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DEVICE FOR ENVELOPING AND SEALING FLAT ARTICLES, FOR EXAMPLE LETTERS
Filed March 4, 1940

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FIG. 1.

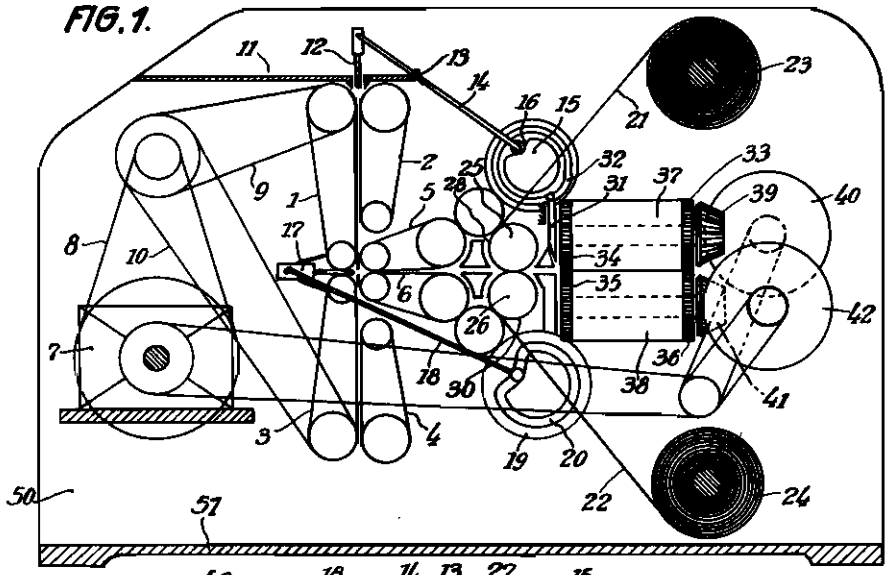


FIG. 2.

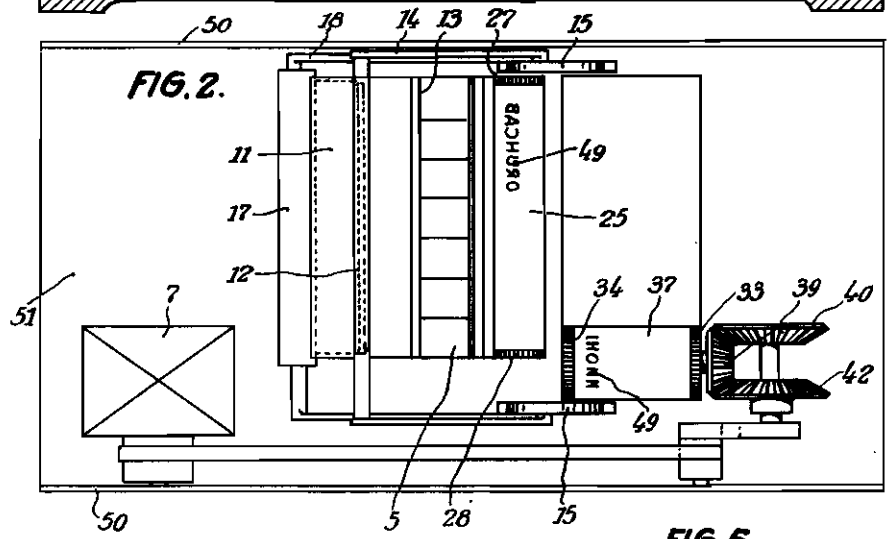


FIG. 3.

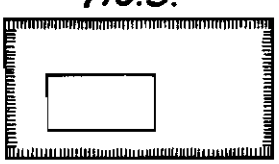


FIG. 4.

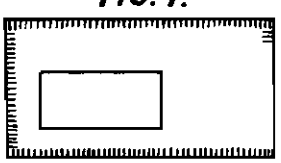
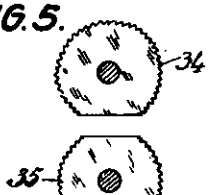


FIG. 5.



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ALIEN PROPERTY CUSTODIAN

DEVICE FOR ENVELOPING AND SEALING FLAT ARTICLES, FOR EXAMPLE LETTERS

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Hitherto, letters and similar flat articles were enveloped by hand. For sealing letters, letter-sealing machines are known. But the known methods require the use of conventional ready envelopes, and the letters have to be folded and inserted in the envelopes by hand. By using conventional ready envelopes, the known methods are rendered more expensive, and inserting the letters in the envelopes by hand requires considerable time and is especially complicated.

With the device according to the invention, the enveloping of letters or similar flat articles is done by placing the letters between the loose parts of the envelope and connecting these parts at the edges so as to form the envelope and to enclose the letter. While conveying the letters to the loose parts of the envelope, the letters are conveniently folded in a suitable manner by doubling or knife-folding so as to have the desired size. According to the invention, the envelopes are formed of a top and a bottom leaf, which leaves are fed separately from rolls or sheets, and which are cut off and connected with each other after the letter has been inserted.

The device according to the invention makes it possible to provide the letters or similar articles in a simple and dry way with an envelope. The device can be worked completely automatically and at a rapid rate. Apart from the technical advantages, consisting in forming a seal which is safe against unauthorized opening, the device is economical and also affords a special advertising effect. The top and bottom leaves may consist of different colored papers or even of different materials, for example of transparent cellulose wrapping and paper.

The device for applying the method according to the invention materially consists of conveyor belts arranged in a machine frame and serving to convey the letters to be enclosed, as well as of rifling wheels for sealing the parts of the envelopes. Between the conveyor belts there may be arranged folding devices for automatically folding the letters to the desired size.

Further details of the subject of the invention will be described in conjunction with the accompanying drawing which is a diagrammatical illustration of an enveloping and sealing machine shown by way of example, and in which:—

Fig. 1 is a side view with the side wall removed,

Fig. 2 is a top view of the arrangement according to the invention, the paper being omitted for the sake of clearness of illustration,

Fig. 3 is a top view of a finished envelope.

Fig. 4 is a detail, and

Fig. 5 is a top view of a packet containing printed matter.

The conveyor belts 1 to 6 are arranged in a machine frame consisting of the side walls 50 and the base plate 51. These conveyor belts are driven by a motor 7 via driving belts 8 to 10. The letter to be enveloped is placed on the table 11 and is inserted between the conveyor belts 1 and 2, for example by the folding knife 12. On the table 11 there is a stop 13 arranged so as to have the fold at the desired place, for example in the first third of a letter sheet. The folding knife 12 is moved by rods 14 from a wheel 15 with a curved slot 16. For forming the second fold in the second third of the paper sheet, there is provided behind the conveyor belts 1 and 2 a folding knife 17, which is moved by rods 18 from a wheel 19 with a curved slot 20. The folding knife 17 inserts the folded letter between the conveyor belts 5, 6, by which it is moved to the enveloping and sealing device.

The paper 21, 22 serving to form the envelope is, for example, supplied from the rolls 23, 24, from which it is drawn through the rollers 25 and 26. At the ends of the rollers 25 and 26 there are rifling wheels 27 to 30. The conveyance of the letters and of the enveloping paper is regulated so that the letter is seized by the rollers 25, 26 when the enveloping paper 21, 22 has passed through the rollers 25, 26 in a width sufficient to form the seal. The rifling wheels 27 to 30 effect the connection of the top and bottom leaves at the lateral edges while the letter is conveyed and enveloped.

Behind the rollers 25, 26 there is a cutting device 31 operated by the wheel 15 and through a slot 32. The paper strips 21, 22 serving to form the envelope are detached, after the letter has passed through, so as to leave below the cutting edge a margin for forming the seal. The edges of the envelope, that are not yet connected, are now sealed by the rifling wheels 33 to 36. These rifling wheels 33 to 36 are attached to the rollers 37, 38 and are driven by the bevel wheels 39, 40 and 41, 42 respectively, running in opposite directions. At the same time, the rifling wheels 33 to 36 serve to deliver the ready enveloped letter. In order to facilitate the insertion of the enveloped letter between the rifling wheels 33 to 36, the latter are flattened at a part of their circumferences, as illustrated in Fig. 4.

On the rollers 25, 26 or 37, 38 there may be arranged a device 40 for printing the envelopes.

The printing may serve for advertising purposes, or it may give the address of the forwarder or of the addressee, or it may contain the impressed postage stamp. It is also possible to form the rifling wheels in known manner with profiles so that the sealed edge after the rifling will bear an advertising text, special signs, or a decoration.

The device according to the invention is suitable for enveloping folded as well as not folded letters, printed matters, or similar flat articles. The sealing of the envelope may either be made at all four edges by means of the rifling wheels as described, or some parts of the envelope may be left open (Fig. 4). It is also possible to use, instead of the rifling wheels, other sealing devices, for example wire-stitching or stamping machines for applying the method according to the invention.

For partly sealing the envelopes for printed matter, the toothing of the rifling wheels is, for example, provided with interruptions. Through the parts remaining open at these places of the envelope it is possible to inspect the contents without damaging the envelope (Fig. 4).

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