April 24, 1951 F. A. MONK 2,550,160

MAGAZINE FOR MULTIGRAPH MACHINES OR THE LIKE

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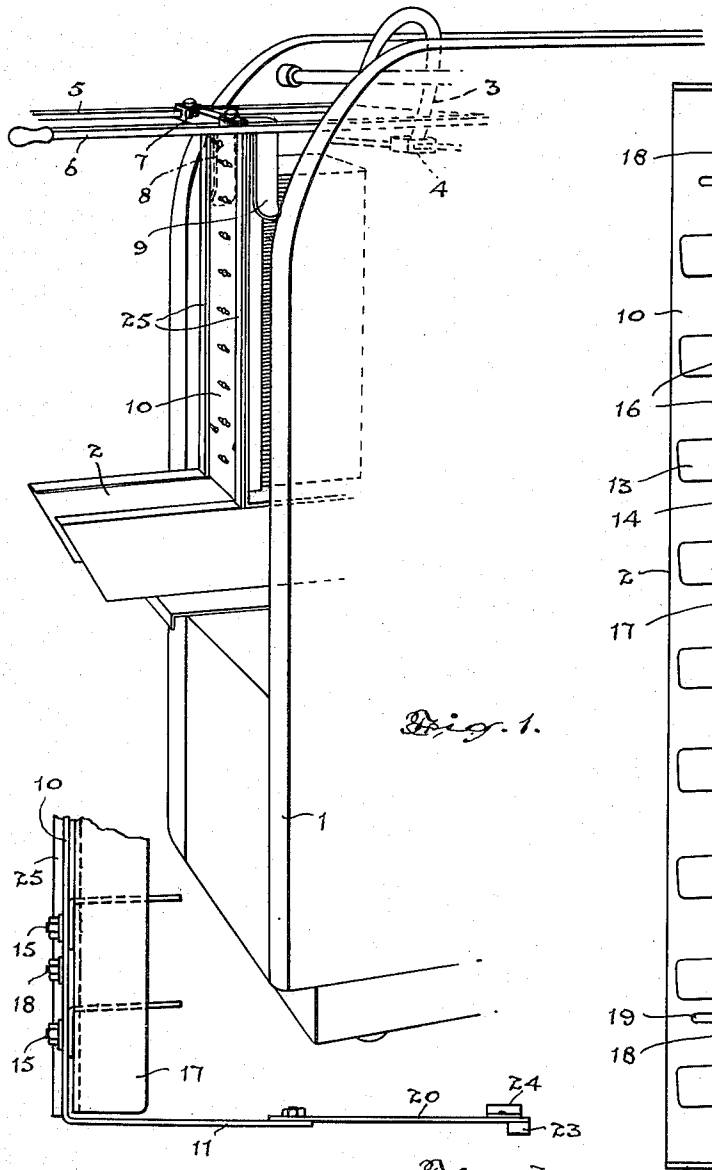


Fig. 1.

Fig. 3.

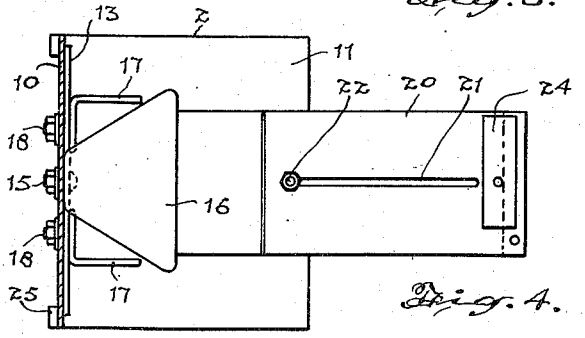


Fig. 4.

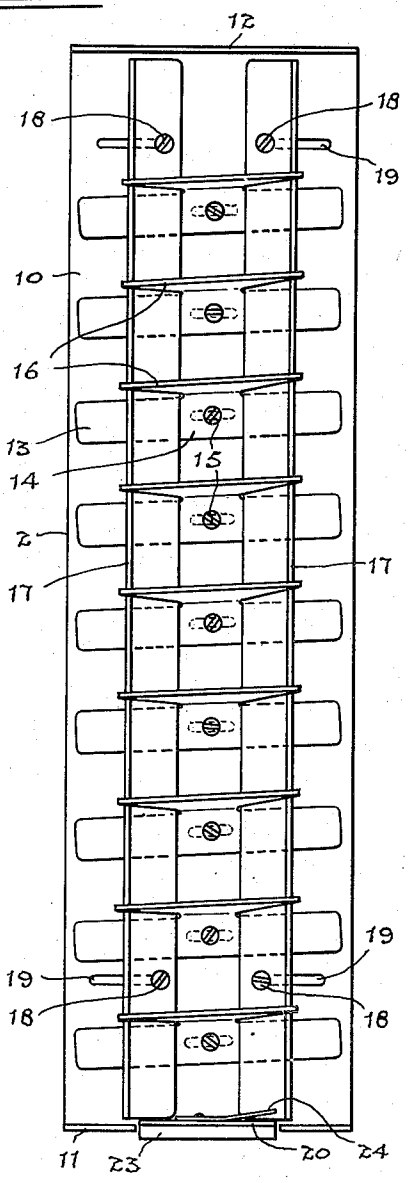


Fig. 2.

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MAGAZINE FOR MULTIGRAPH MACHINES OR THE LIKE

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9 Claims. (Cl. 271—61)

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This invention relates to an envelope magazine for facilitating the feed of envelopes or the like in a printing machine such as multigraph machine or the like and the principal object of the invention is to provide an envelope magazine which can be easily and quickly loaded and inserted into a multigraph machine and when emptied can be quickly replaced with a loaded magazine eliminating delays in machine operation, thus greatly increasing the capacity of the machine and reducing the cost of printing the envelopes.

A further and important object is to provide an envelope magazine assembly which can be readily adjusted to receive any desired size of envelope and will hold the envelope in stacked arrangement with their surfaces horizontal independent of the thickness of their flaps to ensure uniform dependable feed into the machine.

A still further object is to provide a magazine which will ensure that the last envelope is delivered into the machine for printing.

The principal feature of the invention consists in providing an envelope magazine adapted to be placed on the feed magazine of a multigraph machine or the like and comprising a vertical backing plate having a forwardly extending supporting base and provided with a pair of spaced vertical envelope aligning angled plates secured thereto and extending forwardly therefrom and adjustable laterally to receive a stock of desired width of envelope therebetween and a plurality of vertically spaced brackets secured to and extending forwardly from said backing plates and subdividing the stacked envelopes into a plurality of component stacks, the brackets being tiltable transversely of the backing plate to compensate for the thickness of envelope flap to maintain the envelopes in the stack horizontal.

A further important feature consists in securing a plate to the base of the backing plate and providing a spring arm on the outer end of this plate to urge the outer end of the envelopes upwardly, said plate being adjustable longitudinally of the backing plate base.

Referring to the accompanying drawings, Figure 1 is a perspective view of a multigraph machine illustrating the manner in which my envelope magazine assembly is utilized in conjunction therewith.

Figure 2 is a front elevational view of my magazine assembly.

Figure 3 is a side elevational view of the bottom portion of the magazine assembly.

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Figure 4 is a plan view of my magazine with the top flange cut away.

Heretofore in printing envelopes or the like with a multigraph or other printing machine, it has been necessary to place the envelopes by hand on the paper feed magazine and to carefully align the envelopes in a vertical stack. To compensate for the low side of the envelope stack along the edge of the envelope opposite the flap it has been necessary to utilize wooden wedges which are inserted at intervals in the stack. These wedges have to be changed or inserted at different intervals corresponding to the thickness of the material of the particular envelopes being printed. Even with the utmost care in stacking the envelopes it is difficult to maintain the stack in alignment and the envelopes level or horizontal throughout the movement of the magazine resulting in inconsistent printing, and waste of a high percentage of envelopes. Frequently envelopes slide off the stack further delaying the envelope feed.

The present invention has therefore been devised to overcome the above difficulties and to eliminate the previous long interruptions of machine operation which were required for the careful stacking of the envelopes on the feed magazine.

With reference to the accompanying drawings it will be seen that I illustrate my magazine in conjunction with a conventional type of multigraph machine 1 having a vertically moving feed magazine 2 and the conventional paper pick-up mechanism 3 including the sucker foot 4 which serves to lift the top sheet from the stack placed on the feed magazine and to direct it between the pull out rollers.

Extending outwardly from the machine above the feed magazine are the spaced parallel arms 5 and 6 which support a cross bar 7 which is slidable along the arms 5 and 6 and carried the adjustable central guide 8 and adjustable side guides 9.

In the normal use of the multigraph machine with paper, the paper is stacked on the feed magazine 2 with the magazine lowered so that the top sheet is just below the paper pick-up mechanism.

As the top sheet is being segregated from the stack and delivered into the machine by the paper pick-up mechanism, the feed magazine 2 moves upwardly automatically maintaining the top sheet in the correct position relative to the pick-up mechanism.

The various guides described above engage the

stack and maintain the sheets being delivered into the machine in correct alignment.

My envelope magazine is adapted to be used in connection with the multigraph machine without necessitating any modifications or alterations thereto.

As illustrated, the magazine includes a sheet metal backing plate 10 which is supported in a vertical position by a forwardly turned base portion 11 and has a forwardly turned flange 12 at the top.

Secured to this backing plate 10 along the vertical centre line thereof are vertically spaced brackets 13 each of which includes the vertical backing portion 14 pivotally held to the back plate by the bolt 15 or other suitable pivot members and the horizontal triangular shelf portion 16 which projects centrally from the back portion 14 increasing in length forwardly of the backing portion. Thus it will be seen that the brackets 13 are tiltable about the pivots or bolts 15 and the triangular shelf portions 16 which are arranged with one apex adjacent the backing portions are tiltable above the horizontal transversely of the backing plate 10.

If desirable the shelves 16 may also be inclined slightly upward as illustrated in Figure 3.

As illustrated in Figure 2 the brackets 13 which are in vertical alignment are equally spaced to receive a convenient number of envelopes therebetween, for instance, an even multiple of a hundred. Secured to the backing plate 10 over the vertical bracket backing portion 14 are a pair of vertical right angle plates 17 forming side guides spaced one either side of the bracket shelf portion 16.

These plates 17 are held to the backing plate by bolts 18 engaging in the horizontal slots 19 so that the plates 17 are adjustable laterally towards or away from each other.

Slidably mounted on the base portion 11 of the backing plate is a plate 20 having a longitudinal slot 21 in which engages a securing bolt 22. This slot arrangement permits the plate 20 to be moved relative to the backing plate 10 corresponding to the length of the envelope to be printed.

Secured to the underside of the plate 20 at the outer end is a bar 23, while secured to the top of the plate 20 at the outer end is a cantilever spring arm 24 which is adjustable transversely of the plate.

In loading the magazines the envelopes are stacked between the vertical aligning plates 17 which are adjusted laterally to the width of the envelope and the brackets 13 are tilted transversely of the backing plate to compensate for the thickness of the envelope flaps to maintain the envelopes level or horizontal. The bolts 18 may then be tightened to securely lock the brackets 13 in adjusted positions by drawing the plates 17 in to close engagement therewith.

The envelopes are thus held in vertical alignment by the aligning plates or guides 17 and are maintained with their surfaces horizontal by the use of the brackets 13 and the cantilever springs 24 serve to urge their outermost or forward end upwardly.

The loaded magazine is then placed on the feed magazine 2 of the multigraph machine and is properly centered between the side guides 9. The guide 8 engages the rear face of the vertical backing plate 10. To provide additional guiding surfaces bearer bars 25 are secured to the rearward face of the backing plate and these guides

are adapted to engage the cross bar 7 as the magazine is fed upwardly, thus as the feed magazine 2 moves upwardly the envelope magazine will be properly guided and will in turn maintain the envelopes in proper alignment so that each envelope may be correctly picked up and delivered into the machine by the paper pick-up mechanism 3.

With the surface of the envelop maintained level or horizontal the feed mechanism will function correctly and the air lock of the sucker foot 4 will be properly maintained.

While one magazine is employed with the multigraph machine, a similar envelope magazine may be rapidly and easily loaded and following the completion of the delivery of all of the envelopes in the first magazine into the machine it can be quickly removed from the machine feed magazine 2 and the loaded envelope magazine placed thereon in correct position between the guides. Thus there will be no interruption or delay in the machine operation materially increasing its capacity.

If it is desired to print envelopes of different size or to print on the reverse side of the envelope the guide plates 17 can be quickly adjusted, the bottom plate 20 moved to its correct position and the brackets 13 tilted as necessary to maintain the envelopes in a level aligned stack.

The use of the spring arm 24 which urges the outer end of the envelopes upwardly as described ensures that the last envelope is maintained in correct position to be delivered into the machine.

It will be noted that with the triangular shaped bracket shelf portions 16 that ample supporting surface for the envelopes is provided yet a wide range of lateral adjustment for the vertical guide plates 17 is also permitted. Further, it will be seen that with the plates 17 engaging over the vertical bracket portions 14 a wedging action is obtained upon the locking of the plates 17 to also lock the brackets in any desired position of tilt. Since no alterations or modifications are required to be carried out on the multigraph machine 1, it will be seen that my envelope magazine can be conveniently used with existing machines and quickly and easily inserted in place and interchanged when required. It will therefore be understood that the use of my envelope magazine will greatly increase the capacity of a multigraph or printing machine and materially decrease the time and cost in the printing of envelopes.

While I have shown my magazine as used in conjunction with one form of multigraph machine, it will be appreciated that its use may be readily adapted to other forms of printing machines without departing from the scope of my invention.

While I have particularly described my magazine for use in printing envelopes, it will be readily appreciated that it may be advantageously used in printing other material of a non-uniform thickness throughout where the material would not form without my magazine a horizontal stack.

For example, my magazine has been found to be extremely useful and advantageous in the printing of greeting cards and the like carrying embossed designs or raised patterns, and in the printing of bags and other material of varying thickness.

It will be understood of course that any slight modifications required to accommodate other

types of material may be made without departing from the scope of my invention.

What I claim as my invention is:

1. A magazine for a multigraph machine or the like comprising a vertical backing plate, aligning means extending forwardly of said backing plate, and a plurality of vertically spaced platforms extending forwardly of said backing plate between said aligning means and inclined transversely of said backing plate to support in substantially level position a stack of material of non-uniform thickness held between said aligning means.

2. A magazine for a multigraph machine or the like, comprising a vertical backing plate, aligning means extending forwardly of said backing plate, and a plurality of vertically spaced platforms extending forwardly of said backing plate between said aligning means and tiltable transversely of said backing plate to adjusted positions to support in substantially level position a stack of material of non-uniform thickness held between said aligning means.

3. A magazine for a printing machine comprising a vertical backing plate having a forwardly extending supporting base, a pair of spaced vertical right angled plates secured to said backing plate and extending forwardly thereof and adjustable laterally to receive and align different width stacks of material of non-uniform thickness therebetween, and a plurality of vertically spaced supporting brackets secured between said right angled plates to said backing plate and tiltable transversely thereof to adjusted positions to support the stacks of material of non-uniform thickness in substantially level position.

4. An envelope magazine for a multigraph machine or the like comprising a vertical backing plate having a forwardly extending base, a plurality of vertically spaced brackets pivoted centrally to said backing plate and extending forwardly therefrom and adjustably tiltable transversely of said backing plate about said pivots, and a pair of vertical spaced right angled plates secured to said backing plate and adjustable transversely thereof.

5. An envelope magazine as claimed in claim 4 in which said base is provided with an extensible portion, and a spring arm is arranged at the outer end of said extensible portion.

6. An envelope magazine as claimed in claim 4 in which a plate is slidably supported on said base and is adjustable towards and from said backing plate and a transverse cantilever spring arm is arranged at the end of said slidable plate, said spring arm being adjustable transversely of said slidable plate.

7. An envelope magazine for multigraph machines or the like comprising a vertical backing plate having a forwardly extending supporting base, a plurality of vertically spaced brackets extending forwardly of said backing plate, each of said brackets having a longitudinal vertical portion pivoted centrally to said backing plate and an outwardly extending portion at right angles to said vertical portion forming a shelf projecting centrally from the vertical portion, and a pair of spaced vertical envelope aligning plates each formed of a leg parallel said backing plate and a leg perpendicular said backing plate, means securing said legs parallel to said backing plate to said backing plate for lateral adjustment of said envelope aligning plates and in position to clamp said vertical bracket portions, said legs perpendicular said backing plate forming sides for said shelves.

8. A magazine as claimed in claim 7 in which said brackets are uniformly spaced.

9. A magazine as claimed in claim 7 in which bearer bars are secured to the back of the vertical backing plate.

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