

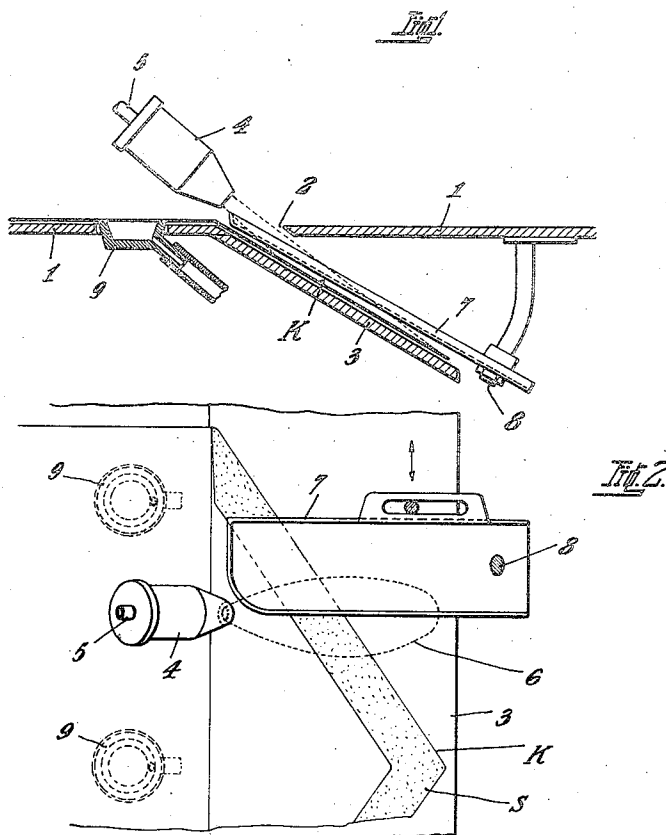
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MOISTENING DEVICE FOR ENVELOPE FLAPS

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MOISTENING DEVICE FOR ENVELOPE FLAPS

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1 Claim. (Cl. 91—45)

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This invention relates to moistening apparatus and particularly to a moistening device of the type wherein layers of adhesive substance, preferably on closing flaps of envelopes, are automatically moistened for being pasted up afterwards.

In hitherto known moistening apparatus, the soaking medium for the adhesive layer is applied upon the layer by means of rollers or stamps, which are moved thereupon. However, in the course of a continuous operation of such apparatus, the rollers or stamps will soon be smeared over with adhesive substance and will consequently transfer the same upon places on the flap where it is not desired, so that the closing flap then often sticks to the contents of the envelope. Besides, felt cushion of moistening stamps and felt coating of rollers easily glue together with the layer of adhesive substance. The applying of a suitable quantity of soaking medium in such apparatus is very difficult.

It is the object of the present invention to avoid the above cited disadvantages of known moistening apparatus with a method of moistening layers of adhesive substance, which consists in atomizing and applying a soaking medium upon said layers by means of atomizer nozzles.

Another feature of the method according to the invention consists in moving the bearer of the layer of adhesive substance transversely of the axis of said atomizer nozzles and inclined at an acute angle relative to said axis during the atomizing and applying process of the soaking medium.

It is a further feature of the invention to provide a moistening device with one or more atomizer nozzles, whereto regulating means may be coordinated for adjusting the quantity of soaking medium and the effective range of the jet.

These and other minor objects of this invention will more clearly appear from the detailed description given hereinafter, taken in connections with the accompanying drawing which illustrates, by way of example, a preferred embodiment of the moistening device according to the invention.

In the drawing:

Fig. 1 is a vertical sectional view of the moistening device and

Fig. 2 is a partial top view thereto.

The table board 1 may belong to an envelope closing apparatus. This table board 1 has a slot 2 extending transversal to the vertical section shown in Fig. 1, on the left border of which a

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downwardly inclined plate or frame 3 is attached to the table board 1. The envelope is moved on the table board 1 along the slot 2 by means of a suction conveyer 9, whereby the opened closing flap K slides upon the inclined plate 3, so that its layer S of adhesive substance looks upwards.

Above the table board 1 near the slot 2 is provided a removable liquid atomizer nozzle 4. This nozzle may be carried by its feed pipe 5 and is arranged under a relatively small, acute angle with respect to the inclined plate 3, so that the jet of atomized liquid spreads downwardly over the whole height of the layer S of adhesive substance on the inclined closing flap K of the envelope, which adhesive substance is to be soaked thereby. The feed pipe 5 is in connection with a not illustrated high pressure pump, which feeds liquid under pressure to the atomizer nozzle 4. The nozzle has several discharge openings which are arranged on a circle. However, also a nozzle with a single discharge opening may be used.

As for practical reasons the discharge openings of the nozzle 4 are distributed in regular intervals on a circle and as there is a very small angle between the axis of the nozzle and the inclined plane of the opened flap K, the various partial jets will strike upon the flap K in unequal distance from one to the next along the dotted line 6 shown in Fig. 2. The spots at the upper portion of the field limited by the line 6 are closer together than the spots at the lower portion and therefore the upper portion will receive more atomized liquid than the lower portion. In order to equalize this irregularity and to obtain a most uniform moistening of the layer of adhesive substance, there is disposed a screening wing 7 in a small distance from the plate 3 and below the nozzle 4. This wing 7 is pivotable about the screw bolt 8 and has an upper and lateral borders which are bent up for serving as gutter for gathered liquid on the jets. According to its position, the wing 7 will gather more or less jets of atomized liquid and will thus prevent an excessive moistening of the upper portion of the closing flap K. It depends on the absorption of liquid by the layer of adhesive substance, how intensive the moistening must be. It can be adjusted by an according turning of the screening wing 7.

Water is usually used as liquid for soaking the adhesive substance, but for shortening the duration therefore, it may be hot water, saturated or even superheated steam. Of course, instead of

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water or steam may be used a chemical solvent for the adhesive substance.

The process, which may be performed with the above described moistening device, consists in moving the envelope over the table board 1 in the direction of the slot 2 by means of the suction conveyor 3, whereby the back of the envelope looks upwards and the opened closing flap K is downwardly bent upon the inclined plate 3. In this state the envelope passes below the atomizer nozzle 4, by which one or several jets of atomized water is discharged, which moisten the whole inner side of the closing flap K, however only as intensive as is necessary for sufficiently soaking the layer S of adhesive substance. The water running off the plate 3 drops into a not illustrated reservoir disposed therebelow, wherefrom water is pressed to the atomizer nozzle by a not illustrated pump. Also atomized water gathered by the screening wing 7 runs back into this reservoir.

Instead of a single atomizer nozzle for liquid or steam there may be provided several of such nozzles.

The above described moistening device and method has the advantage, in comparison with known moistening apparatus, to be of simple construction and to work cleanly.

Besides this moistening method allows a much finer dosing of the quantity of soaking medium applied upon the layer of adhesive substance, than could be obtained hitherto in known roller or stamp moistening apparatus. There are three means for varying the quantity of the soaking medium: The screening wing 7 may be accordingly adjusted by turning the same, the delivery

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of the pump may be varied and the cross section of the nozzle or nozzles could be altered.

What is claimed is:

A device for moistening the adhesive layers on closing flaps of envelopes, comprising table provided with a slot therein, an atomizer nozzle for atomizing a moistening medium, said nozzle being disposed above said slot and having the axis of the nozzle spray downwardly inclined across said slot, a supporting plate for said flap directed downwardly from said slot at an acute angle relatively to the direction of spray of the nozzle, means for moving said flap transversely with respect to the spray of the nozzle on said supporting plate, a spray intercepting screen mounted for pivotal movement above said flap to control the distribution of atomized moistening medium on said adhesive layer, and means on said screen to collect surplus moistening medium.

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