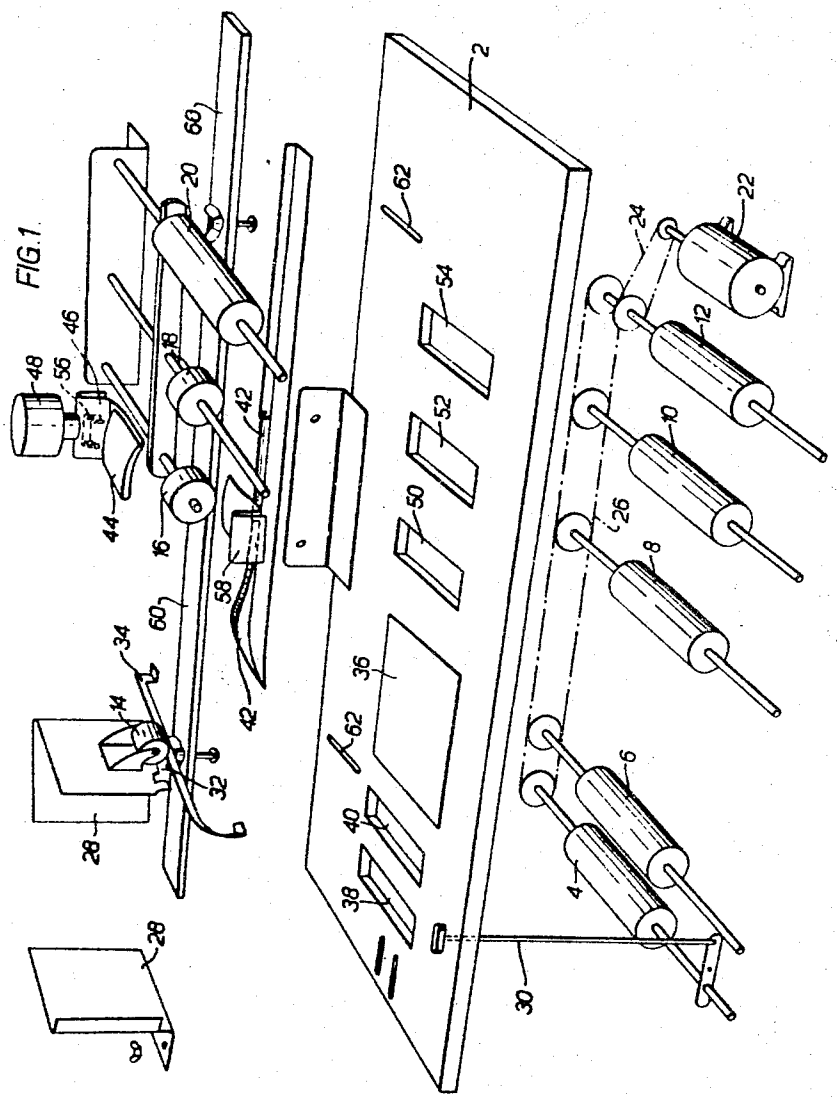
Sept. 13, 1966 H. M. ENGLAND 3,271,926

OFFICE MAILING MACHINES

Filed Nov. 27, 1963 2 Sheets-Sheet 1

FIG. 1



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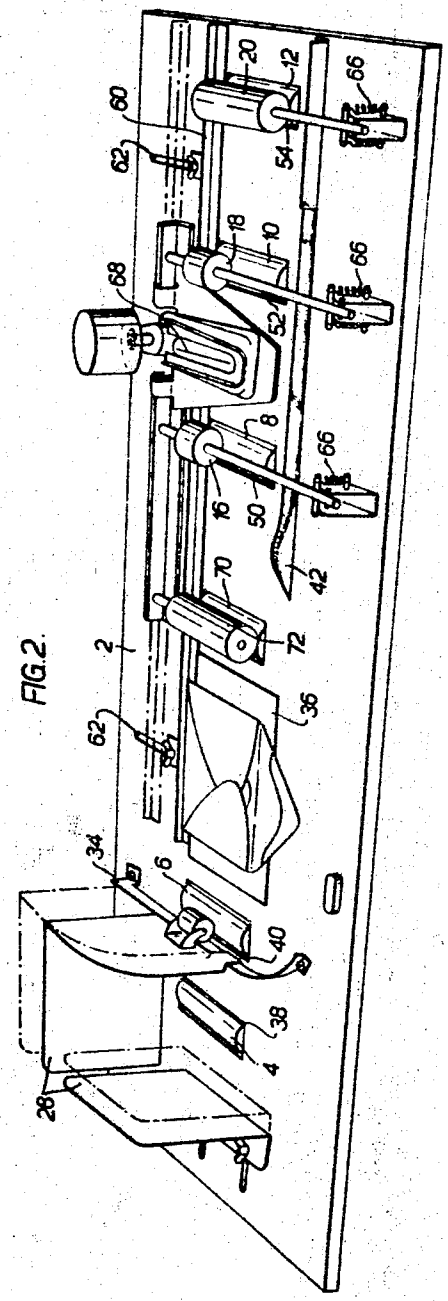


FIG. 2.

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OFFICE MAILING MACHINES

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5 Claims. (Cl. 53—188)

This invention relates to office mailing machines.

In offices most of the general mail is received by the postal department towards the end of each day and it often happens that very little time is available for handling it. Therefore, anything that can be devised to make possible more easy and speedy handling of this necessary and urgent work is of great importance.

Several excellent machines have been proposed previously for handling quickly and adequately long runs of constant sizes of envelopes and numbers of enclosures, but the time which is required for resetting these machines which have previously been proposed makes them unsuitable for handling mixed general mail.

The main object of the present invention is to provide a machine which will achieve one or more of the following results:

(1) Be easily and quickly adjustable to deal with different sizes of envelopes.

(2) Give automatic delivery of envelopes to the envelope inserting position of the machine.

(3) Allow the operator to insert enclosures of varying size, shape and thickness without any need to reset the machine.

(4) Give automatic sealing and take-away to a franking machine or other aparatus.

In accordance with the present invention I provide an office mailing machine comprising an adjustable hopper adapted to receive a stack of envelopes, means for bringing a feed roller, driven by a motor, into momentary contact with a bottom envelope of the stack so as to feed envelopes one at a time from the hopper to an inserting pad, and means for feeding the envelopes forward through the machine for the inserting pad.

In order to accommodate envelopes of different sizes it is only necessary to adjust the size of the hopper and to alter the position of a guide. As an example, in order to take larger envelopes the back of the hopper which is mounted on the back guide and one side of the hopper may be moved outwardly, adjustment of the size of the hopper may be controlled by three thumb screws.

As the enclosures are inserted manually into the envelope the size and bulk of each enclosure does not matter and different enclosures for successive envelopes will not necessitate any adjustment of the machine. The envelopes disposed in the hopper are released one at a time by depressing a feed bar for moving the feed roller referred to above. The envelopes are then fed to the inserting pad and when the contents have been inserted the envelope may be pushed slightly to one side, e.g. to the right, to be taken up by delivery rollers, sealed, and passed through the machine automatically to a franking or other machine.

Important features of my new office mailing machine are as follows:

(a) The provision of an inserting pad which allows enclosures of varying size and thickness to be inserted without having to reset the machine.

(b) The delivery of the envelopes from the hopper which may be effected by bringing a rotatable roller into momentary contact with the bottom of a stack of envelopes.

(c) The overall simplicity of design and construction of the machine.

(d) The easy and safe operation of the machine.

In order that the invention may be clearly understood and readily carried into effect reference is now directed to the accompanying drawings, in which:

FIGURE 1 is an exploded diagrammatic view; and

FIGURE 2 is a perspective view of a slightly modified form of construction.

The machine illustrated in FIGURE 1 comprises a working table 2 provided with a number of openings through which driving rollers 4, 6, 8, 10 and 12 disposed below the table 2 may project to co-operate with other rollers 14, 16, 18, 20 above the table. The rollers 4, 6, 8, 10 and 12 are driven by an electric motor 22 which is coupled to the driven rollers by belts 24, 26. The rollers 4 to 12 are therefore the driving rollers and to assist their operation in feeding forward envelopes the rollers may be covered by short rubber or like projections. The free rollers 14, 16, 18 and 20 each of which engages the corresponding driving roller may be covered with foam rubber or other resilient and soft material. It will be understood therefore that as an envelope comes into contact with a pair of rollers, it will be carried forward through the machine and the resilience of the covering of the free rollers make automatic compensation for the varying pressure created by the different thicknesses of envelopes and enclosures.

The machine has a hopper 28 to receive a stack of envelopes arranged with their flaps open and disposed facing towards the left when the machine is viewed by an operator standing at the motor (22) end of the machine. The envelopes in the stack are arranged with their opening upwards. Immediately below the hopper 28 is disposed the roller 4 which I call the feed roller. Feeding of envelopes is effected by raising the feed roller 4 momentarily by means of a feed bar 30 to bring the roller 4 into sudden and brief contact with the envelopes at the bottom of the stack. In this way the bottom envelope is snatched from the stack and is projected forwards, i.e. to the right in FIGURE 1 through a slot 32, under a guide bar 34 which also serves to support the hopper into contact with the pair of rollers 6, 14 which feed the envelope forward and throw it on to a resilient inserting pad 36. The slot 32 is of just sufficient size to allow one envelope to pass through.

It will be understood in the operation described above that the roller 4 is projected through the opening 38 and the roller 6 projects through the opening 40 into contact with the roller 14. The hopper 28 is adjustable as to its size so that it will accommodate different sizes of envelopes, one of the walls of the hopper being movable towards and away from the other wall.

The inserting pad 36 comprises a pad of foam rubber or other suitable material which is preferably let into the working table 2 and may fit flush with the surface. Envelopes are fed on to the inserting pad 36 with the opening facing upwards and towards the operator. When slight pressure is exerted on the inserting pad 36 through the mouth of an envelope, the depression causes the centre of the envelope to sink which in turn forces the sides of the envelope up and this automatically opens the mouth

of the envelope ready to receive the contents which are put into the envelope manually.

When the contents have been inserted into an envelope it is pushed to the right by hand to be picked up by the next pair of rollers **8** and **16**. The rollers **8, 16** pass the envelope along a curved folding guide **42** which engages the flap of the envelope, and turns the flap up and over in such a way that as an envelope passes along the shaped guide **42** the flap of the envelope is folded over and is brought into contact with a dampening device including a pad **44**, a plate **46** and a liquid container **48**. From the damping device, the envelope passes to the pair of rollers **10, 18**. The envelope is then passed between another set of rollers **12, 20**, to seal the closed flap, after which it may be passed into a receiving hopper or through a franking machine. Optionally, as illustrated in FIGURE 2, an extra pair of rollers **70, 72** may be provided between the pad **36** and the rollers **8, 16**. It will be understood that the roller pairs **8, 16** and **10, 18** and **12, 20** contact one another through the openings **50, 52, 54**. The rollers **16** and **18** have short axial lengths to allow the flap to engage the pad **44**.

In the drawings, the dampening device is in the form of a small platform on plate **46** mounted on one of the roller guides, this plate is lined with absorbent material **44** which may be gravity fed from the container **48** preferably held in position by a spring clip **56**. Over this plate there is a guide which may be in the form of a finger or pressure plate which ensures that the flap of each envelope makes contact with the moistened material.

The machine is provided with a rear guide **60** adjustable towards and away from the operator in slots **62**.

In FIGURE 2, the damping device is gravity fed with the moisture seeping through a narrow slot **68** over which the flap of the envelope passes. This is more reliable and controlled than the pad of absorbent material described above.

FIGURE 2 also introduces sprung toggle mounting **66** for pressure rollers. The purpose of the toggle mounting is to make provision for quick release of the rollers in the event of an envelope becoming jammed through creasing or careless filling. In the machine illustrated in FIGURE 1, the spindles holding the pressure rollers are secured at each end and it is found that if any jamming occurs, the envelope has to be pulled away with some force. With a machine constructed as in FIGURE 2, if jamming occurs it is only necessary to release the rollers by lifting slightly and taking away the envelope, and the rollers automatically revert to their normal position.

In FIGURE 2, I have also provided an extra pair of rollers **70, 72** between the inserting pad and the clamping device.

I claim:

1. An office mailing machine comprising an adjustable hopper adapted to receive a stack of envelopes, a power driven roller, a feed bar for raising the roller into momentary contact with the lowermost envelope of the stack to feed the envelopes one by one from the hopper, a working table, pairs of vertically aligned co-acting feed rollers spaced along the table for moving each envelope as it issues from the hopper, power means for collectively driving the lower rollers of the pairs of rollers, opening in the table through which openings the said lower rollers project, a pad of resilient material at a first operative position on the table for facilitating the manual opening of each envelope for the insertion of enclosures therein, a curved guide at a second operative position on the table for engagement by the flap of each envelope whereby the flap is turned up and then over each envelope, a moistening device at a third operative position on the table for applying moisture to the sealing margins of the flap, and a pair of co-acting, vertically aligned rollers for applying pressure to the flap to effect the sealing of the envelope.

2. An office mailing machine comprising an adjustable hopper adapted to receive a stack of envelopes, a power driven roller, a feed bar for manually raising the roller into momentary contact with the lowermost envelope of the stack to feed the envelopes one by one from the hopper, a working table, pairs of vertically aligned co-acting feed rollers spaced along the table for moving each envelope as it issues from the hopper, power means for collectively driving the lower rollers of the pairs of rollers, openings in the table through which openings the said lower rollers project, a recessed pad of resilient material at a first operative position on the table for facilitating the manual opening of each envelope for the insertion of closures therein, a curved guide at a second operative position on the table for engagement by the flap of each envelope whereby the flap is turned up and then over each envelope, a moistening device at a third operative position on the table said device comprising an absorbent pad, means for pressing the flap of each envelope onto the pad and a liquid container for the supply of liquid to the pad, and a pair of co-acting vertically aligned rollers for applying pressure to the flap to effect the sealing of the envelope.

3. An office mailing machine comprising an adjustable hopper adapted to receive a stack of envelopes, a power driven roller, a feed bar for manually raising the roller into momentary contact with the lowermost envelope of the stack to feed the envelopes one by one from the hopper, a working table, pairs of vertically aligned co-acting feed rollers spaced along the table for moving each envelope as it issues from the hopper, power means for driving the lower rollers of the pairs of rollers synchronously, openings in the table through which openings the said lower rollers project, a recessed pad of resilient material at a first operative position on the table for facilitating the manual opening of each envelope for the insertion of enclosures thereon, a curved guide at a second operative position on the table for the engagement by the flap of each envelope whereby the flap is turned up and then over each envelope a moistening device at a third operative position on the table said device comprising a plate over which the flap of each envelope passes, a narrow slot in the plate through which a liquid seeps, and a liquid container from which the liquid is gravity fed to the slot, and a pair of co-acting vertically alinged rollers for applying pressure to the flap to effect the sealing of the envelopes.

4. An office mailing machine comprising an adjustable hopper adapted to receive a stack of envelopes, a power driven roller, a manually operable feed bar for raising the roller into momentary contaet with the lowermost envelope of the stack to feed the envelopes one by one from the hopper, a working table, pairs of vertically aligned co-acting feed rollers spaced along the table for moving each envelope as it issues from the hopper, some at least of the pairs of rollers having spring toggle mountings, to accommodate envelopes of different thickness, power means for collectively driving the lower rollers of the pairs of rollers, openings in the table through which the said lower rollers project, a recessed pad of resilient material at a first operative position on the table for facilitating the manual opening of each envelope for the insertion of enclosures therein, a guide at a second operative position on the table, said guide being shaped to engage the flap of each envelope and to turn it up and then over the envelope, a moistening device at a third operative position on the table said device comprising an absorbent pad, means for pressing the flap of each envelope onto the pad, and a liquid container for the supply of liquid to the pad, and a pair of co-acting vertically aligned rollers for applying pressure to the flap to effect the sealing of the envelope.

5. An office mailing machine comprising an adjustable hopper adapted to receive a stack of envelopes, a power driven roller, a manually operable feed bar for raising the roller into momentary contact with the lowermost envelope of the stack to feed the envelopes one by one from the hopper, a working table, pairs of vertically

aligned co-acting feed rollers spaced along the table for moving each envelope as it issues from the hopper, some at least of the pairs of rollers having spring toggle mountings to accommodate envelopes of different thickness, power means for collectively driving the lower rollers of the pairs of rollers, openings in the table through which the said lower rollers project, a recessed pad of resilient material at a first operative position on the table for facilitating the manual opening of each envelope for the insertion of enclosures, a guide at a second operative position on the table, said guide being shaped to engage the flap of each envelope and to turn it up and then over the envelope and a moistening device at a third operative position on the table said device comprising a plate over which the flap of each envelope passes, a narrow slot in the plate through which a liquid seeps, and a liquid container from which the liquid is gravity fed to the slot, and a pair of co-acting vertically aligned rollers for applying pressure to the flap to effect the sealing of the envelope.

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