July 11, 1939. H. T. DAHLGREN 2,165,539

PACKAGE

Filed May 26, 1937

FIG. 1

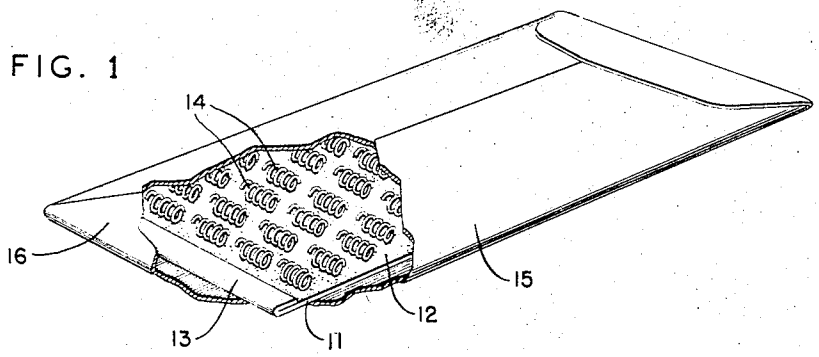


FIG. 2

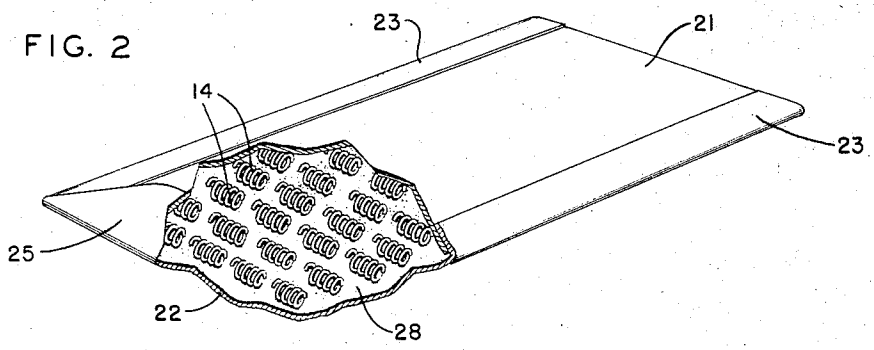


FIG. 3

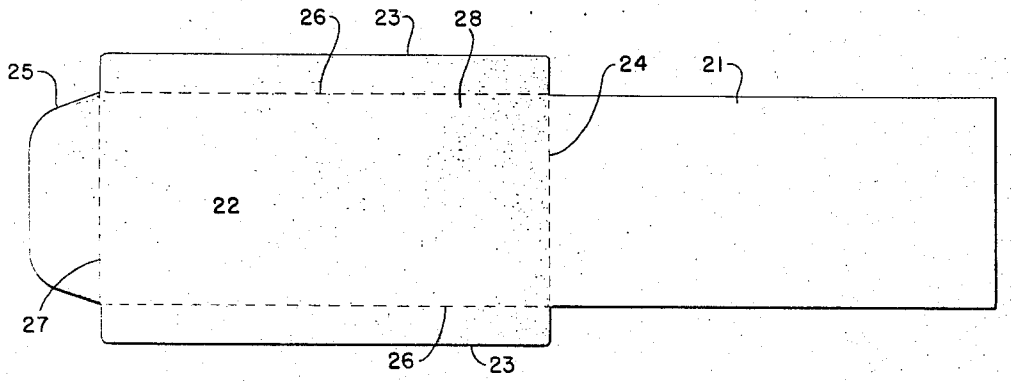
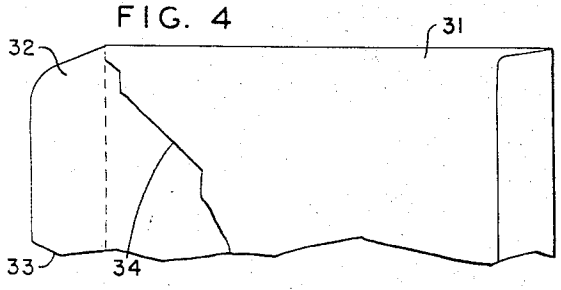


FIG. 4



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PACKAGE

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Application May 26, 1937, Serial No. 144,881

2 Claims. (Cl. 206—80)

This invention relates to article handling, and particularly to the packing, storing, and shipping of articles.

An object of the invention is to support and retain articles fixedly and out of contact with each other by such means as will afford ready removal of the article for use.

Another object of the invention is to provide containers affording easy access to the articles therein contained.

The invention features the use of pressure sensitive adhesive material applied as a coating to the surface by which articles are to be supported, whereby the articles may be readily applied and removed.

The handling of small or delicate articles during manufacture, storage, and shipment is sometimes a source of considerable annoyance and expense, even to the point of actual loss of processed material. Small helical wire springs afford an outstanding example of such an article. They roll readily upon the slightest tilting of the surface by which they are supported and become interentangled. In the handling of large numbers of these springs, unless they are kept out of contact with each other, they may form a tangled mass, the untangling of which may be more costly than the value of the entangled springs. Attempted untangling of the springs may result in such injury to many of them as will render them unfit for the use for which they are intended.

According to the present invention, the tendency of small articles to roll or engage each other is eliminated by providing a sheet coated with pressure sensitive adhesive material upon which the articles may be arranged. By lightly pressing the articles to the coated surface, they remain for an indefinite period of time as arranged, and do not come into contact with each other. They may be removed from the sheet merely by lifting them therefrom, and none of the adhesive material adheres to the articles when they are removed. The articles thus suffer no injury and the adhesive material is not impaired by having been used for this purpose, so that the adhesive coating sheet may be used repeatedly. The sheet to which the articles have been applied may be inserted into an envelope for stockroom storage or mailing.

In accordance with a modified form of the invention, the adhesive material is carried by the inner surface of one wall of the envelope in which the articles are to be stored or shipped. The envelope is preferably supplied as an unfolded blank so that the adhesive coated surface shall be exposed for easy application of the articles thereto. After the desired number of articles have been applied to the gummed surface, the enclosure is effected by folding the several portions of the blank and sealing the envelope. The sealing flap may also carry the pressure sensitive adhesive, which enables opening of the envelope, as for inspection of the contents, and resealing, without destroying or injuring flap or envelope.

For a complete understanding of the invention, and of the manner in which it may be practiced, reference may be had to the following description, taken in conjunction with the accompanying drawing, in which:

Fig. 1 is a perspective view partly broken away showing an envelope containing a gummed sheet having articles applied thereto;

Fig. 2 is a perspective view partly broken away showing an envelope having the inner surface of one wall thereof gummed to receive articles;

Fig. 3 is a plan view showing the blank from which the envelope of Fig. 2 is formed; and

Fig. 4 is a plan view showing an envelope such as that shown in Fig. 1 having pressure sensitive adhesive material on the sealing flap.

Referring now to the drawing, in which like reference characters indicate corresponding parts throughout the several views, and particularly to Fig. 1, reference numeral 11 indicates a sheet which is intended to support articles. Sheet 11 may be of paper or cardboard, and may be of any desired thickness. It may be made available as a previously prepared sheet of predetermined length, or the sheet material may be supplied in the form of a roll, from which strips of the desired length may be cut as needed. Sheet 11 has a surface coating 12 of pressure sensitive adhesive material.

The adhesive material with which sheet 11 is coated may be any of the well-known adhesives that are energized by pressure alone, require no solvent to render them effective, remain adhesive indefinitely, acquire no permanent set, deposit upon articles a minimum of adhesive upon removal of the articles from the adhesive surfaced sheet surface, and may be reused. In the preferred embodiment of the invention, the adhesive coating 12 is of a rubber base composition such as that employed on paper used in painting operations as masks to protect portions of a surface from the application of paint or lacquer thereto.

The material of which sheet 11 is made may be

kraft, bond or parchmentized paper, or may be cardboard, but the sheet material most readily available commercially with a coating of rubber base pressure sensitive adhesive is a creped or crimped paper. It preferably has no free surface fibers on the uncoated side, so that if the adhesive coated surface of one piece or portion is pressed against the back or adhesive free surface of another piece or portion, as in the formation of pads or rolls of the gummed paper, foreign matter in the form of fibers or lint shall not cling to the gummed surface upon the separation of the two surfaces.

As shown in Fig. 1, sheet 11, if of flexible material, such as paper, has the ends turned back upon themselves as at 13, bringing gummed surface into engagement with gummed surface, which cling together with far greater tenacity than does the gummed surface to any ungummed surface. The reversely bent portions 13 impart transverse rigidity to sheet 11, eliminate exposed gummed surfaces at the ends which might tend to engage and cling to a container and make removal difficult, and afford surfaces by which the sheet may be grasped during handling, thus avoiding touching the adhesive, which, however, is not objectionable, as it leaves no trace of deposit upon hands or surfaces which it touches.

Sheet 11 with adhesive film 12 and reversely folded portions 13 is ready to receive the articles it is intended to support, which may be any small elements such as springs 14. These are applied by pressing them lightly against the adhesive coating. The springs are thus held fixedly in place and cannot become entangled. It has been found convenient to arrange the springs 14 on sheet 11 in regular rows, as the counting of them for shipping, receiving, or inventory purposes is thereby facilitated. The arranging of the articles on the gummed surface may be rendered easy, and the counting of stored articles, as for inventory purposes may be simplified by providing on the adhesive coated surface rows of dots or other marks spaced apart such distances that one of the articles may be placed over each of the marks. A brief glance to note the number of visible marks is all that would be involved in inventorying the articles on a sheet. There remains only the operation of inserting filled sheet 11 into envelope 15, whereupon sealing flap 16 may be closed to effect complete protection of springs 14 from dust or corrosion.

When it is desired to use springs 14, sheet 11 may be withdrawn from envelope 15 and springs 14 may be removed from adhesive coating 12 merely by lifting them therefrom. Since the rubber base adhesive does not acquire a permanent set, articles held therein are easily lifted free, and the lifted article carries with it no deposit of adhesive requiring removal.

In Figs. 2 and 3 is shown a modified arrangement for holding small articles, in which one wall of a container carries the coating of pressure sensitive adhesive. Referring particularly to Fig. 3, wherein there is shown the blank from which a container in the form of an envelope may be formed, numerals 21 and 22 indicate the walls of an envelope between which a crease is to be formed as along dash line 24. Wall 22 has integral therewith side flaps 23 and end closing or sealing flap 25, and the formation of creases along dash lines 26 and 27 establishes the flaps and brings them generally into envelope completing and closing condition.

Wall 22 is coated, as at 28, with pressure sensitive adhesive, such as the rubber base adhesive hereinbefore described. Flaps 23 and 25 are also coated with adhesive, which may or may not be the same adhesive applied to wall 22, depending upon convenience and the circumstances under which the envelope is to be used. Thus, for example, if it is desired that the envelope, once having been closed and sealed, shall afford permanent evidence of any tampering therewith, flaps 23 and/or flap 25 may be coated with moisture sensitive adhesive, such as is used in well-known mailing envelopes. Moisture sensitive adhesive acquires a set upon drying, and opening of the flap or flaps without the use of moisture results in permanent mutilation of the flap or envelope or both. If on the contrary easy access to the contents of a sealable envelope is desirable, as for inventory purposes or for postal inspection, such access can be afforded by coating flaps 23 and/or flap 25 with the same adhesive as that applied to wall 22. The manufacture of the blank is simplified by this procedure, in that all of the adhesive coating can be applied in a single operation. Any of the flaps that are coated with the pressure sensitive adhesive may be opened and resealed repeatedly without destroying the adhesive or materially diminishing its adhesive qualities, and without mutilating flap or envelope. The employment of reusable pressure sensitive adhesive on any of the flaps renders it desirable to fabricate the envelope blank of paper which does not have free surface fibers, in order that the envelope shall not become mutilated nor the adhesive surface of the flap acquire a scale of matted paper fibers due to repeated unsealing and resealing.

The articles to be stored or shipped, such as springs 14, are most conveniently applied to the adhesive coated surface 28 when the blank is in the unfolded, flat condition shown in Fig. 3. When as many springs as are to be enclosed have been lightly pressed to the adhesive surface 28, uncoated wall member 21 is drawn down over the springs in opposed relation to wall 22, and flaps 23 are folded over wall 21 exteriorly thereof and are caused to adhere to the exposed surface thereof. The enclosure of the springs 14 or other articles is rendered complete by the folding of flap 25 over the external surfaces of portions of flaps 23 and wall 21, and energization of the adhesive coating, whether by pressure or moisture, depending upon the kind of adhesive used on the flap, whereby flap 25 is caused to adhere to the exterior of the completed envelope, which is shown in Fig. 2.

In Fig. 4 is shown a portion of envelope 31 with which envelope 15 shown in Fig. 1 may be identical but which may be considered as representing generally any well-known envelope in which an object is to be enclosed by the sealing of a flap, such as for mailing. Envelopes of this type usually have moisture sensitive, non-reusable adhesive on the sealing flap. It is proposed, in accordance with the embodiment of the invention shown in Fig. 4, to employ a coating 32 of pressure sensitive adhesive, such as the rubber base adhesive material hereinbefore described, upon the sealing flap 33. A portion of the envelope 31 has been broken away, as along line 34, to show that the envelope differs from that shown in Figs. 2 and 3, in that the inner surfaces of its walls do not carry adhesive.

As in the case of the envelope shown in Figs. 2 and 3, it is desirable that envelope 31 be fabricated of material having surface characteristics such

that the adhesive shall not acccumulate from the envelope surface a veneer of fibers and lint, so that the flap may be sealed and resealed without appreciable diminution of adhesion.

Envelope 31 may find utility in the reception and storage of unlimited varieties of objects or articles such as files of papers or record cards for filing purposes. It is the general practice of vendors of tickets for such things as sporting events, concerts, and theatrical performances, and of railway tickets, to deliver the tickets to the purchaser in an envelope. The use of envelope 31 for such purposes affords protection, by sealing against loss of cards or tickets from the envelope while enabling easy reference to the contents as frequently as may be required or desired. The envelope may also find utility in the transportation of postal matter. For example, certain classes of objects may be transported through the mails at low rates, provided that access to the contents of the mailing container can be readily gained for inspection purposes. Envelope 31 with resealable flap 33 would protect the contents from accidental escapement and loss, and would make postal inspection easy without subjecting the envelope to mutilation.

The above enumeration of convenient uses for the envelope shown in Fig. 4 is intended to be illustrative but not exhaustive, as there are many circumstances under which an envelope of this type may have conspicuous utility.

It will be understood that the envelopes shown in the drawing need not, within the scope of this invention, be of opaque material. They may be of transparent paper or cellulosic material, the latter of which is well adapted to receive a film of pressure sensitive adhesive material, and is commercially available thus prepared. Envelopes of transparent material may receive an article carrying sheet, as in Fig. 1, or may have the inside surface of a wall thereof coated with pressure sensitive adhesive material, according to the disclosure of Figs. 2 and 3. The articles applied to the adhesive would thus be visible through the wall of the envelope for display or inspection purposes.

Although specific embodiments of the invention have been shown and described herein, it is to be understood that the invention is not limited to such specific embodiments, but is capable of extensive alteration, modification, and substitution within the scope of the appended claims.

What is claimed is:

1. A package for small metallic articles including a sheet having one side coated with a rubber base adhesive composition which remains tacky indefinitely and which acquires no permanent set, and metallic articles adhesively held by said coating free of each other and capable of being removed without adherence of any appreciable quantity of said coating thereto.

2. A package for small metallic articles including a sheet having one side coated with a rubber base adhesive composition which remains tacky indefinitely and which acquires no permanent set, and metallic articles adhesively held by said coating in mutually spaced relation and capable of being removed without destroying the adhesive properties of said coating.

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