May 16, 1944. G. W. VON HOFE 2,349,063

MEANS FOR APPLYING CIRCULARS AND THEIR EQUIVALENT TO ARTICLES

Filed Aug. 14, 1941 2 Sheets-Sheet 1

Fig. 1.

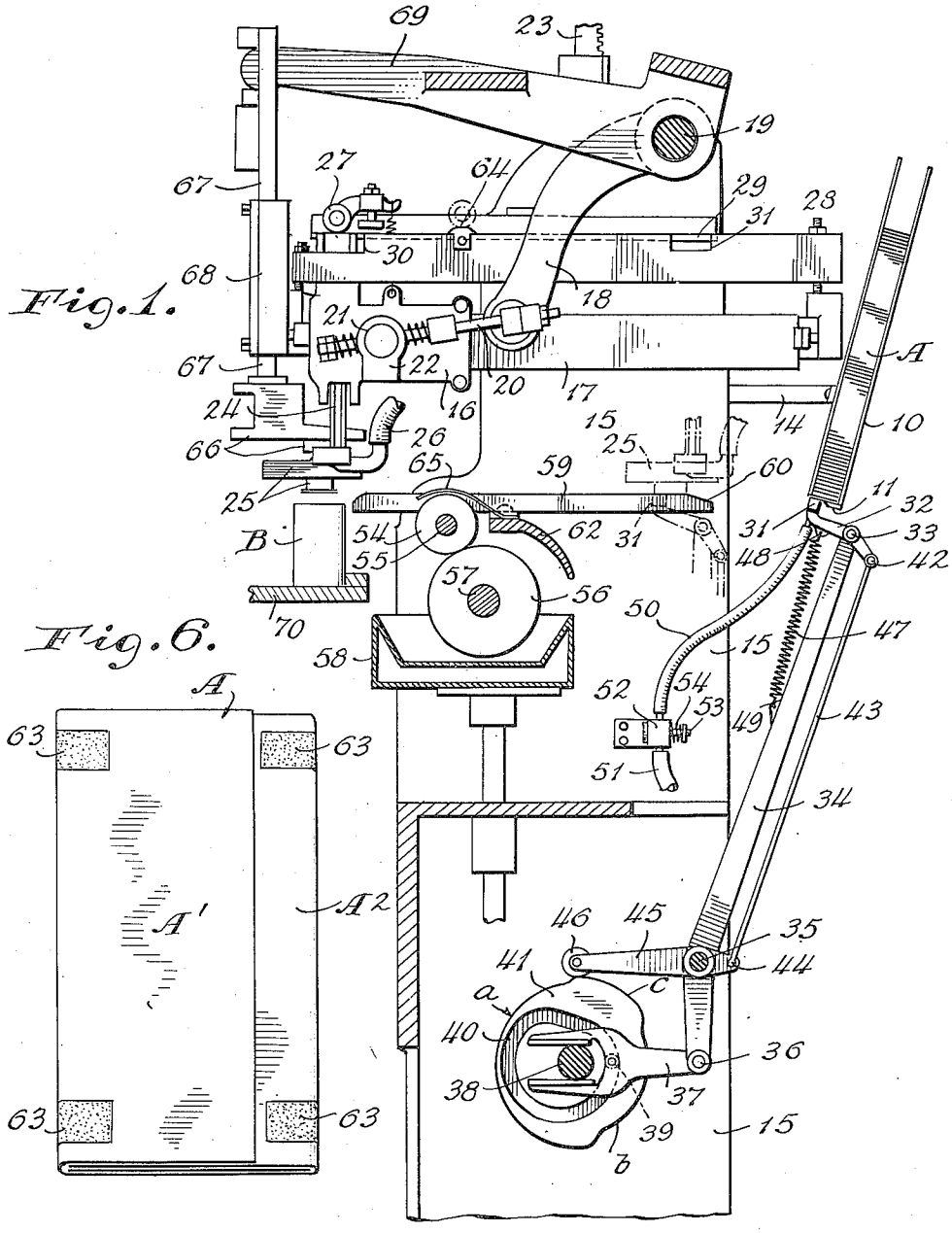

Fig. 6.

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MEANS FOR APPLYING CIRCULARS AND THEIR EQUIVALENT TO ARTICLES

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Fig. 2.

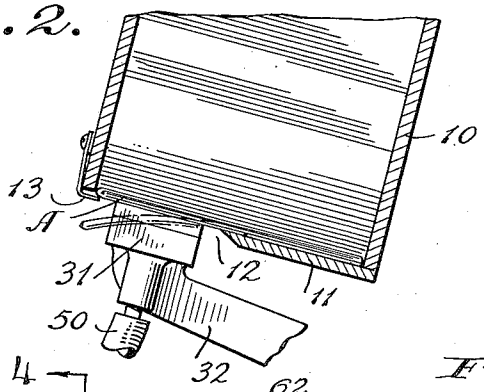


Fig. 3.

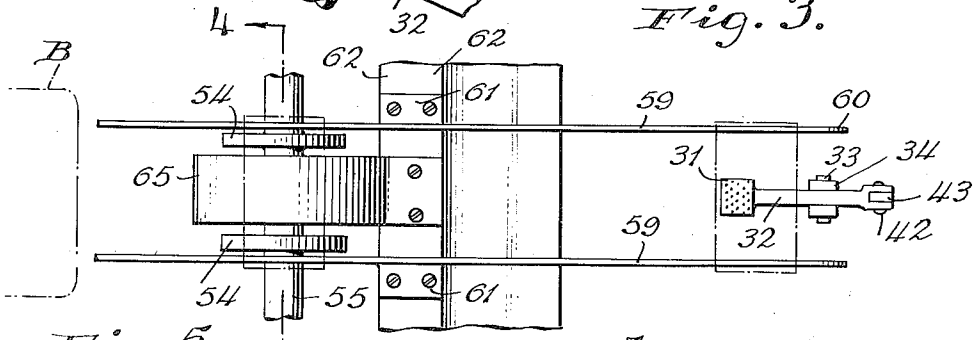


Fig. 5.

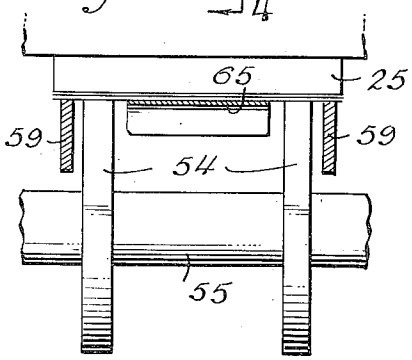
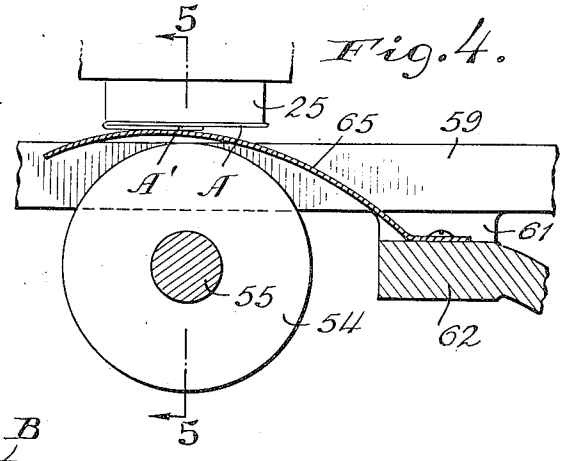


Fig. 4.



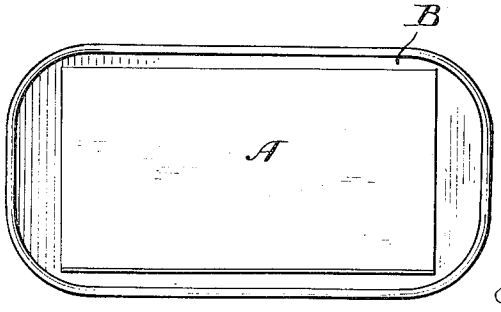


Fig. 7.

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UNITED STATES PATENT OFFICE

2,349,063

MEANS FOR APPLYING CIRCULARS AND THEIR EQUIVALENT TO ARTICLES

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Application August 14, 1941, Serial No. 406,811

14 Claims. (Cl. 216—55)

The invention relates to the art of applying folded circulars or their equivalent to articles exemplified by conventional commercial packages of food stuffs and other materials.

It is the practice to provide conventional packages of merchandise such as food stuffs, with accompanying circulars or their equivalent containing information for the purchaser regarding the use of the contents of said packages, or suggestions, in the nature of recipes, for serving said contents in different ways.

Such circulars or the like, usually in folded condition, have been combined with the packages of merchandise in a variety of ways, generally so as to be removable at will, and in some instances have been adhesively attached to said packages, for concurrent sale therewith. Up to the present time the combination of the circulars or the like, with the packages has been effected manually by human operators and accordingly constitutes an operation which is time consuming and expensive. Such manual combination with the packages is at times faulty and inefficient and often, particularly in connection with the adhesive attachment of said circulars or the like, with the packages, makes it difficult to detach the circular or the like without material injury thereto whereby said circulars. or their equivalent, are rendered defective or ineffective for their intended purposes.

The invention has for its object to overcome the aforesaid objections and disadvantages and to provide a machine of novel and simple construction whereby the circulars or their equivalent may be adhesively attached to the related packages in an efficient and uniform manner and so as to be capable of being readily detached from the packages at will.

Other objects will appear from the description hereinafter and the features of novelty will be pointed out in the claims.

In the accompanying drawings which illustrate an example of the invention without defining its limits,

Fig. 1 is a sectional elevation of the novel machine;

Fig. 2 is a fragmentary section, on an enlarged scale, of a hopper and associated mechanism included in the illustrated machine;

Fig. 3 is a fragmentary plan view;

Fig. 4 is a fragmentary section on the line 4—4 of Fig. 3;

Fig. 5 is a similar view on the line 5—5 of Fig. 4;

Fig. 6 is a face view, on an enlarged scale, of a sample folded circular handled by the machine, and

Fig. 7 is a plan view of a can of food stuff exemplifying the commercial packages of merchandise with the folded circular attached thereto.

For purposes of description and illustration, and without intent to restrict the fields of usefulness of the novel machine, I have shown the latter in a form designed to apply folded circulars to an end face of cans or other containers of materials. It is accordingly to be understood that the illustrated can of material is intended merely to exemplify the commercial packages of merchandise to which the novel machine relates, and that the illustrated folded circular merely exemplifies the devices which are attached to said packages, and that the specification and claims are to be construed accordingly.

The circulars A to be attached to the packages of merchandise as exemplified by the can B of Fig. 7, are folded upon themselves in a number of folds or plies preferably in such a manner that the final external ply or fold A′ will be somewhat less in transverse width than the other plies or folds of circular to thereby expose a portion A^2 of the next adjacent ply or fold as illustrated in Fig. 6. With this arrangement the final ply or fold A′ constitutes a loose flap as will appear more fully hereinafter. If the folded circular A is replaced by an equivalent device, the latter preferably will include a corresponding loose flap.

In practice a supply of the folded circulars A is suitably provided in the machine in a manner to permit individual folded circulars A to be successively removed from the supply and applied to the articles exemplified by the can B of Fig. 7.

In the illustrated example the supply of circulars A is arranged in the form of a stack located in a suitable hopper 10 which is provided at its lower end with a bottom member 11 on which the supply stack of circular A is arranged to rest as shown in Figs. 1 and 2. The bottom member 11 is dimensioned to provide an exit opening 12 at the lower end of the hopper 10 through which the circulars A are individually withdrawn as will appear more fully hereinafter. In co-operating opposed relation with the bottom member 11, the hopper 10 is provided with yielding supporting means, as for instance, resilient members 13, suitably fixed in place on said hopper 10. The members 13 constitute an

auxiliary yielding supporting means which engage an edge of the circulars A to prevent the latter from sagging out of the exit opening 12, and are arranged to yield to permit lower terminal circulars A to be withdrawn from the hopper 10 during an operative period of the machine, as will be more clearly set forth hereinafter.

The hopper 10 is supported in the machine in any convenient manner with its lower delivery or exit and located in proper co-operating relation to the associated elements of the machine. As shown in Fig. 1, the hopper 10 is carried by a suitable bracket 14 mounted on the frame 15 of the machine and preferably extends upwardly at an outward inclination relatively to said frame. With such arrangement the upper end of the hopper 10 is freely accessible for the insertion of circulars A into the same to replenish the supply stack of circulars A in said hopper 10 as becomes necessary. It will be evident that the supply stack of circulars A progressively descends in the hopper 10 by gravity as successive terminal circulars A are withdrawn through the exit opening 12. If desired or deemed necessary suitable provision may be made for assisting the force of gravity to insure proper and progressive downward movement of the stack of circulars A in said hopper 10.

The machine further includes transfer means whereby the folded circulars A are removed in individual succession from the bottom of the supply stack in the hopper 10 and transferred or transported to the applying station of the machine for application to the one end of the can B, or equivalent package. The aforesaid transfer means may be of any suitable construction and arrangement and in the illustrated example is of the suction operated type. As shown, the transfer means consists of a carriage 16 slidably mounted upon a horizontal guide rail 17 supported on the frame 15 in any convenient manner. The carriage 16 is slidably reciprocated on the rail 17, for instance, by means of an arm 18 fixed upon a shaft 19 journalled in the frame 15, said arm 18 having its free end pivotally connected with a coupling rod 20 which in turn is yieldingly and pivotally connected at 21 with a lug 22 forming part of or fixed upon the carriage 16, as shown in Fig. 1. The shaft 19 is rocked in its bearings to effect the reciprocation of the carriage 16 on the rail 17 by any suitable mechanism as exemplified for instance by the rack 23 and its associated elements; because of the fact that the mechanism for rocking the shaft 19 per se forms no part of the instant invention, it has not been deemed necessary to illustrate this mechanism in detail.

The carriage 16 serves as a support for a member 24 which is vertically slidable on said carriage and at its lower end carries a suction head 25 of any conventional type suitable for the intended purpose. The suction head is connected with a suitable source of suction, for instance, by means of a flexible tube 26 and provision is made in any conventional manner for controlling the suction in said suction head 25 in proper timing with the associated operations of the machine. At its upper end the member 24 carries rollers 27 located on a common axis and adapted respectively to travel along a fixed rail 28 suitably mounted in the frame 15 and a movable rail 29 capable of being operated, for instance, as shown and described in my Patent No. 2,227,816 of January 7, 1941, to raise and lower the member 24 and with it the suction head 25 on the carriage 16. To enable these latter operations to take place in proper sequence, the fixed rail 28 may be provided with a recess 30 in proper relation to the applying station and a second recess 31 located in predetermined relation to the supply stack of circulars A in the hopper 10.

The aforesaid transfer means further includes means whereby individual folded circulars A are removed from the lower end of the supply stack in the hopper 10 and delivered to the suction head 25 at the pick-up station of the machine. This last-mentioned means may comprise an auxiliary suction head 31 carried by a lever 32 pivotally mounted at 33 upon one member of a bell-crank lever 34 which itself is pivotally mounted at 35 upon the frame 15 of the machine. The other member of the bell-crank lever 34 is pivotally connected at 36 with a forked member 37 slidably straddling the operating shaft 38 which is suitably journalled in the frame 15. The forked member 37 carries a roller 39 which projects into the cam groove 40 of a cam 41 fixed upon said shaft 38 which may be operated by any suitable driving means.

The lever 32 is pivotally connected at 42 with one end of a link 43, the other end of which is pivotally connected at 44 with a rocking arm 45 movably mounted on the previously mentioned pivot 35. The arm 45 at its one free end carries a roller 46 in rolling engagement with the periphery of the aforesaid cam 41, which periphery consists of sections *a*, *b*, and *c*, as shown in Fig. 1. A spring 47 has its one end connected at 48 with the lever 32 and its other end attached at 49 to the bell-crank lever 34, said spring being effective on the lever 32 and through the link 43 on the arm 45 to maintain the roller 46 in rolling contact with the cam 41. The auxiliary suction head 31 is connected with a source of suction by means of preferably flexible tubes 50 and 51 each of which in turn is connected with a casing 52 of a controlling valve 53 which is normally maintained in its closed position by a spring 54 and is located in the path of the one member of the bell-crank lever 34, as shown in Fig. 1.

At a predetermined point in the path of travel of the suction head 25 from the pick-up station shown by dotted lines in Fig. 1 to the solid line position shown therein, the folded circulars A carried by the suction head 25 are provided with adhesive whereby said folded circulars A are removably attached to the packages of merchandise for which they are designed. In the illustrated example the adhesive applying means comprises relatively narrow adhesive applying rollers 54 located in predetermined spaced relation upon a shaft 55 rotatably mounted in the frame 15. The adhesive applying rolls 54 are located in tangential receiving relation to adhesive distributing means which may comprise two rolls corresponding to the rolls 54 or consist of a single distributing roll 56 of sufficient axial length to properly co-operate with the rolls 54. The distributing roll 56 is mounted upon a shaft 57 journalled in the frame 15 and dips into a supply of adhesive contained in an adhesive receptacle 58 mounted in the machine in any customary and convenient manner. The adhesive applying and distributing rolls 54 and 56 may be operatively driven in any conventional manner. As shown in Fig. 6, the circulars are folded to preferably include an external ply A' which is of less transverse width than the next adja-

cent ply, so that a portion of the latter is exposed and not covered by the external ply A'.

In order to secure the most efficient results the adhesive is applied to the external ply A' and the exposed portion A^2 of the next adjacent ply of the folded circulars so that when said circulars are adhesively attached to the cans B, or their equivalent, such circulars A will be fixed in place on said cans B, or their equivalent, in a manner to maintain the external ply A' which constitutes a loose flap, and the next adjacent ply A^2, in proper position to thereby prevent unintentional unfolding of said circulars A. To attain this result the folded circulars A are stacked in the hopper 10 with the external plys A' facing downwardly in said stack. After the folded circulars A have been transferred to the suction head 25 and are held in place on the active face thereof, the external ply or fold A' may have a tendency to sag downwardly as a depending flap. To prevent such flap from interfering with the intended and proper application of the adhesive to the folded circulars A carried by the suction head 25, suitable means is provided for maintaining said external plies A' against downward sagging. As shown, this means comprises supporting rails 59 located in spaced parallel relation in proximity to the adhesive applying rolls 54, as shown in Fig. 3. The supporting rails 59 extend from the pick-up station of the machine into proximity to the applying station thereof and have their upper edges preferably in registry with the peripheral surfaces of the adhesive applying rolls 54 at the upper portions thereof as shown in Fig. 1. The supporting rails 59 are preferably bevelled or sloped at one end as indicated at 60 for the purpose to be more fully set forth hereinafter, and are supported in the machine in their operative positions in any convenient manner. For instance, as illustrated in Fig. 3, the rails 59 may be mounted by means of brackets 61 upon a stationary cross bar 62 supported in any suitable manner on the frame 15.

A shown in Fig. 6, the adhesive is applied to the surface of the external ply A' and the portion A^2 of the next adjacent ply in the form of rectangular or other spots 63 so that the adhesive connection between said folded circulars A and the cans B, or equivalent packages, may be broken without material effort or material injury to the folded circulars when detachment of the latter from the packages is desired. To effect the desired application of adhesive, a projection or cam 64 is fixed on the rail 28 which is traversed by the roller 27 so that the latter in co-operation with said projection or cam 64 will raise the member 24 and with it the suction head 25 and any circular A carried thereby out of contact with the adhesive applying rolls 54, and after the projection or cam 64 has been passed, will lower the aforesaid parts to bring the circular carried or transported by the suction head 25 at the time back into adhesive receiving relation with the rollers 54. The projection or cam 64 preferably is adjustably mounted on the rail 28 and is located thereon in proper co-operative relation with the adhesive applying rolls 54 and is of such dimension lengthwise of the rail 28 to space the spots of adhesive 63 apart to the desired extent, for instance, as shown in Fig. 6. Obviously, as the suction head and its associated elements are lifted away from the adhesive applying rolls 54, the external ply A' of the folded circular A carried at the time will have a tendency to sag away from said suction head and thereby continue to contact with the adhesive applying rolls 54 and thus to interfere with the intended application of the adhesive. To prevent this, a leaf-spring 65 is mounted on the cross-bar 62 between the adhesive applying rolls 54 and is arranged so as to normally project upwardly beyond said rolls 54, as shown in Fig. 1. As the suction head 25 with the folded circular A thereon transports the latter in adhesive receiving relation to the applying rolls 54, the spring 65 will be depressed downwardly between said rolls 54 so as not to interfere with the application of adhesive in the intended manner. As the suction head with the folded circular A thereon is raised by the projection or cam 64 and the one roller 27, the inherent resiliency of the spring 65 will cause the latter to follow this upward adjustment of the suction head 25 and thereby will maintain the external ply A' of the circular A against downward sagging and thus will prevent any unintentional smearing thereof with adhesive.

The machine in addition to the parts so far described is generally provided with means for developing a pressure upon the folded circulars subsequent to their initial application to the cans B, or other containers, in order to cause the folded circulars to firmly and smoothly adhere to said cans or other containers. The said pressure developing means may be of any well-known type, for instance, as disclosed in my Patent No. 2,227,816.

In the illustrated machine the pressure means comprises a pressure member 66 carried by a plunger 67 vertically slidably in a guide-way 68 suitably supported in proper position upon the frame 15. The pressure member 66 may be vertically actuated in operative synchronism with the other parts of the machine by means of a lever 69 loosely mounted on the shaft 19 and connected with suitable and conventional operating means for instance as illustrated in my patent above referred to.

The machine also includes a suitable support 70 for supporting the cans B, or their equivalent, in circular receiving position at the applying station of the machine.

With the parts in the position illustrated in Fig. 1, it may be assumed for the purpose of description that a folded circular has just been adhesively applied to the can B and that the suction head 25 is in the process of being raised for the return movement back to the pick-up station. This raising of the suction head 25 is accomplished by means of the movable rail 29 and the associated roller 27 which is invisible in Fig. 1 but has a common axis with the roller 27, shown in this figure. The movable rail 29 may be actuated to effect the above-mentioned operations by means of mechanism such as is illustrated, for instance in my previously mentioned Patent No. 2,227,816. The described elevation of the suction head 25 is such that during the return movement of the parts to the pick-up station, said suction head 25 will be at a higher level than the adhesive applying rolls 54 and accordingly will not contact with said rolls and thereby will not be coated with adhesive during such return movement. When the carriage 16 has reached the terminus of its movement toward the right in Fig. 1, the movable rail 29 will be moved downwardly to correspondingly move the member 24 to thereby correspondingly adjust the suction head 25 downwardly to the pick-up

position illustrated by dotted lines in Fig. 1; the recess 31 in the fixed rail 28 which at this stage is at registry with the illustrated roller 27, will permit the aforesaid downward movements and enable the suction head 25 to reach said dotted line position.

In proper operative synchronism the section c of the cam 41 will act on the roller 46 to pivotally actuate the arm 45 and link 43 in a manner to swing the lever 32 on the pivot 33 and to thereby bring the auxiliary suction head 31 into contact with the terminal folded circular A at the lower end of the supply stack in the hopper 10. At the proper moment suction will be developed in the auxiliary suction head 31 and the roller 46 will drop to the section b of the cam 41 to thereby operate the arm 45, link 43, and lever 32 in a manner to swing the auxiliary suction head 31 downwardly and away from the delivery end of the hopper 10. The terminal folded circular A at one edge portion thereof will thereby be drawn downwardly to approximately the position shown by dotted lines in Fig. 2. In proper timing with these operations the cam groove 40 acting on the roller 39 will shift the forked member 37 to the right in Fig. 1 and as a result will swing the upper end of the bell-crank lever 34 toward the left in Fig. 1. Coincidentally with these operative steps the roller 46 will pass to the section a of the cam 41 and will actuate the associated elements in a manner to bring the auxiliary suction head 31 with the folded circular A carried thereby into transfer relation with the suction head 25 by the time the auxiliary suction head 31 reaches the dotted line position illustrated in Fig. 1. At this stage suction will be effective in the suction head 25 and the one member of the bell-crank lever 34 will have contacted with the valve 53 and operated the same in a manner to relieve the suction in the auxiliary suction head 31. In this way, the folded circular A will be transferred to or picked up by the suction head 25 and the auxiliary suction head 31 with its associated elements will be restored to their normal positions in proper operative timing. It will be understood that the folded circular as it is carried by the auxiliary suction head 31 to the dotted line position in Fig. 1, will ride up on the inclined portion 60 of the rails 59 so as to rest upon these rails at the time transfer to the suction head 25 takes place.

In proper timing with the aforesaid operative steps the shaft 19 is rocked in a direction to swing the arm 18 toward the left in Fig. 1 and to correspondingly shift the carriage 16 toward the left on the fixed rail 17. The suction head 25 is thereby correspondingly moved toward the left in Fig. 1 and the folded circular A carried thereby is transported lengthwise of the rails 59 to finally depress the spring 65 and to cause the folded circular A or rather the external ply or fold A' to contact the adhesive applying rolls 54 to thereby receive the spots of adhesive 63 shown at the left in Fig. 6. This application of adhesive is interrupted by reason of the fact that the roller 27 illustrated in Fig. 1 rides up on the projection or cam 64 and thereby raises the suction head 25 and the folded circular A carried thereby out of contact with the adhesive applying rollers 54. As long as the roller 27 remains on the projection or cam 64, the folded circular A will be maintained out of contact with said rollers 54, the spring 65 which follows the lifting of the suction head 25 serving to prevent the external ply or fold A' of the transported folded circular A from sagging into contact with said rolls 54. As the roller 27 passes from the projection or cam 64 back into engagement with the fixed rail 28, the suction head 25 will be lowered to bring the portion A^2 of the carried folded circular A into engagement with the adhesive applying rolls 54 which accordingly apply the spots of adhesive 63 shown at the right in Fig. 6 to said portions A^2 of said folded circular A.

As the movement of the carriage 16 to the left in Fig. 1 continues, the folded circular A carried by the suction head 25 will pass from the rails 59 and the suction head 25 finally will reach the position shown by solid lines in Fig. 1. In proper operative sequence the movable rail 29 will move downwardly to correspondingly shift the suction head 25 and thereby bring the folded circular A into contact with the upper end of the can B or its equivalent which happens to be on the support 70 at the time. The adhesive spots 63 on said circular A thereby engage the surface of said can B or its equivalent and cause the folded circular A to adhere to said can surface after which suction in the suction head 25 is relieved and the movable rail 29 is operated to elevate the suction head 25 and to shift it back toward the right in Fig. 1 as hereinbefore set forth. The folded circular thereby remains in adhesive connection with the can B or its equivalent and the initial application thereof has been completed. The lever 69 is then swung downwardly to correspondingly move the plunger 67 downwardly in the guide 68 and to thereby cause the pressure member 66 to develop a pressure on the initially applied circular to firmly and uniformly press said circular A into engagement with the can B or its equivalent, whereby the adhesive application to and connection with said can B, or its equivalent, is completed. The pressure member 66 and its associated elements are then restored to their normal raised positions after which the described cycle of operations is repeated.

When the adhesive application of the folded circular A to the can B, or its equivalent, has been completed, the external ply or fold A' and the portion A^2 of the next adjacent fold or ply thereof will be adhesively held in place by the several spots of adhesive 63 so that said folded circular will be firmly and efficiently held in place on the can B, or its equivalent, in a manner to avoid any looseness of any parts of said circular A. At the same time the adhesive attachment of the circular A to the cam B is such that said attached circular A may be easily removed at will by simply exerting a pulling force on said circular A, for instance at an intermediate point, sufficient to break the adhesive connections 63. In other words, while the spots of adhesive 63 are sufficient to securely hold the folded circular A in place on the can B, or its equivalent, the restricted points or areas of attachment represented by said spots of adhesive 63 are such that the adhesive connection between the can B, or its equivalent, and the folded circular A may be easily broken at will without material injury to or tearing of the folded circular A.

The machine is simple in construction and automatic in operation and serves to efficiently attach the folded circulars A, or their equivalent, to the cans B or equivalent packages in an automatic and uniform manner without requiring any particularly skilled supervision on the part of the attendant or operator.

As previously stated herein, the folded circulars A are intended to exemplify equivalent devices

and the cans B are intended to exemplify equivalent types of commercial packages.

Although the present invention has been described in conjunction with a preferred embodiment, it is to be understood that modifications and variations may be resorted to without departing from the spirit and scope of the invention, as those skilled in the art will readily understand. Such variations and modifications are considered to be within the purview and scope of the claims.

I claim:

1. In an applying machine, the combination of a container for a supply of folded circulars including external plies normally contituting loose flaps, means for removing circulars from said supply and for transferring the removed circulars into applying relation to articles for application thereto with said external plies facing said articles, means for applying adhesive to said circulars in a manner to include said external plies prior to the application of said circulars to said articles, and means effective approximately to the point of application for supporting the circulars from below to prevent sagging of said external plies during the transfer of said circulars to said point of application.

2. In a machine of the kind described, the combination of a support for articles of merchandise, a hopper for a supply of folded circulars including external plies normally constituting loose flaps, means effective on said external plies for removing folded circulars from said supply thereof and for transferring the same into applying relation to said articles for application thereto with said external plies facing said articles, means for applying adhesive to said circulars in a manner to include said external plies prior to their application to said articles, and means effective approximately to the point of application for supporting the circulars from below to prevent sagging of said external plies during the transfer of said circulars to said point of application.

3. In a machine of the kind described, the combination of a support for articles of merchandise, a hopper for a supply of circulars folded to include external plies arranged to expose a portion of the next adjacent plies, means for removing folded circulars from said supply thereof and for transferring the same into applying relation to said articles for application thereto, adhesive applying means for applying adhesive to said circulars prior to their application to said articles, means effective approximately to the point of application for supporting the circulars from below to prevent sagging of said external plies during the transfer of said circulars to said point of application, and means for interrupting said application of adhesive in a manner to apply adhesive only to restricted portions of the external plies and next adjacent plies of said circulars.

4. In a machine of the kind described, the combination of a support for articles of merchandise, a hopper for a supply of circulars folded to include external plies arranged to expose a portion of the next adjacent plies, means for removing folded circulars from said supply thereof and for transferring the same into applying relation to said articles for application thereto, adhesive applying means for applying adhesive to said circulars prior to their application to said articles, means for supporting the circulars from below to prevent sagging of said external plies during the transfer of said folders to the point of application, and means for interrupting said application of adhesive and for resuming the same after a predetermined time interval to apply said adhesive only to restricted portions of the external plies and next adjacent plies of said circulars at spaced points.

5. In a machine of the kind described, the combination of a support for articles of merchandise, a hopper having a delivery exit and containing a supply of circulars folded to include external plies normally constituting loose flaps, means for removing circulars from said supply through said delivery exit and for transferring the removed circulars to a pick-up point in said machine, transporting means for receiving said circulars from said removing means at said pick-up point and for transferring said circulars into applying relation to said articles for application thereto, means for applying adhesive to the external plies and adjacent portions of said circulars prior to their application to said articles, and means independent of said transporting means effective approximately to the point of application for supporting the external plies of said transported circulars against sagging during the transfer thereof to said point of application.

6. In a machine for applying circulars folded to include external plies normally constituting loose flaps, the combination of a support for articles of merchandise, transporting means for transferring said circulars into applying relation to said articles for application thereto with said external plies facing said articles, means for applying adhesive to said circulars in a manner to include said external plies prior to the application of said circulars to said articles, and means independent of said transporting means for supporting the external plies of said transported circulars against sagging during the transfer thereof to the point of application.

7. In a machine of the kind described, the combination of a support for articles of merchandise, a hopper having an exit opening at its one end and containing a supply of circulars folded to include external plies normally constituting loose flaps, means effective on said external plies for withdrawing said folded circulars through said exit opening from said hopper, means for receiving said circulars from said withdrawing means and for transporting said circulars into applying relation to said articles for application thereto, and means independent of said transporting means effective approximately to the point of application for supporting the external plies of said transported labels against sagging during the transfer thereof to said point of application.

8. In a machine for applying circulars folded to include external plies normally constituting loose flaps and arranged to expose portions of the next adjacent plies, the combination of a support for articles of merchandise, transporting means for transferring said circulars into applying relation to said articles with the external plies and exposed portions of the next adjacent plies facing the same for application to said articles, means independent of said transporting means effective approximately to the point of application for supporting the external

plies of said transported circulars against sagging during the transfer thereof to said point of application, and means whereby spots of adhesive are applied at spaced intervals to said external plies and next adjacent plies during the transferring thereof to said point of application.

9. A machine for applying circulars folded to include external plies normally constituting loose flaps comprising a support for articles, transporting means for transferring said folded circulars into applying relation to said articles for application thereto, an upright hopper having an exit opening at its lower end and containing a supply stack of said folded circulars, an auxiliary transfer device, means for operating said auxiliary device to withdraw terminal folded circulars through said exit opening from said supply stack and for transferring said withdrawn circulars into delivery relation to said transporting means for delivery thereto, and means for applying adhesive to the transported circulars in a manner to include said external plies during transport of said folder circulars to the applying point.

10. In a machine for applying circulars folded to include external plies normally constituting loose flaps and arranged to expose portions of the next adjacent plies comprising a support for articles, transporting means for transferring said folded circulars into applying relation to said articles with said external plies and the exposed portions of said adjacent plies facing the same for application to said articles, an upright hopper having an exit opening at its lower end and containing a supply stack of said folded circulars, an auxiliary transfer device effective on said external plies, means for operating said auxiliary device to withdraw terminal folded circulars through said exit opening from said supply stack, means for actuating said auxiliary transfer devic to transfer the withdrawn folded circulars into delivery relation to said transporting means for delivery thereto, means for supporting the external plies of said transported circulars against sagging during transfer thereof to the point of application, and means for applying adhesive to the external plies and exposed portions of said adjacent plies of said circulars prior to their application to said articles.

11. A machine of the kind described comprising a support for articles, transporting means for transferring circulars into applying relation to said articles for application thereto, an upright hopper having an exit opening at its lower end and containing a supply stack of circulars, an auxiliary suction head, a pivoted bell-crank lever on which said auxiliary suction head is pivotally mounted, an arm pivotally mounted on said lever, a link connecting said auxiliary suction head with said arm, a cam for actuating said arm to pivotally operate said auxiliary suction head to withdraw terminal circulars through exit opening from said supply stack, an operating member connected with said bell-crank lever, a cam acting on said operating member to pivotally swing said bell-crank lever whereby said auxiliary suction head is shifted into delivery relation to said transporting means for delivering the withdrawn circulars thereto, and means for applying adhesive to said circulars during transfer thereof by said transporting means and prior to their application to said articles.

12. A machine of the kind described comprising a support for articles, transporting means including a main suction head for transporting circulars into applying relation to said articles for application thereto, an upright hopper having an exit opening at its lower end and containing a supply stack of circulars, an auxiliary suction head, a supporting lever carrying said auxiliary suction head, a pivoted bell-crank lever on which said supporting lever is pivotally mounted, an arm pivotally mounted on said bell-crank lever, a link connecting said arm with said supporting lever, a cam acting on said arm, link and supporting lever to actuate said auxiliary suction head to withdraw terminal circulars through said exit open from said supply stack, an operating member connected with said bell-crank lever, a cam acting on said operating member for pivotally operating said bell-crank lever to transfer the withdrawn circulars into delivery relation to said main suction head for delivery thereto, a suction connection leading to said auxiliary suction head, a valve in said connection controlled by said bell-crank lever to relieve the suction in the auxiliary suction head coincidentally with the delivery of a circular therefrom to said main suction head, and means for applying adhesive to said circulars during transportation thereof on said transporting means and prior to their application to said articles.

13. A machine for applying circulars folded to include external plies normally constituting loose flaps and arranged to expose portions of the next adjacent plies comprising a support for articles, transporting means including a main suction head for transporting said folded circulars into applying relation to said articles for application thereto, an upright hopper having an exit opening at its lower end and containing a supply stack of circulars, an auxiliary suction head, a supporting lever carrying said auxiliary suction head, a pivoted bell-crank lever on which said supporting lever is pivotally mounted, an arm pivotally mounted on said bell-crank lever, a link connecting said arm with said supporting lever, a cam acting on said arm, link and supporting lever to actuate said auxiliary suction head to withdraw terminal circulars through said exit opening from said supply stack, an operating member connected with said bell-crank lever, a cam acting on said operating member for pivotally operating said bell-crank lever to transfer the withdrawn circulars into delivery relation to said main suction head for delivery thereto, a suction connection leading to said auxiliary suction head, a valve in said connection controlled by said bell-crank lever to relieve the suction in the auxiliary suction head coincidentally with the delivery of a circular therefrom to said main suction head, a pair of parallel supporting rails for supporting the external plies of said transported circulars against sagging, adhesive applying means for applying adhesive to the transported circulars carried by the main suction head, means for controlling the latter to cause said adhesive to be applied to the external plies and exposed portions of said adjacent plies of said circulars in spaced spots, and a spring co-operating with the controlling means for preventing the external plies of said circulars on said main suction head from sagging in the interim between the application of said spots of adhesive.

14. A machine for applying circulars folded

to include external plies normally constituting loose flaps and arranged to expose portions of the next adjacent plies comprising a support for articles, transporting means including a main suction head for transporting said folded circulars into applying relation to said articles with said external plies and the exposed portions of said adjacent plies facing the same for application thereto, adhesive applying means for applying adhesive to the circulars on said main suction head, means for controlling the latter to cause said adhesive to be applied to the circulars in spaced spots located respectively on said external plies and said exposed portion of said adjacent plies, and means for preventing contamination with adhesive of the circulars on the main suction head in the interim between the application of said spots of adhesive.

GEORGE W. VON HOFE.