J. SLAYBAUGH.

ENVELOP SEALING DEVICE.

APPLICATION FILED OCT. 14, 1914.

1,166,553.

Patented Jan. 4, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

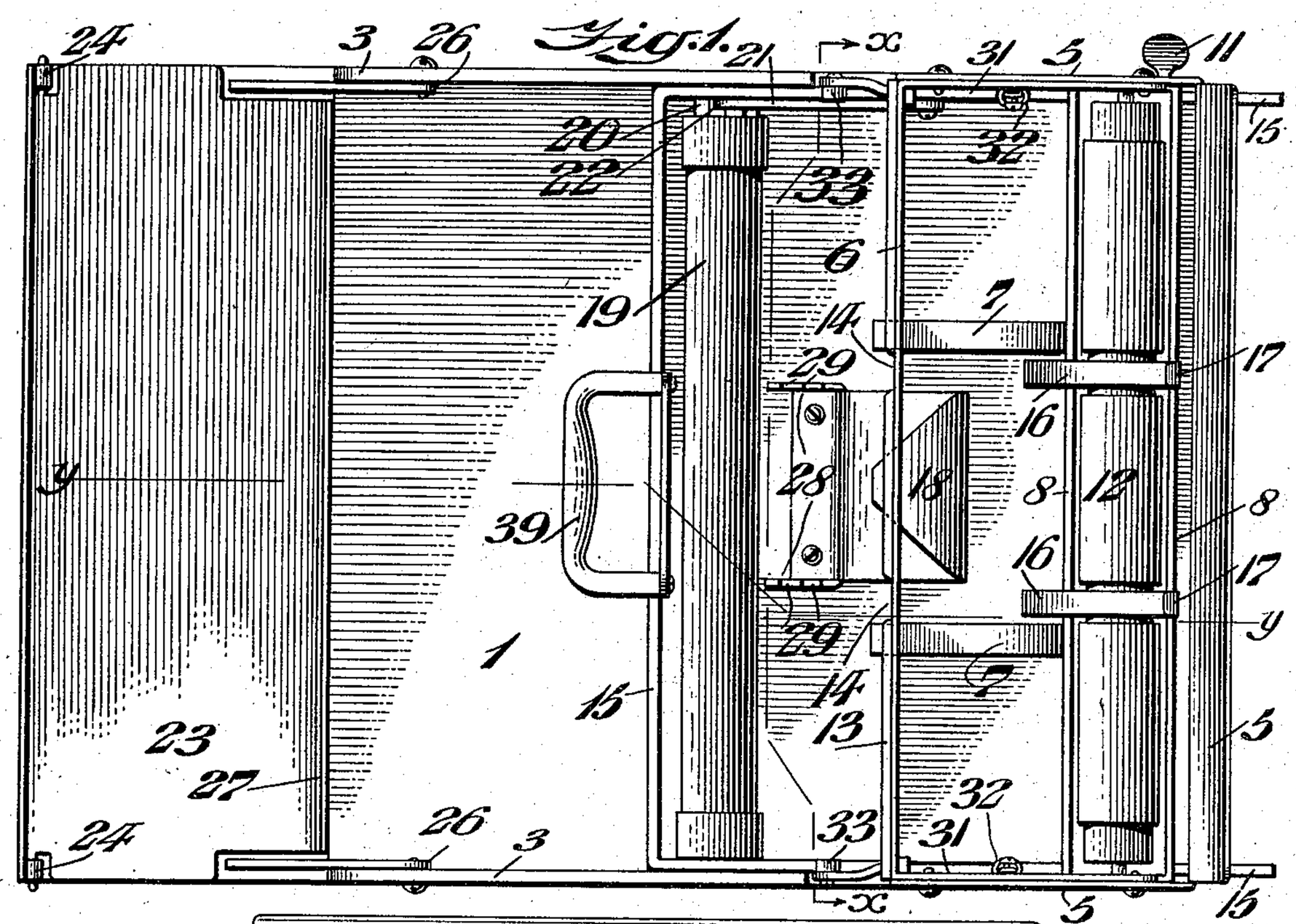
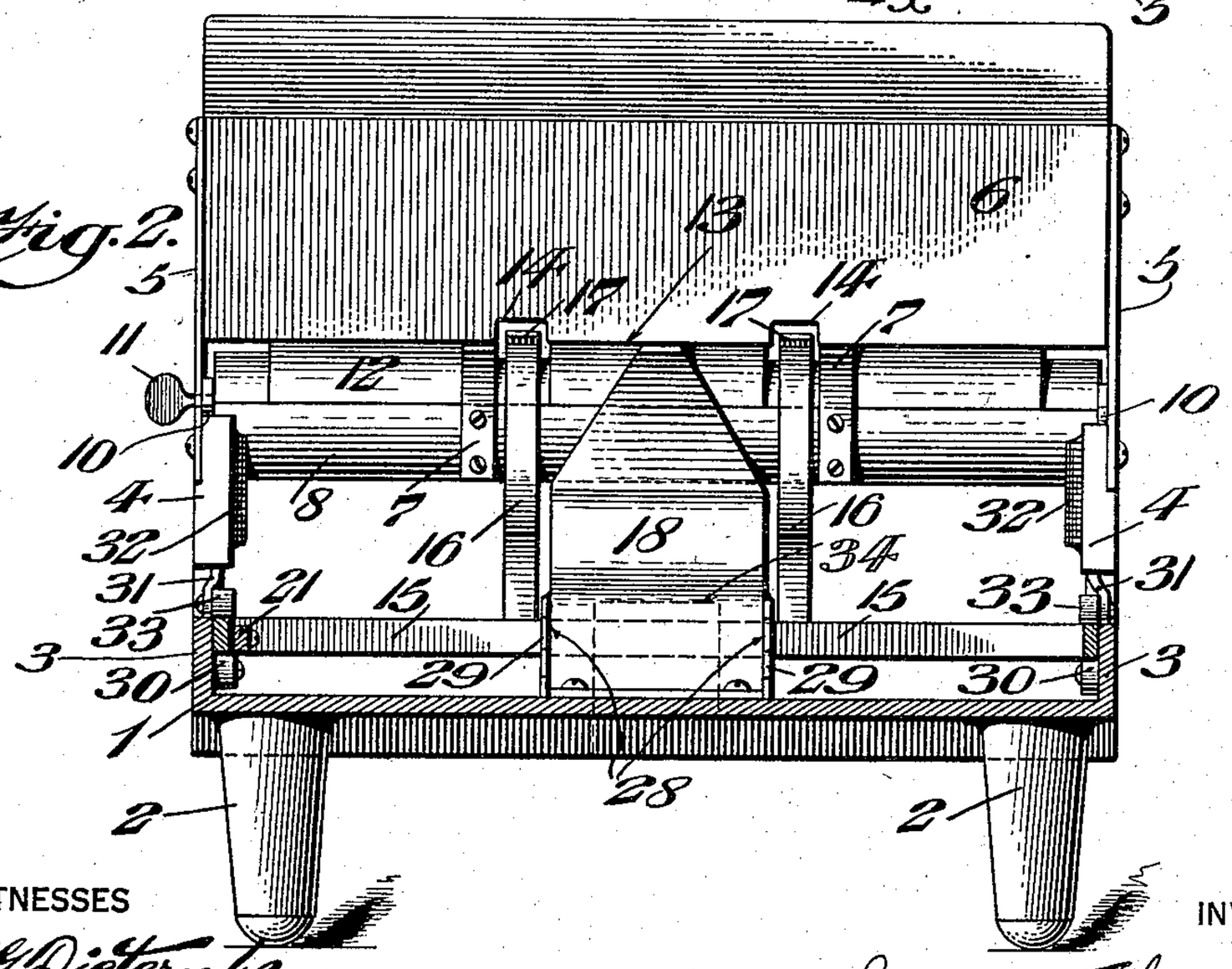


Fig. 2.



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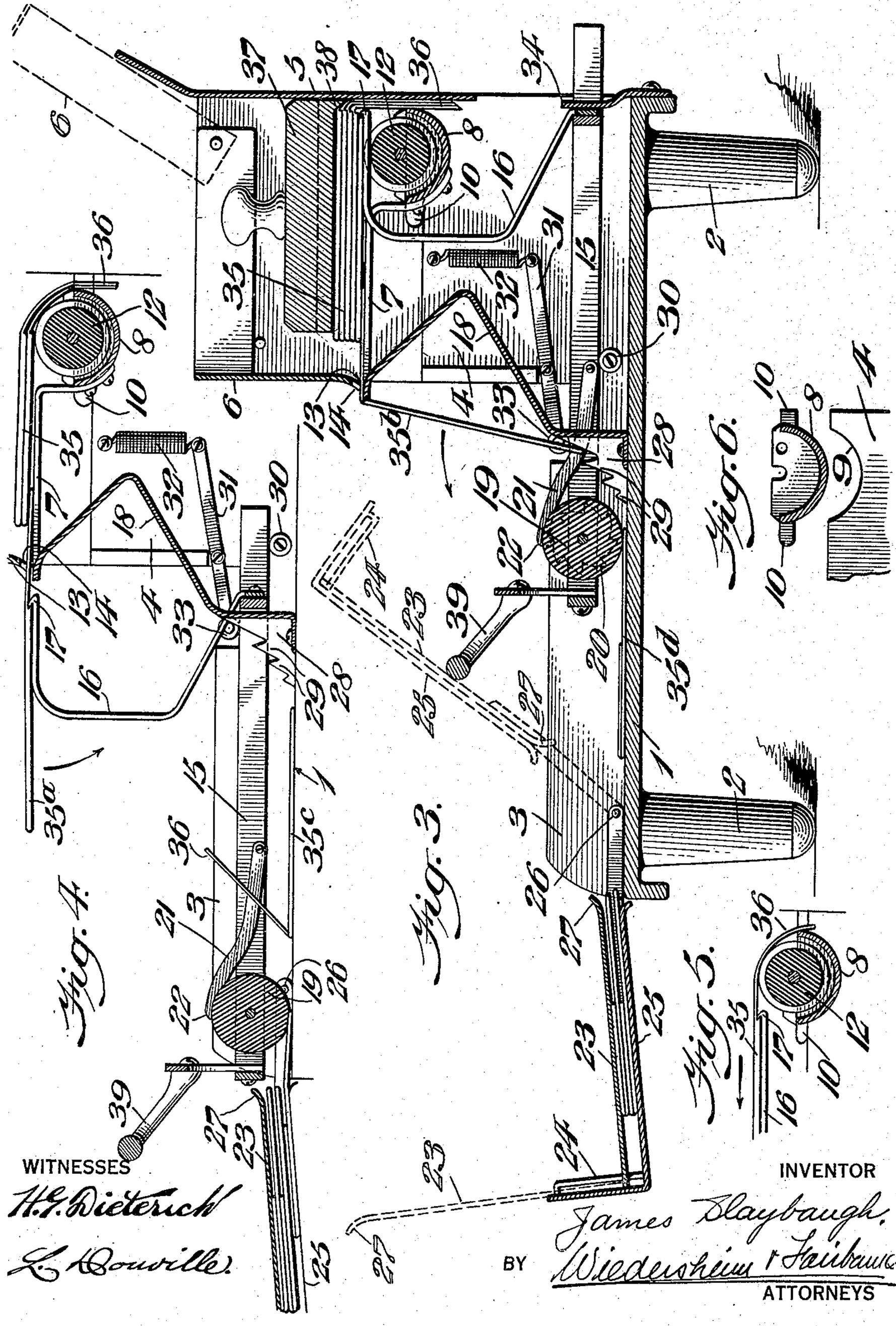

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ENVELOP-SEALING DEVICE.

1,166,553. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed October 14, 1914. Serial No. 866,584.

To all whom it may concern:

Be it known that I, JAMES SLAYBAUGH, a citizen of the United States, residing at Philadelphia, county of Philadelphia, State of Pennsylvania, have invented a new and useful Envelop-Sealing Device, of which the following is a specification.

My invention relates to a new and useful envelop-sealing device and consists of novel means for feeding the envelop, for moistening the flap thereof and for properly locating the envelop for sealing.

It further consists in providing additional means for positively insuring the proper sealing of the envelop.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same will give in practice satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents a plan view of an envelop sealing device embodying my invention. Fig. 2 represents a sectional view, on line *x*—*x* Fig. 1. Fig. 3 represents a sectional view on line *y*—*y*, Fig. 1. Fig. 4 represents a similar section of certain of the parts shown in Fig. 3, in different position. Fig. 5 represents a sectional view of a portion of the device. Fig. 6 represents, in detached position, certain of the parts.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates the bed or support of the device which may be supported in any desired manner, as by the legs 2. The bed is preferably provided with the sides 3 and at a suitable point the said sides are extended upwardly, as at 4. Connected with said extended portions is a frame 5 consisting of three sides, and suitably hinged or otherwise movably connected therewith, is the feed-gate 6, which with the other sides of the frame 5 constitute a hopper or container for a stack of envelops. The lower portion of said hopper, serving as the support proper, of the container, consists of the bars 7 which extend suitably across the lower portion of the hopper, as will be seen in Figs. 1 and 3. These bars are supported in any suitable manner and, as here shown, are connected with, or carried by, the water receptacle 8 which is formed in any suitable or desired manner and is connected with the frame of the device.

As here shown, I have formed the recesses 9 in the upper portion of the extended sides 4 which recesses 9 are adapted to receive the curved lower wall of the water receptacle 8 and I preferably provide ears 10 on the receptacle which rest upon the upper edge of the side wall 4 to assist in preventing improper movement of the receptacle which is positively held in position by means of a thumb-screw 11 whereby the same may be easily removed and replaced. Rotatably mounted in suitable position with respect to the receptacle 8 is the moistening roll 12 which is freely rotatable and adapted to have a portion thereof immersed in the water of said receptacle.

I preferably desire to make the lower edge of the feed-gate outwardly extending, as at 13, said edge being provided, as here shown, with the cut away portions 14 for purposes to be hereinafter described.

Suitably mounted upon the bed, or support 1, is a reciprocating feeder which as here shown consists of a frame 15 which carries the tilting arms 16 which latter are suitably formed to provide hooks or engaging members 17 suitably located in position in order that at the proper time the same will be caused to engage with the inner edge of the envelop body, beneath the flap, and during the reciprocation of the feeder frame 15 the said hooks are permitted free passage by reason of the cut-away portions 14 in the feed-gate 6, as will be clearly understood from Fig. 2.

It will be seen more especially in Fig. 3, that the engaging members 17 are so located with respect to the rearmost throw or movement of the feeder-frame, that the same will be then in position to engage with the said edge of the envelop while the moistening roll is so positioned that when the reciprocating feeder is moved forwardly the withdrawal of the lowermost envelop will cause the gummed portion of the flap to be drawn

across the moistening roll. The frictional engagement between the roll and the flap will cause a suitable amount of rotation of the moistening roll to insure that the same will present the proper amount of moisture at such operation.

18 designates a spring jaw suitably supported, in the present instance, by the bed 1, the jaw member proper thereof being suitably located with respect to the edge 13 of the feed-gate 6 in order that in the forward movement of the feeder an envelop is fed therebetween, and on the return movement of the feeder, the flap of the envelop will be engaged and held between the said jaw and the said feed-gate.

I have provided means movable with the feeder frame for sealing or partly sealing the envelop and, as here shown, this consists of a roller 19 which is rotatably mounted in a suitable manner in the feeder frame 15 and I have provided suitable means for preventing rotation of said roller in one direction of the movement of said feeder frame 15. In this instance, I provide a ratchet 20 and a dog or pawl 21 having a nose 22 adapted to engage with the teeth of said ratchet. I have found, in practice, that the roller will, in most instances, seal the envelop but in order to positively insure the sealing thereof, I have provided a presser-plate 23 beneath which the envelop is adapted to be positioned and, in the present instance, I have movably mounted the presser-plate 23 upon guides 24 carried by the frame 25 which is pivoted at 26 to the bed 1 in order that the frame can be moved into the position seen in dotted lines in Fig. 3 for storage, transportation or otherwise. It will be noted that the presser-plate is preferably freely movable on the guide and is provided with an upwardly flaring lip 27 to insure that the envelop will properly pass to a position beneath said plate.

28 designates serrated or toothed members which are suitably positioned in order that the lower edge of the envelop at the proper time will be caused to engage with the proper teeth thereof to insure that the said envelop is properly directed to its position on the support for sealing, as will be hereinafter described, it being noted that the teeth 29 are of varying heights on the members in order to accommodate different sized envelops. I preferably provide rollers 30 upon which the feeder frame 15 moves and I provide a tension device for holding the frame 15 in its proper position the said tension device, in the present instance, consisting of the pivoted lever 31 to one end of which is connected a spring 32 and upon its opposite end is mounted a roller 33 which is adapted to bear upon the side of the feeder-frame 15, as will be evident.

34 designates a stop carried by the bed 1 against which the feeder-frame 15 abuts in its rearmost position, in order that the hooks or engaging members 17 carried by the said frame 15 will always be properly located in order to engage with the inner edge of an envelop. The envelops 35 are placed in the container with the flaps 36 open and extending downwardly, preferably between the water receptacle 8 and the frame 5, as clearly seen in Fig. 3, and upon said envelops I place a weight 37 for holding the envelops in suitable position and imparting the desired amount of tension thereupon. The said weight is preferably provided with an ear 38 which extends downwardly to engage with a portion of the flaps to assist in holding the same in proper position. The handle 39 is provided at a suitable point on the feeder-frame 15 for ease of operation. A stack of envelops with their flaps open having been placed in position in the container and with the weight 37, thereon, the device is ready for operation. By moving the feeder-frame 15 to its rearmost position (that seen in Fig. 3), the hooks 17 will engage with the inner edge of the inner side of the envelop and by pulling upon the frame 15 and moving the same in a forward direction, the lowermost envelop is removed and drawn forward from its position in the container. During this operation, by reason of the pull on the envelop, the gummed portion of the flap is brought into engagement with the face of the moistening roller 12 and so is moistened. The frictional engagement between the flap and roll will impart a suitable amount of rotation to the roll 12, so that, a properly moistened surface of the roll is placed in position for the next envelop. The envelop is carried forward to the extreme forward position of the frame and the envelop will be in the position seen at 35^a in Fig. 4, with the flap gripped between the edge 13 of the feed gate 6 and the spring jaws 18.

Upon the return movement of the feeder-frame 15 the envelop at 35^a, will fall in the direction indicated by the arrow, in Fig. 4, and will assume the position of the envelop 35^b, as seen in Fig. 3, with the flap still gripped between the feed-gate 6 and spring jaws 18. The feeder-frame 15 has meanwhile been moved back to its rearmost position and the hooks 17 have engaged with the edge of the lowermost envelop. The feeder-frame 15 is again moved forwardly carrying the lowermost envelop with it and a suitable portion of the tilting arms 16 strikes the envelop 35^b, and disengages the flap thereof from the feed-gate 6 and spring jaw 18, tilting the envelop in the direction indicated by the arrow in Fig. 3, so that the said envelop will fall or be deposited upon the bed 1 with the flap 36 thereof uppermost, the envelop

then being in the position seen in Fig. 4, at 35[c], and it being noted that the roller 19 is in advance of the said envelop.

It will be understood that the second mentioned envelop will then be in the position seen at 35[a]. Upon the return movement of the feeder-frame 15, the roller 19 which is movable therewith and which rotates upon the return movement of the said frame, will roll over the moistened flap 36 of the envelop at 35[c] sealing the same, as seen at 35[d] Fig. 3. In the meantime the second mentioned envelop which has been removed, will be located in the position seen at 35[b] and the hooks 17 will have returned to a position to engage the then lowermost envelop. By the next forward movement of the feeder-plate 15 it will be noted that the roller 19 cannot rotate, by reason of the engagement of the dogs 21 with the ratchet 20, and as the roller is in engagement with the sealed envelop, at 35[d], the said envelop will be moved or carried forwardly and placed beneath the presser-plate 23 which will rest upon the sealed flap and envelop and will positively insure that the envelop will be permanently sealed. During this forward movement the envelop at 35[b] will have been deposited upon the bed 1 and the third mentioned envelop, when removed by the hooks 17 will have assumed the position seen, at 35[a] Fig. 4, and the cycle of operation just described is repeated.

It will be noted that the proper one of the teeth 29 of the member 28 will be engaged by the lower edge of the envelop, when in position, at 35[b], and will insure that the said envelop is properly thrown over by the tilting arms 16 and will be positioned upon the bed 1 with the flap uppermost in advance of the roll 19 before its return movement.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a device of the character stated, a support, a container for the envelops with their flaps open, a reciprocating feeder to withdraw the lowermost envelop, means for reversing the envelop to deposit the same upon the support with the flap uppermost, means for moistening the flap, and means movable with said feeder to seal the flap in one movement and in another movement to remove the sealed envelop from its position on the support.

2. In a device of the character stated, a support, a container for the envelops with their flaps open, a moistening device, means for removing the lowermost envelop and for causing the gummed portion of the flap to contact with the moistening device, means for holding the envelop in a substantially upright position, means on said removing means for releasing said envelop, whereby the same will fall upon said support with the flap thereof uppermost, and means movable with said removing means for sealing said flap.

3. In a device of the character stated, a support, a container for the envelops with their flaps open, a moistening device, a reciprocating feeder for removing the lowermost envelop and drawing the gummed portion of the flap into contact with the moistening device, means for holding said envelop in a substantially upright position upon the return movement of said feeder, means on said feeder adapted on the next forward movement thereof to release said envelop from said holding means, whereby the same will fall upon said support with the flap uppermost, and means movable with said feeder for engaging said flap to seal the same.

4. In a device of the character stated, a support, a container for the envelops with their flaps open, a moistening device, a reciprccating feeder for removing the lowermost envelop and drawing the gummed portion of the flap into contact with the moistening device, means for holding said envelop in a substantially upright position upon the return movement of said feeder, means on said feeder adapted on the next forward movement thereof to release said envelop from said holding means, whereby the same will fall upon said support with the flap uppermost, means movable with said feeder for engaging said flap to seal the same, on one movement of said feeder and to remove the sealed envelop from its position upon said support, on the reverse movement of said feeder.

5. In a device of the character stated, a support, a container for the envelops with their flaps open, a moistening device, a reciprocating feeder for removing the lowermost envelop and drawing the gummed portion of the flap thereof into contact with the moistening device, means for holding said envelop in a substantially upright position upon the return movement of said feeder, means on said feeder adapted on the next forward movement thereof to release said envelop from said holding means whereby the same will fall upon said support with the flap uppermost, means with which the lower portion of the envelop is adapted to engage to insure the proper tilting of the envelop, and means, movable with said feeder, for thereafter engaging said flap to seal the same.

6. In a device of the character stated, a support, a container for the envelops with their flaps open, a moistening device, a reciprocating feeder for removing the lowermost envelop and drawing the gummed portion of the flap thereof into contact with the moistening device, means for holding said envelop in a substantially upright position

upon the return movement of said feeder, means on said feeder adapted on the next forward movement thereof to release said envelop from said holding means whereby the same will fall upon said support with the flap uppermost, a presser-plate, and means movable with said feeder for thereafter engaging said flap to seal the same on one movement of said feeder and to move the sealed envelop to a position beneath said plate on the reverse movement of said feeder.

7. In a device of the character stated, a support, a container for the envelops with their flaps open, a moistening device, a reciprocating feeder for removing the lowermost envelop and drawing the gummed portion of the flap into contact with the moistening device, means for supporting said envelop in a substantially upright position upon the return movement of said feeder, means on said feeder adapted on the next forward movement to engage said envelop and to tilt the same whereby it will fall upon said support with the flap uppermost, means with which the lower portion of the envelop engages to insure the proper tilting of said envelop, a presser-plate, and means movable with said feeder for sealing the flap on one movement of said feeder and to move the sealed envelops to a position beneath said plate on the reverse movement of said feeder.

8. In a device of the character stated, a support, a container for the envelops with their flaps open, a feed-gate, a moistening device, means for removing the lowermost envelop and for causing the gummed portion of the flap to contact with the moistening device, a spring jaw between which and the feed-gate, the flap is engaged for holding the envelop in a substantially upright position, means on said removing means for releasing said envelop and causing the same to fall upon said support with the flap thereof uppermost, and means movable with said removing means for sealing said flap.

9. In a device of the character stated, a support, a container for the envelops with their flaps open, a moistening device, means for removing the lowermost envelop and for causing the gummed portion of the flap to contact with the moistening device, means for supporting the envelop in a substantially upright position, means on said removing means for releasing the envelop to cause the same to fall upon said support with the flap thereof uppermost, a roller movable with said removing means to roll over said flap and seal the same in one movement of the feeder, and means for preventing rotation of the said roller in the opposite direction of movement of said feeder whereby the said roller, on the forward movement of the feeder, will remove the sealed envelop from its position on the bed.

10. In a device of the character stated, a support, a container for the envelops with their flaps open, a reciprocating feeder, engaging means carried thereby to engage the edge of the inner side of the lowermost envelop, a moistening device with which the gummed portion of the flap contacts in its passage from the container, jaws to engage the flap and hold the envelop during the return movement of the feeder, a tilting arm carried by said feeder to strike the envelop to deposit the same upon said support with the flap upperpost, and a roller movable with said feeder to seal the flap on the return movement of the said feeder.

11. In a device of the character stated, a support, a container for the envelops with their flaps open, a reciprocating feeder, engaging means carried thereby to engage the edge of the inner side of the lowermost envelop, a moistening device with which the gummed portion of the flap contacts in its passage from the container, jaws to engage the flap and hold the envelop during the return movement of said feeder, a tilting arm carried by said feeder to strike the envelop on the next forward movement of the feeder to deposit the envelop upon said support with the flap uppermost, means for assisting in the proper tilting of the envelop, a roller movable with said feeder to roll over and seal said flap, and means for preventing rotation of said roller on the forward movement of said feeder whereby said roller engages said envelop and removes the same from its position on the support.

12. In a device of the character stated, a support, a container for the envelops with their flaps open, a feed-gate movably mounted with respect to said container and forming a portion thereof, a reciprocating feeder, engaging means carried thereby to engage the edge of the inner side of the lowermost envelop, a moistening roll freely rotatable with which the gummed portion of the flap contacts in its passage from the container and which is rotated thereby, a spring jaw between which and the feed-gate the flap is held during the return movement of said feeder, whereby said envelop is supported in a substantially upright position, a tilting arm carried by said feeder to strike the envelop on the next forward movement of the feeder to deposit the envelop upon said support, with the flap uppermost, means for assisting in the proper tilting of the envelop, a roller movable with said feeder to roll over and seal said flap on the return movement of said feeder, and means for preventing rotation of said roller on the forward movement of said feeder whereby said roller engages said envelop and removes the same from its position on the support.

13. In a device of the character stated, a

support, a container for the envelops with their flaps open, a feed-gate movably mounted with respect to said container and forming a portion thereof, a reciprocating feeder, engaging means carried thereby to engage the edge of the inner side of the lowermost envelop, a moistening roll freely rotatable with which the gummed portion of the flap contacts in its passage from the container and which is rotated thereby, a spring jaw between which and the feed-gate the flap is held during the return movement of said feeder, whereby said envelop is supported in a substantially upright position, a tilting arm carried by said feeder to strike the envelop on the next forward movement of the feeder, to deposit the envelop upon said support, with the flap uppermost, means for assisting in the proper tilting of the envelop, a presser-plate, a roller movable with said feeder to roll over and seal said flap on the return movement of said feeder, and means for preventing rotation of said roller on the forward movement of said feeder whereby said roller engages said envelop and moves the same to a position beneath said presser-plate.

14. In a device of the character stated, a container for a stack of envelops having its bottom upon which the envelops rest spaced from one side to provide a space to receive pendant flaps, means for engagement with the inner edge of the inner side of the lowermost envelop, a moistening device stationarily mounted below the bottom and in proximity to the space and between which and the side of the container the flaps are situated, a platform at one side of the container farthest from the space, means for actuating the engaging means for removing the lowermost envelop from the container to the platform and to draw the gummed portion of the flap against the moistening device, said removing means turning over the envelop as it passes from the container to the platform.

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Witnesses:
C. D. McVay,
F. A. Newton.