United States Patent

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[15] **3,705,664**

[45] **Dec. 12, 1972**

[54] **DISPENSING DEVICE FOR POCKETED ENVELOPES**

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[22] Filed: **April 16, 1971**

[21] Appl. No.: **134,787**

[52] **U.S. Cl.** **221/47**

[51] **Int. Cl.** **B43m 3/00**

[58] **Field of Search** .....221/55, 33, 47, 63; 312/60, 312/61, 50; 248/95; 53/188, 384; 206/57 A, 63

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[57] **ABSTRACT**

An envelope dispenser for uniformly retaining and flexing pocketed envelopes in a manner which automatically maintains the envelope pockets sufficiently open for efficient insertion of material therein. An adjustable support, slidably mounted beneath the envelopes in the dispenser, applies appropriate flexing force thereto and, in addition, makes it possible for the dispenser to satisfactorily accommodate different types of envelopes therein.

6 Claims, 9 Drawing Figures

FIG.1

FIG.2

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FIG.3

FIG.4

FIG.5

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FIG.6

FIG.7

FIG.8

FIG.9

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DISPENSING DEVICE FOR POCKETED ENVELOPES

CROSS-REFERENCE TO RELATED APPLICATIONS

Reference is hereby made to commonly assigned, copending U.S. Pat. application Ser. No. 134,791, entitled Apparatus For Correlating Rejected Photographic Prints With Corresponding Photographic Negatives, filed in the name of Gerald C. Smith on Apr. 16, 1971; U.S. Pat. application, Ser. No. 134,786, entitled Apparatus For Facilitating The Packaging And Pricing Of Photographic Prints, filed in the names of Thomas W. Bracken, Thomas C. Laughon and Gerald C. Smith on Apr. 16, 1971; U.S. Pat. application, Ser. No. 134,789, entitled Control Circuit For Automating The Operation Of A Film Cutter Or Like Apparatus, filed in the names of Gerald C. Smith and Raymond J. Williams on Apr. 16, 1971; and U.S. Pat. application, Ser. No. 134,788, entitled Bimodal Film Cutter Adapted To Handle Different Film Widths, filed in the name of Thomas W. Bracken on Apr. 16, 1971.

BACKGROUND OF THE INVENTION

1. Field of Invention

This invention relates to a dispensing device and, more particularly, to an envelope dispenser which accepts and flexes pocketed envelopes for efficient insertion of material therein.

2. Description of the Prior Art

Dispensers of various types are known in the prior art. These prior art dispensers were designed to deliver such items as paper bags, folded napkins, cleansing tissues and moistened sheets. Certain applications, however, required the use of pocketed envelopes which could not be conveniently, economically or efficiently dispensed by any of the known devices.

In those applications where a pocketed envelope is employed, it is highly desirable from an efficiency and cost standpoint to provide a device which would permit an operator to load material into such envelopes without having to expend effort in opening the pockets. One such application is encountered in the field of photofinishing where processed prints and their corresponding negatives are delivered to an operator for insertion in a pocketed customer envelope.

In the past, such envelopes were stacked adjacent the photofinishing apparatus being used and, as the finished prints and negatives were delivered, the operator would insert them into appropriate pockets of the envelope along with descriptive literature, called "stuffers" in the trade. It was found that this highly repetitive insertion operation, which required the operator to manually open each pocket, was time consuming, fatiguing, inefficient and costly, especially as many phases of the photofinishing process were automated. In fact, it soon became evident that the insertion operation was a bottleneck which prevented the processor from reaping the benefits of automating his processing facilities. Unfortunately, none of the prior art devices provided or disclosed an envelope dispensing device which could be readily adapted by the photofinishing field and also solve the problems noted above.

SUMMARY OF THE INVENTION

It is, therefore, a primary object of the present invention to provide an inexpensive and efficient dispenser for pocketed envelopes.

It is a further object of the present invention to provide such a dispenser in which the envelopes are retained in a flexed position wherein the pockets are at least partially open to facilitate insertion of material therein.

It is still another object of the present invention to provide an inexpensive and efficient dispenser for multi-pocketed envelopes which retains the envelopes in a flexed and fully accessible position with all pockets of the envelope maintained at least partially open for efficient insertion of material therein.

Accordingly, there is provided a frame member for retaining the envelopes, two opposing walls of which have inwardly extending flanges for retaining the top and bottom portions of the envelopes as they are fulcrumed over the top surface of a support member adjustably mounted in the frame member beneath the envelopes. The predetermined height of the support member forces the retained envelopes to assume an outwardly bowed or convex shape which, at least, partially opens the envelope pockets to facilitate insertion of material therein. The adjustably mounted support member permits location of the fulcrum point in an optimum plane at a location therein which yields maximum pocket opening. In addition, the support member can be appropriately biased to provide uniform flexing of the envelopes regardless of the number of type of envelopes inserted in the frame member.

Other objects and advantages of this invention will become apparent from the following description thereof taken in connection with the accompanying drawings wherein there is set forth by way of illustrative example certain embodiments of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective illustration of a photofinishing console which includes an envelope dispenser according to the present invention.

FIG. **2** illustrates a multi-pocketed envelope of a type employable in the envelope dispenser illustrated in FIG. **1**.

FIG. **3** is a perspective view of the envelope dispenser shown in FIG. **1** which has been loaded with a number of envelopes of the type illustrated in FIG. **2**, into the pockets of which photographic material is being inserted.

FIG. **4** is a cross-sectional view of the loaded envelope dispenser illustrated in FIG. **1** taken along line A—A thereof.

FIG. **5** illustrates the manner in which the envelope shown in FIG. **2** is folded.

FIG. **6** shows an exploded perspective view of the mounting arrangement utilized for the support member illustrated in FIG. **4**.

FIG. **7** illustrates in perspective an alternative embodiment of the support member shown in FIG. **6**.

FIG. **8** illustrates in perspective another alternative embodiment of the support member shown in FIG. **6**.

FIG. **9** is a partial cross-sectional view of an alternative embodiment of the flange portion of a sidewall shown in FIG. **4**.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings wherein like reference numerals have been used in the several views for like elements, FIG. 1 illustrates a photofinishing console **10** which includes an envelope dispenser **11** according to the present invention. A detailed description of the photofinishing console **10** is not necessary for purposes of this description. Rather, it is sufficient to know that individual prints **7** and negative strips **9** are cyclically delivered at locations **12** and **13** respectively. For a more detailed description of photofinishing console **10**, reference should be had to the previously identified U.S. Pat. applications Ser. Nos. 134,791, 134,786, 134,789 and 134,788.

Upon delivery of the prints **7** and negative strips **9** to locations **12** and **13**, the prints **7** are quickly scanned by the operator for defects, if any, and, if acceptable, are inserted along with their corresponding negative strips **9** into the topmost envelope **14** in dispenser **11**. Withdrawal of the negative strips **9** from location **13** causes initiation of the next cycle of console **10** operation, which is completed by the time the operator has finished packing the immediately preceding delivery of prints **7** and negative strips **9**. In addition, if desired, the operator can insert in envelope **14**, together with a processed customer order, descriptive material or "-stuffers" conveniently located in compartments **15** of storage means **16**. It should be noted that extra envelopes **14** and other materials, such as pricing labels, negative covers or the like, can be stored in storage means **16**.

In the preferred embodiment described herein, the particular envelope **14** employed contains two pockets, a print pocket **17** and a negative pocket **18**. It will be appreciated by those having skill in this art, that envelope **14** could contain only one pocket or more than two, the number being dependent upon the particular task involved. The details of envelope **14** are illustrated in FIG. 2. As shown, pockets **17** and **18** are of differing height with the mouth **18***a* of negative pocket **18** lying just below the mouth **17***a* of print pocket **17**. The envelope flap **19** is normally extended in the same plane as the envelope back **20** and remains so extended, though slightly bowed, upon insertion into the dispenser **11**. Upon insertion of the customer order into pockets **17** and **18**, the filled envelope **14** is removed and flap **19** is bent along fold line **21** and assumes the position indicated by the dashed lines **22** in FIG. 5.

As shown in FIG. 3, a number of envelopes **14** are inserted into dispenser **11** with their pockets **17** and **18** facing up. The top portion **23** and bottom portion **24** of the envelopes **14** are tucked beneath edging **25**, which asthetically masks the opening **26** of table **27** into which dispenser **11** fits.

The envelope dispenser **11**, as best shown in FIG. 4, comprises a unitary frame member **28** having an inclined or sloped floor **29** which terminates at each end thereof in upright wall portions **30** and **31**, respectively. A slot **37** is cut in floor **29** for a purpose to be hereinafter described. The distance between wall portions **30** and **31** is obviously slightly greater than the width of the properly bowed envelopes **14** and slightly smaller than the opening **26** in table **27**. Each of the walls **30** and **31**, have a flange, **32** and **33** respectively, formed at the top thereof which fits beneath edging **25**, as shown in FIG. 4. It has been empirically determined for the particular types of envelope used in the photofinishing field, that the spacing between walls **30** and **31**, or the rearmost portion of flanges **32** and **33**, should be equal to from 90 to 96 percent of the envelope height. For example, in the embodiment of the present invention illustrated in FIG. 4, the spacing between walls **30** and **31** has been chosen to be about 93 percent of the envelope height. In the particular frame member **28** described above and illustrated in FIG. 4, unitary construction was chosen for both economic and structural reasons. However, it will be appreciated by those skilled in the art that the respective flange, wall and bottom portions of frame member **28** can be formed of separate, independent pieces which are ultimately joined by one of several known joining techniques. It will also be appreciated that in fabricating frame member **28**, the wall portions **30** and **31** thereof can be bent slightly outwardly so that upon insertion into opening **26**, they will be forced towards each other into a substantially vertical position which simultaneously biases them against the sides of table opening **26**, thereby securing frame member **28** in opening **26**. Such biasing action assumes the choice of a suitable and appropriate material for frame member **28** from among the many known in the art. Alternatively, frame member **28** can be secured by spot welding flanges **32** and **33** at appropriate locations to edging **25**. Still another alternative joining technique achieves the securing of frame member **28** within table **27** by employment of conventional nut assemblies (not shown) through holes (not shown) cut for that purpose in flanges **32** and **33** and edging **25**.

Support member **34**, as shown in FIGS. 4 and 6, is slidably mounted to the floor **29** of frame member **28** by passing two carriage bolts **38** through openings **35**, in its bottom portion **36** and through slots **37**. The position of support member **34** is then fixed by tightening nuts **39**. Bottom portion **36** of support member **34** is bent to angularly coincide with and is therefore parallel to floor **29**. This insures, regardless of its position with respect to slot **37**, that support member **34** is substantially vertical. Alternatively, the openings **35** in bottom portion **29** could be elongated to form a slot, while slots **37** could be reduced to a rounded opening merely sufficient to accept bolts **38**. Then, an adjustment in the position of support member **34** would be effected by sliding support member **34** along floor **29** rather than by sliding bolts **38** along slots **37**. The actual arrangement chosen is not critical, as long as the support member **34** can be readily moved with respect to floor **29** as the need therefor arises. An exploded, clarified view of the mounting arrangement of support member **34** to floor **29** is illustrated in FIG. 6.

As shown in FIG. 6, square shoulders **51** are provided on the underside of the heads **52** of bolts **38**. Since the width of the opposing shoulders **51** is chosen just slightly smaller than the width of slots **37**, full tightening of the carriage bolts **38** will positively secure support member **34** to floor **29**. In this manner, any tendency of support member **34** to move relative to floor **29** once positioned is minimized. The use of redundant attachment means, bolts **38** and nuts **39**, also serves to maintain the position of support member **34** relative to floor **29**. It will be appreciated, however, that the use of

the particular means described above for slidably attaching support member **34** to floor **29** is not necessary to practice the invention herein disclosed and its description is therefore merely exemplary. It will be further appreciated and understood that other suitable and conventional arrangements for slidably mounting support member **34** to floor **29** could be readily employed.

The top portion **40** of support member is, as shown in FIG. **4**, bent over to provide a surface over which the envelopes **14** can be fulcrumed. The uppermost surface **41** of top portion **40** is located, in the embodiment illustrated in FIG. **4**, in the same plane as the top of edging **25**. The location of surface **41** obviously determines the degree to which the envelopes **14** are flexed since their top **23** and bottom portions **24** are tucked under fixed flanges **32** and **33**, respectively, beneath edging **25**. It will be appreciated that the selected height of support member **34** and the location of surface **41** is, in great measure, a function of such factors as envelope stiffness, the maximum number of envelopes to be loaded, the horizontal location of flanges **32** and **33** and the amount of flexure needed to sufficiently open the envelope pockets **17** and **18**. In each instance, therefore, it is necessary that the surface **41** be located in an optimum plane which will result in enough envelope flexure to insure that the envelope pockets are opened by an amount sufficient to promote ready and efficient insertion of material therewithin. In the embodiment described herein, for the type and number of envelopes used, the optimum plane has been determined to be coextensive with the top of edging **25**. It should be noted, however, as illustrated in FIG. **9**, that the flange **33** (or flange **32**) itself can be appropriately shaped so that no edging **25** is required. In such an instance, the location of the optimum plane may not change, but the element to which it is referenced will.

Should a change in the type of envelope used be necessary, such as, for example, a change in the position of pockets **17** and **18**, then not only will the location of the optimum plane change, but the fulcrum point, that point in the optimum plane where contact is made between the envelopes **14** and surface **41**, will also change. In order to achieve maximum pocket opening under such a condition, it will be necessary to slide support member **34** along floor **29** in whatever direction is appropriate. Arrows **42** indicate, in FIG. **4**, the directions in which support member **34** can be moved to achieve the desired result.

As shown in FIG. **7**, support member **34** can be modified to achieve vertical displacement of surface **41** without the necessity of horizontal movement, that is, without the need to slide support member **34** along floor **29**. The incorporation of this modification would eliminate the need to have floor **29** slope between walls **30** and **31**. Thus, floor **29** would be generally perpendicular to side walls **30** and **31** and bottom portion **36** of support member **34** would extend generally perpendicular therefrom. This change is achieved by forming support member **34** from two pieces, an upper segment **42** and a lower segment **43**. The segments **42** and **43** are slidably mounted to each other by a carriage bolt **44** and nut **45** through opening **46** in upper segment **42** and an opening (not shown) in lower segment **43** cut respectively therein in a similar manner to the mounting arrangement of support member **34** to floor **29** illustrated in FIG. **6**. Either one or both of these openings in segments **42** and **43** can be elongated to achieve a desired range of vertical movement for top surface **41**. The stability of support member **34**, when fabricated as illustrated in FIG. **7**, is greatly improved by providing lugs **53** on top segment **42** which are bent back around the sides of bottom segment **43** thereby minimizing any tendency of rotational movement between top and bottom portions **42** and **43**. In addition, as previously described with respect to the mounting of support member **34** to floor **29**, a second bolt and nut assembly and appropriate openings could be provided to further positively stabilize the slidably joined top and bottom portions **42** and **43**.

The versatility of the envelope dispenser described herein can be enhanced even further, as shown in FIG. **8**, by providing biasing means between segments **42** and **43**. In the illustrated alternative embodiment of FIG. **8**, such biasing means is conveniently selected to be the springs **48** which are mounted in compression between flanges **49** and **50** extending respectively from the upper and lower segments **42** and **43**. The biasing action of springs **48** tend to apply optimum flexing to envelopes **14**, especially in those instances where a great number of or stiffer envelopes are employed.

The springs **48** are held in place by pins **54** which are fixedly mounted between flanges **49** and **50**. Top segment **42** is slidably joined to bottom segment **43** by rivets **55** or like elements, the shafts of which extend through and ride in slots **56** cut in top portion **42**. The ends (not shown) of the rivets **55** are peened over or otherwise arranged so that the top and bottom segments **41** and **42** are held in slidable engagement. With the FIG. **8** embodiment of support member **34** incorporated in the dispenser **11**, the pressure exerted by the compressed springs **48**, which are chosen with appropriate spring constants, tends to maintain the pockets of the topmost envelope **14** sufficiently flexed and open so that material can be readily and efficiently inserted therein.

This invention has been described in detail with reference to preferred embodiment; however, it will be understood that variations and modifications can be effected within the spirit and scope of the invention as described hereinabove and as defined in the appended claims.

I claim:

1. A dispensing device for providing efficient access to the pockets of the topmost one of a number of pocketed envelopes to be retained therein, said device comprising:

a. a frame member comprising two parallel upstanding walls having parallel flanges at the top thereof, said flanges extending inwardly towards each other and spaced apart a distance less than the height of the envelopes, and a floor member extending between said upstanding walls at an angle thereto, said floor member having an opening therein; and

b. support means having a top surface for supporting thereon envelopes placed in said dispensing device, said support means including an inverted J-shaped support member having a bottom portion extending therefrom at an angle approximating the slope of said floor member, said bottom portion

having an opening therein, and mounting means extending through said openings in said floor member and said bottom portion for slidably mounting said J-shaped support member to said floor member so that the vertical position of said top surface can be varied to provide optimum flexure of the envelopes;

so that when the envelopes are placed in said dispensing device with their pocket sides up, they are fulcrumed over said top surface of said support means with their top and bottom portions tucked beneath and retained by said flanges causing the envelope pockets to open at least partially.

2. The device according to claim **1** wherein said flanges are spaced apart by a distance equal to 93±3 percent of the envelope height.

3. The device according to claim **2** wherein said support member further includes:

a. an upper segment having a flange extending therefrom; and

b. a lower segment slidably mounted to said upper segment and having a flange extending therefrom;

said device further comprising biasing means mounted between said segment flanges for urging said segments apart.

4. The device according to claim **2** wherein said inverted J-shaped support member comprises:

a. an inverted J-shaped upper support segment having an opening therein;

b. an L-shaped lower support segment having an opening in its vertical and horizontal portions; and

c. mounting means for slidably mounting said upper support segment to said vertical portion of said lower support segment.

5. The device according to claim **4** wherein said support means further comprises stabilizing means cooperating with said upper and lower support segments for minimizing rotational movement of said segments with respect to each other.

6. The device according to claim **3** wherein said support means further comprises stabilizing means cooperating with said upper and lower support segments for minimizing rotational movement of said segments with respect to each other.

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