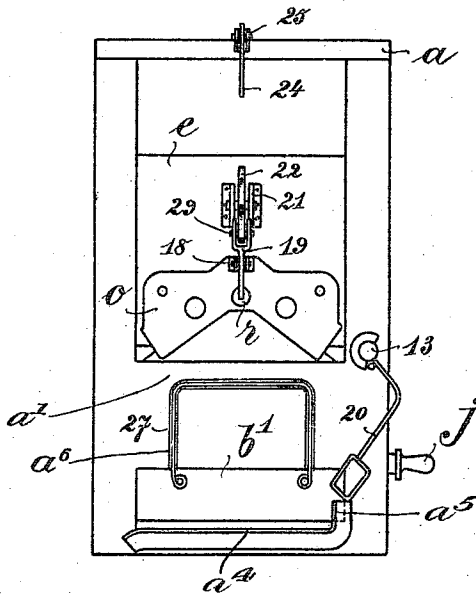


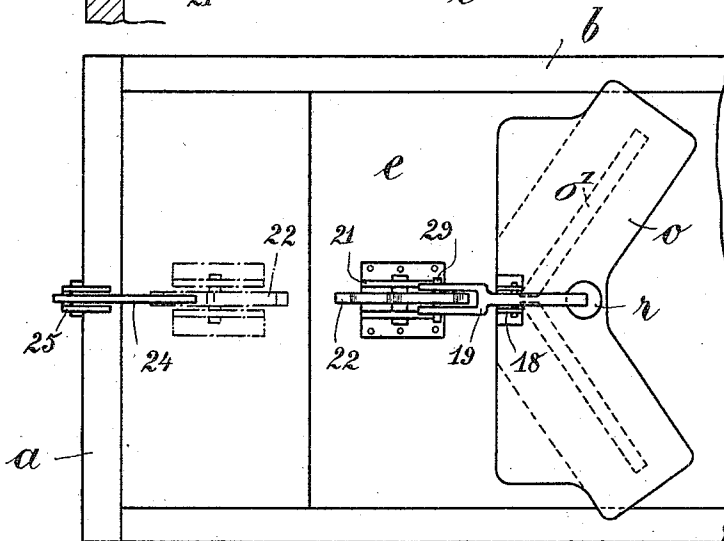
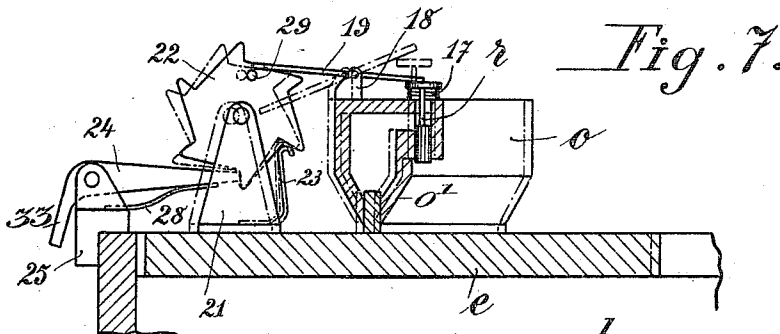
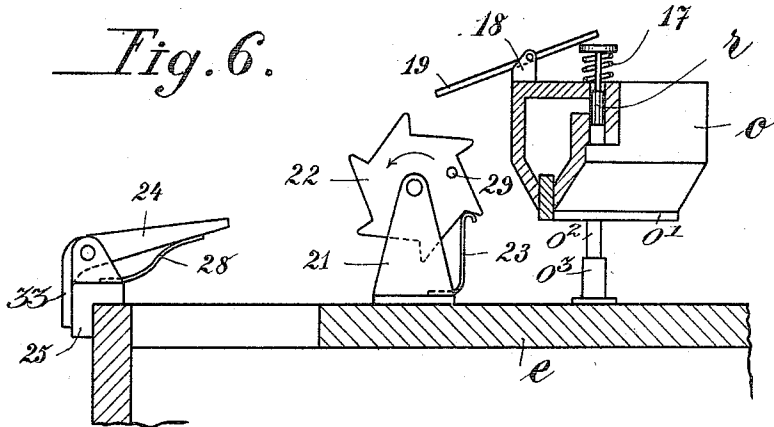
Fig. 9. Isac Michel
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ENVELOP CLOSING MACHINE.
APPLICATION FILED NOV. 2, 1908.

979,535.

Patented Dec. 27, 1910.

3 SHEETS—SHEET 3.



Witnesses:

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Fig. 8. Inventor
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UNITED STATES PATENT OFFICE.

ISAC MICHEL, OF FRANKFORT-ON-THE-MAIN, GERMANY, ASSIGNOR TO MICHELIUS
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ENVELOP-CLOSING MACHINE.

979,535.

Specification of Letters Patent. Patented Dec. 27, 1910.

Application filed November 2, 1908. Serial No. 460,657.

To all whom it may concern:

Be it known that I, ISAC MICHEL, a subject of the Emperor of Germany, and residing at Frankfort-on-the-Main, Germany, have invented a certain new and useful Improvement in Envelop-Closing Machines, of which the following is a specification.

This invention relates to a machine for closing envelopes, provided with a damper and a member for turning over and pressing down the flap.

The novelty of the invention resides primarily in the formation of the damper whereby this latter is caused to operate in a more satisfactory manner than was the case heretofore in that the damper is made adjustable to the shape of the gummed surface of the closing flap so that on being passed over the gummed surface only the gummed surface is damped and the damper being provided with a device for regulating the degree of moisture, and the damper being mounted on a movable support for the closing flap on movement of which it passes over the closing flap and releases a folding and pressing plate.

A further feature consists in the arrangement of members which before damping takes place turn the closing flap on its support and automatically eject the closed envelop from the machine.

Still another feature consists in the arrangement for actuating all the operative members by means of cams from a main shaft.

The invention will be more fully described in connection with the accompanying drawings and will be more particularly pointed out in and by the appended claims.

In the drawings: Figure 1, is a vertical sectional view taken on line A—B of Fig. 5. Fig. 2 is a similar view taken on line C—D of Fig. 5. Fig. 3 is a similar view taken on line E—F of Fig. 5. Fig. 4, is a plan view of the machine. Fig. 5 is a plan view with the top wall of the casing removed. Fig. 6, is a longitudinal vertical sectional view of portions of the upper and rear walls of the machine with the parts supported thereby, showing said parts in one position. Fig. 7 is a view similar to Fig. 6, showing the same parts in another position. Fig. 8 is a plan view with the parts in the position as shown in Fig. 6. Fig. 9 is a plan view similar to Fig 4.

Like characters of reference designate similar parts throughout the different figures of the drawings.

As shown the machine includes a casing *a* having its upper or top portion open forwardly and rearwardly of a cross top member *a'* which bridges the upper open space. The forward or front face is arranged to be closed by a hinged discharging leaf *b'* which is hinged to the cross top portion *a'* at *b²*. The leaf *b'* is provided with a discharging bail 27 which normally rests in a recess *a³* of like contour formed in the part *a'*, as clearly shown in Fig. 9. The discharging opening *a²* is formed in the casing *a* and a guard *a³* serves to guide the sealed envelop therethrough as will hereinafter more fully appear. A guard *a⁴* provided with a lateral extension *a⁵*, is mounted on the casing *a* for the purpose of enabling the operator to properly position the envelops with the base and one side portion thereof lying against said guard at its extension, respectively.

A support *e* is slidably mounted in the casing *a* so that its upper face will be flush with the upper face or top of the casing *a*. Upon the support *e* is mounted a container *o* adapted to contain the liquid, such as water for instance, with which a moistening pad *o'* is saturated for the purpose of dampening or moistening the gummed or muscilaed inside face of the envelop flap. The pad *o'* is shaped to correspond to the angular contour of an envelop flap, as will be readily seen by reference to dotted lines in Fig. 8. The container *o* is mounted upon rod *o²* which telescopes standard *o³* secured to the support *e* so as to permit the container *o* to descend toward the support *e* and upon the open inner face of the flap of the envelop, as will hereinafter more fully appear.

A flap opener is provided and as shown the same consists of an arm 20 mounted upon a rotatable spindle 13 secured in a bearing 30. A spring 14 normally tends to maintain the opener in the position shown in Fig. 9.

A main operating shaft is indicated at 4 and extends transversely through the casing *a* and carries an operating crank *j*. The shaft 4 is provided with a cam 12 having a recess 15 therein. The concentric portion of the cam 12 normally engages a roller 16 mounted on the discharge seat *e'* and maintains the same in the position shown in Fig.

3. A spring 26 serves to hold the roller 16 in engagement with the cam 12. When the recess portion 15 of the cam reaches the roller 16 the spring 26 draws the leaf b' into the position shown in dotted lines in Fig. 3, for the purpose which will hereinafter more fully appear. Motion is transmitted from the main shaft 4 to an auxiliary shaft 3 by means of a chain 1. The shaft 3 is provided with a cam 6 arranged to actuate a lever 8. The lever 8 (see Fig. 1) is pivoted at $8'$ and carries a roller 31, against which the cam 6 acts. The lever 8 is provided with a connection 11, which may be in the form of a cord, and which is wound about the shaft 13 for rotating the same to actuate the flap opener 20. A cam 9 is mounted upon shaft 3 and acts against a roller mounted upon lever i^2 . The lever i^2 is mounted on the supporting shaft or rod $8'$. The lever i^2 carries at its upper end a pin 32 which engages the slotted end of a bell-crank lever i . The bell crank lever i is pivoted at l to the hanger l' depending from the sliding support e . A hanger l^2 depending from the sliding support e is provided with a stop pin i^4 which limits downward movement of the bell crank lever i , as clearly shown in Fig. 2. As shown in Fig. 5, the shaft l is provided with a bell crank lever i at each end thereof and the upper arms of said bell crank lever are arranged to engage the bottom or enlarged bases of the rod o^2 on which the container o is supported. A spring 2 serves to hold the lever i^2 in a position to maintain its roller in engagement with the cam 9. It will be seen from the foregoing that when the lever i^2 is swung to the left of Fig. 2, the bell crank will turn on its pivot until the upper arm engages the stop pin i^4 and thereafter the further movement of the lever i^2 will slide the support e rearwardly, or to the left of Fig. 2, until it reaches the dotted line position shown in Fig. 2 and the full line position shown in Fig. 7.

A sealing member is provided which as shown is in the form of a hinged leaf z which is hinged at z' to the part a' , as shown in Fig. 2. A suitable spiral spring is provided at the hinge z' to normally cause the leaf z to assume the position shown in Figs. 2 and 3. A lever g is provided with a roller g' for engagement with the bottom face of the leaf z and said lever g is mounted upon a shaft g^2 suspended from a hanger g^3 secured to the part a' . A cord or cable w' is wound about the shaft g^2 and if desired a spring 7 may be disposed in the cord w' to afford the required resiliency in action. The cord or cable w' is connected with a lever w^2 mounted on the shaft or rod $8'$ and the lever w^2 is provided with a roller engaging a cam 10 mounted upon shaft 3, as clearly shown in Fig. 3. When the lever w^2

is depressed the cord w' is unwound from the shaft g^2 and the lever g^3 swings the closing leaf z upon the flap of the envelop so as to press the same against the body portion thereof and seal the same, as shown in dotted lines in Fig. 3.

In order to admit air to the container o the latter is provided with a valve r which is normally maintained in a closing position by a spring 17. A standard 18 is mounted upon the container o and carries a lever 19 which at one end bears upon the top of the valve r and which is bifurcated at its opposite end as shown in Fig. 8. A bearing 21 carries a toothed wheel 22 having pins 29 projecting on opposite sides thereof and adapted, in one position of the wheel 22, to be engaged by the bifurcated end of the lever 19 so as to depress the valve r and permit air to enter the container o , as clearly shown in Fig. 7. A spring 23 serves to prevent rotation of the wheel 22 in a direction reverse to the direction of the arrow shown in Fig. 6.

It is not desired to admit air to the container o at each rearward movement thereof and therefore only two pins 29 are provided on the wheel 22. It will be understood however that this arrangement may be varied by the addition of two more pins so that at each half revolution of the wheel 22 air can be admitted to the container o .

A bracket 25 is mounted upon the rear end of the casing a and is provided with a dog 24 which is normally maintained in the position shown in Fig. 6 by a spring 28. An extension 33 on the dog 24 limits movement thereof under action of spring 28 beyond the position shown in Fig. 6.

The end of the dog 24 is in a position to engage the lowermost tooth of the wheel 22 when the slide e is shifted rearwardly as shown in Fig. 7. Thus it will be seen that at each rearward movement of the slide e , in the arrangement shown, the wheel 22 is rotated a distance equal to the space between two teeth thereof and as the wheel 22 has six teeth it will be obvious that at each sixth rearward reciprocation of the slide e the valve r will be actuated to admit air to the container o . While the operation may be clear from the foregoing it may be briefly recapitulated as follows:

The body of the envelop is placed upon the part a' with the main edges against the guard a^4 , a^5 and with the flap of the envelop lying uppermost. The first movement of the crank j (Fig. 1) to position i' serves to move the flap portion of the cam 6 abreast of the roller 31 so as to allow the lever 8 to assume position i' and permit the spring 14 to swing the flap opener 20 into the position shown in dotted lines in Fig. 4, so as to cause the flap to lie flat upon the slide e and beneath the moistener. The next move-

ment of the crank *j* to position III (Fig. 2) serves to actuate the cam 9 so that the bell crank lever *i* is moved downwardly against stop *i*² thereby moving the moistening pad *o*' into contact with the upper gummed or musciled face of the flap. The next movement of the crank *j* to position IV (Fig. 3) serves to move the lever *i*² into the IV position thereby reciprocating the slide *e* to the left and leaving an opening for upward movement of the leaf *z*. Simultaneously with the rearward movement of the slide *e* the arm *g* is actuated into the dotted lined position IV and the moistened flap is pressed downwardly upon the body of the envelop and the envelop is thereby sealed. It will be understood that prior to this upward movement of the leaf *z* the concentric portion of the cam 6 will have returned the lever 8 to the full line position shown in Fig. 1 thereby rotating the part 20 into the full line position shown in Fig. 9. Furthermore the cams 9 and 10 are so timed that the slide *e* will not be returned to the forward position until after the cam 10 has permitted the lever *w*² to rise to the full line position (Fig. 3) so that the spring in the leaf *z* can return the same and the arm *g* to the full line position shown in Fig. 3. At about this time the crank *j* will have reached the position V and the roller 16 will have been drawn into the recess 15 by the spring 26. This will raise the bail 27 and allow the sealed envelop to slide off from the discharging leaf *b*' through the opening *a*². By this time the slide *e* will have been returned to its forward position and by the crank *j* reaches position I all the parts will be in their normal position. It will be seen that when the moistener is lowered, or moved, into engagement with the gummed portion of the flap the means for retracting the support *e* serves to wipe the moistener across the gummed surface of the flap and that the same is held between the moistener and the support *e* during this wiping action, the weight of the moistener acting by gravity affording sufficient pressure for an efficient application of the moistener.

I claim:—

1. An envelop sealing machine comprising in combination, a casing provided with a horizontal top portion arranged to support the body of the envelop, a support for the envelop flap lying flush with said top portion and slidably mounted to move horizontally toward and away from said top portion, a moistening device on said support, and means for engaging said device with the gummed portions of the flap and retracting said support to wipe the moistener across said gummed portion.

2. An envelop sealing machine comprising in combination, a casing provided with a horizontal top portion arranged to sup-

port the body of the envelop, a support for the envelop flap lying flush with said top portion and slidably mounted to move horizontally toward and away from said top portion, a gravity acting moistening device on said support, and means for permitting said moistening device to lower by gravity into engagement with the gummed portions of the flap and clamp the same between said moistener and said support, said means also retracting the support to cause the moistener to wipe across the gummed surface of the flap.

3. An envelop sealing machine comprising in combination, a casing provided with a horizontal top portion arranged to support the body of the envelop, a support for the envelop flap lying flush with said top portion and slidably mounted to move horizontally toward and away from said top portion, a moistening device on said support having angular portions corresponding to the contour of the gummed surface of the flap, and means for engaging said device with the gummed portion of the flap and retracting said support to wipe the moistener across said gummed surface.

4. An envelop sealing machine comprising in combination, a casing provided with a horizontal top portion arranged to support the body of an envelop, a support for the flap of the envelop lying flush with said top portion and slidably mounted to move horizontally toward and away from said top portion, a moistening device on said support, means for opening the flap of the envelop and causing the gummed surface to lie below said moistener and means for engaging said device with the gummed surface of the flap and retracting said support to wipe the moistener across said gummed surface.

5. An envelop sealing machine comprising in combination, a casing provided with a top portion arranged to support the body of the envelop, a support for the flap of the envelop lying flush with said top portion and slidably mounted to move toward and away from said top portion, a moistening device on said support, a spring actuated swinging arm for opening the flap of the envelop and causing the gummed portion to lie below said moistener, and means for engaging said moistening device with the gummed portion of the flap and retracting said support to wipe the moistener across said gummed surface.

6. An envelop sealing machine comprising in combination, a casing provided with a top portion arranged to support the body of the envelop, a support for the envelop flap lying flush with said top portion and slidably mounted to move toward and away from said top portion, a closing leaf normally disposed below the upper face of said

top portion and support, a moistening device on said support, means for engaging said device with the gummed portion of the flap of said envelop and retracting said support to wipe the moistener across the gummed surface, means for moving said sealing leaf upwardly during retraction of said support to fold said flap downwardly upon the body of the envelop and seal the same.

7. An envelop sealing machine comprising in combination, a casing provided with a top portion arranged to support the body of an envelop, a support for the envelop flap lying flush with said top portion and slidably mounted to move toward and away from said top portion, a moistening device on said support, means for opening the flap of the envelop and causing the gummed surface thereof to lie below said moistener, a sealing leaf normally disposed below the upper surface of said support and flap portion, means for retracting said support and lowering said moistener to cause the latter to wipe across the gummed surface of the flap, and means for raising said sealing leaf into engagement with the moistened flap and pressing the same upon the body of the envelop to seal the same.

8. An envelop sealing machine comprising in combination, a casing provided with a horizontal top portion arranged to support the body of the envelop and having a bail receiving recess therein, a discharge leaf lying flush with said top portion and forming a continuation thereof and having a bail arranged to seat in said recess, and means for tilting said discharge means to discharge the envelops from the machine by gravity.

9. An envelop sealing machine comprising in combination, a casing provided with a top portion arranged to receive the body of the envelop, and a discharge opening, a discharging leaf hinged to said top portion and lying flush with and forming a continuation thereof, a bail secured to said discharging leaf and arranged to lie beneath the envelop, and means for tilting said discharge leaf into alinement with said discharge openings to cause the sealed envelop to discharge from the machine by gravity.

10. An envelop sealing machine comprising in combination, a casing provided with a top portion arranged to receive the body of the envelop, a discharging leaf lying flush with and forming a continuation of said discharge portion and hinged thereto, a bail on said discharging leaf arranged to lie beneath the body of the envelop, a sealing leaf hinged to said top portion and normally lying below the same, a support for the flap of the envelop lying flush with said top portion and slidably mounted to move toward and away from said top portion, a moistening device on said support, a flap opener causing the gummed surface to lie

below said moistening device, means for engaging said moistening device with the gummed portion of the flap and retracting said support to wipe the moistener across the gummed portion of the flap, means for raising said sealing leaf during retraction of said support to seal the flap, and means for tilting the discharging leaf to cause the sealed envelop to discharge by gravity.

11. An envelop sealing machine comprising in combination, a casing provided with a portion designed to support the body of the envelop, a support for the flap of the envelop slidably mounted to move toward and away from said portion, a container on said support provided with a moistening pad, a valve for admitting air to said container, means for moving said device into engagement with the flap of the envelop and retracting said support, and means actuated upon retraction of said support for opening said valve.

12. An envelop sealing machine comprising in combination, a casing provided with a portion designed to support the body of the envelop, a support for the flap of the envelop slidably mounted to move toward and away from said portion, a container on said support provided with a moistening pad, a valve for admitting air to said container, means for moving said device into engagement with said flap and retracting said support, and means actuated upon retraction of said support for opening said valve at times less than at each retraction of said support.

13. An envelop sealing machine comprising in combination, a support for the envelop, a moistening device adapted for engagement with the gummed portion of the envelop flap and disposed above the same, and means causing movement of said device downwardly into engagement with said gummed portion and subsequent movement of the device horizontally to wipe the moistener across said portion.

14. An envelop sealing machine comprising in combination, a portion arranged to support the body of the envelop, a slidable support for the envelop flap lying flush with said top portions and movable toward and away from said top portion, a moistening device on said support, and means for engaging said device with the gummed portion of said flap and retracting said support to wipe the moistener across said gummed portion.

15. An envelop sealing machine comprising in combination, a portion arranged to support the body of the envelop, a slidably mounted support for the envelop flap lying flush with said portion and movable toward and away from said portion, a gravity acting moistening device on said support, and means permitting said moistening

device to move by gravity into engagement with the gummed portion of the flap and to plant the same between said moistener and said support, said means also retract-
5 ing the support to cause the moistener to wipe across the gummed surface of the flap.

10 16. An envelop sealing machine comprising in combination, a support for the envelop, a moistening device adapted for engagement with the gummed portion of the envelop flap, means for opening the flap of the envelop and causing the gummed surface to lie below said moistener, and means

causing engagement of the moistener with the gummed portion of the flap and subsequent movement of the moistener horizontally to wipe the same across said gummed portion. 15

In testimony whereof I have signed my name to this specification in the presence of
20 two subscribing witnesses.

ISAC MICHEL.

Witnesses:

BERNHARD RAISER,
JEAN GRUND.