Nov. 23, 1943. H. E. LUHRS 2,335,070

PAPER NOVELTY

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Fig. 1.

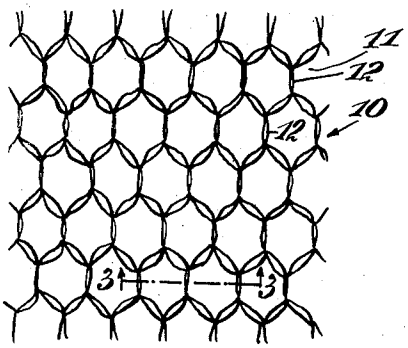


Fig. 2.

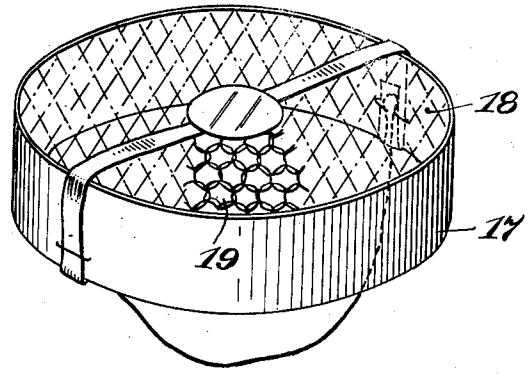


Fig. 4.

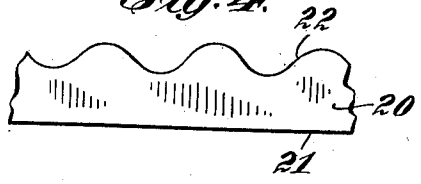


Fig. 3.

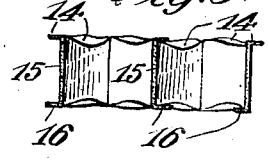


Fig. 5.

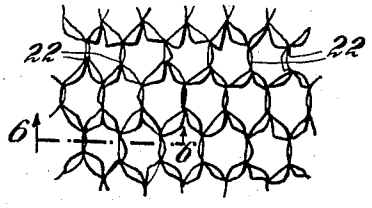


Fig. 6.

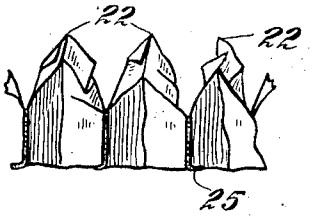
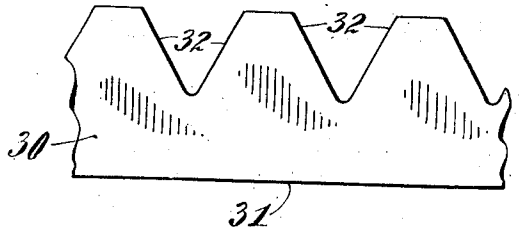


Fig. 7.



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Fig. 8.

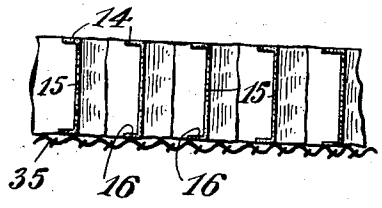


Fig. 9.

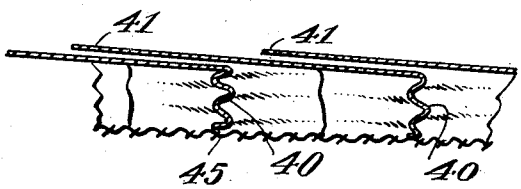


Fig. 10.

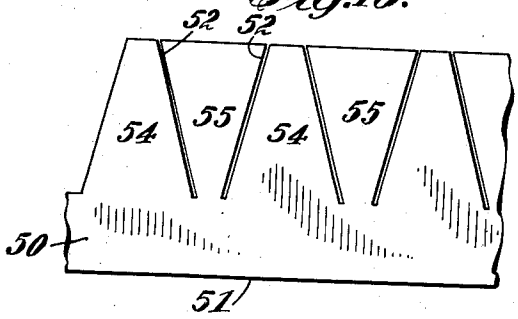


Fig. 11.

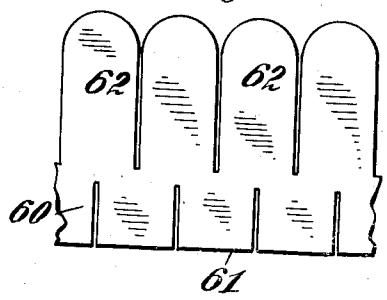
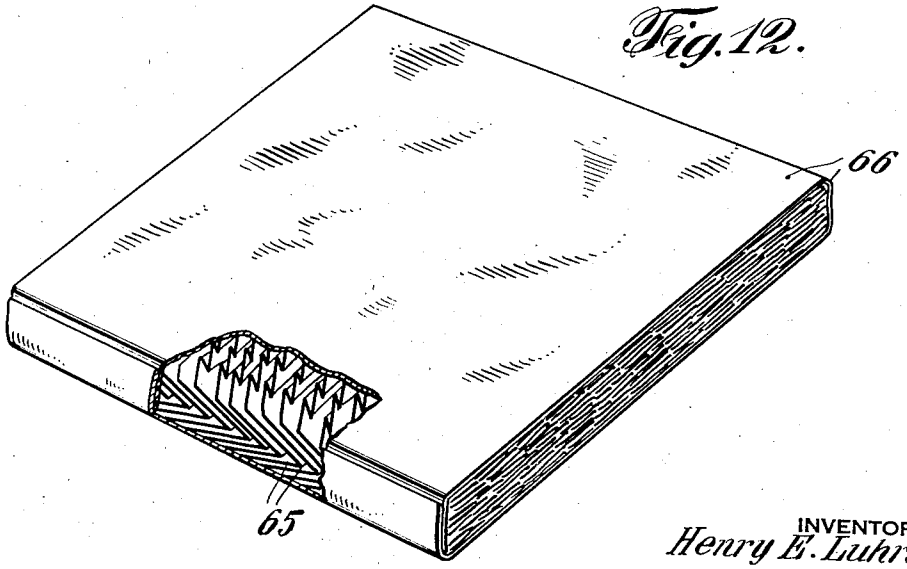


Fig. 12.



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UNITED STATES PATENT OFFICE

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PAPER NOVELTY

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Application July 30, 1940, Serial No. 348,474

4 Claims. (Cl. 41—11)

This invention relates to improvements in paper novelties and more particularly to improvements in novelties of a type made up of honeycomb paper units.

An object of the present invention is to provide a honeycomb paper unit in which a plurality of strips of paper are joined together at intervals with the joints in substantially parallelism, which unit is expanded and so pressed as to substantially maintain its expanded condition.

Another object of the invention is to provide a honeycomb paper unit of such construction that the cells are expanded and maintain expanded by distortion of the marginal edge portions of the unit.

Another object of the invention is to provide a unit of the foregoing character in which backing material is applied to one surface, determined by edges of the paper strips, for aiding in holding the unit expanded and for increasing the permanence of the unit.

A further object of the invention is to provide units of the foregoing character in which the paper strips may have either uninterrupted upper edges or may have formations of various characters in the upper edges thereof for producing novel effects.

A still further object of the invention is to provide as a new article of manufacture, a cushion made up of a unit of the foregoing character enclosed in a suitable cover.

Other objects, features, and advantages of the invention will be apparent by reference to the following detailed description of the accompanying drawings wherein:

Fig. 1 is a plan view of a unit embodying the invention and showing the manner in which the upper edges thereof are distorted out of alignment to hold the unit expanded;

Fig. 2 is a perspective view of an article of manufacture utilizing material of the nature shown in Fig. 1 as part thereof;

Fig. 3 is a section taken substantially on the line 3—3 of Fig. 1;

Fig. 4 is a side view of one type of strip which can be utilized in honeycomb units;

Fig. 5 is a view similar to Fig. 1 of a unit employing strips of the Fig. 4 type;

Fig. 6 is a section taken substantially on the line 6—6 of Fig. 5;

Fig. 7 is a view similar to Fig. 4 of another shape of strip which can be used in a modified form of unit;

Fig. 8 is a section similar to Fig. 3 showing a unit having a backing applied to one surface thereof;

Fig. 9 is a vertical section through a unit having a backing applied to one edge thereof and having slitted portions extending from the other edge thereof, which slitted portions are flattened out;

Figs. 10 and 11 are views of still further modifications of strips which can be formed into units; and

Fig. 12 is a perspective view of an enclosed unit, a part of the enclosure being broken away, such view illustrating the manner in which a unit can be utilized for cushion purposes.

Referring to the drawings and particularly to Figs. 1 to 3 inclusive, 10 indicates generally a fragment of a unit made in accordance with the present invention. This unit is constructed of a plurality of strips of paper or other similar material 11, which strips have substantially parallel upper and lower edges and which are joined together as at 12 by glue or other suitable material at intervals along the lengths thereof. The joints 12 are so staggered that the unit can be expanded to provide a plurality of cells open at the top and bottom and having their walls formed by the material of the paper strips.

After a desired number of strips of paper have been secured together in the manner shown, a unit so constructed is expanded and then the unit is processed to cause it to substantially maintain its expanded condition. To accomplish this purpose the expanded unit is flattened both at the upper and lower surfaces thereof, i. e. the surfaces defined by the upper and lower edges of the respective strips of paper, and such flattening can be accomplished by applying pressure to the upper surface of the unit by a suitable plate while the lower surface is supported on a suitable plate. The application of the pressure can be controlled so that only the marginal edge portions of the various strips are bent over haphazard like, a sufficient amount so that such distortion will prevent the unit from contracting to its original position in which the strips are in flat side to side contact. An example of such flattening is set forth in Fig. 3 wherein it will be seen that the upper edge portions 14 of the various strips are bent over at angles to the vertical expanses 15 of the strips and likewise the lower edge portions 16 of the same strips are also bent over at angles to the vertical parts. While these vertical parts have been shown as being substantially flat intermediate the bent over portions 15 and 16, it will be obvious that

they will be crushed to some extent by the flattening or pressing process and that these expanses therefore will not be truly straight. However, the amount of distortion out of straight alignment is a matter determined by the degree of compression applied to the unit. In any event sufficient pressure is applied to distort the marginal upper and edge portions of the unit so that the distorted parts serve effectively to prevent contraction of the unit. The unit in this form possesses some resiliency and can be used for various purposes.

An example of one use of a unit constructed in accordance with Figs. 1 and 3 is set forth in Fig. 2 which represents a novelty hat of the "page boy" type, which hat is composed of an annulus 17 of paper, cardboard or the like, the crown of which is enclosed by a unit 18 of material made as before described. A portion of the construction of this material is shown at 19, it being understood that the entire crown of the hat is made of this material.

If desired, a unit can be constructed as just described but instead of utilizing strips of paper having parallel upper and lower edges, strips similar to that of Fig. 4 can be utilized, wherein the strip 20 has a straight lower edge 21 and a scalloped upper edge 22. A plurality of strips of this character can be secured together with joints between adjacent strips in such fashion that they are located between the peak parts of adjacent strips and between the valley parts of adjacent strips. When a unit is so constructed, it can be expanded and when expanded, crushed or flattened out in the same manner as before described. A unit so made is shown in elevation in Fig. 5 wherein the peak parts 22 are illustrated as assuming more or less haphazard shape due to the flattening out process while in Fig. 6 a section of the same unit illustrates more completely the results obtained by the flattening process. Again the lower edge parts are bent over at angles approximating right angles as at 25 while the joint peaks are bent over as before stated in haphazard fashion to produce a new type of paper novelty. The material so constructed has various uses, such as for ornamental purposes, for use in making various articles and for any other desired use.

As a further modification of the invention, it is contemplated that strips of the form shown in Fig. 7 can be united into a unit in the same manner as before described. The strip 30 of Fig. 7 has a straight lower edge 31 with a toothed upper edge as indicated at 32. The lines of union between adjacent strips can extend from the bottom to the upper extremities of the strips and also from the bottom to the lower extremities of the upper edge. When a unit is so manufactured, it can be expanded and then pressed to maintain its expanded position in the same manner as previously described.

In Fig. 8, illustration has been made of the manner in which an expanded unit can be reinforced to permit it to be of more permanent nature and to materially reduce the chances of tearing or distorting any of the cells of the unit. The unit illustrated is similar to that shown in Fig. 3 and the same reference characters are applied thereto. However, as a further step in the process of manufacture of this form of the invention, adhesive material is applied to the turned over marginal portions of the bottom edge of the unit and then a backing 35 applied thereto. This backing may be of suitable fabric or of paper or if desired, it may be a compound backing both of paper and of fabric or of any other suitable material. A unit so made has a considerably longer life in use than a unit not provided with the backing material.

In Fig. 9, illustration is made of the application of the present invention as an improvement to the showing of my Patent No. 2,089,563, issued August 10, 1937, for Paper novelty. In this form of the invention the strips of paper utilized in forming the unit have their upper edge portions slitted at intervals and their lower edge portions united at intervals with glue or other suitable material in the manner set forth in my patent. After a unit so made has been expanded, it is again flattened by the application of pressure as before described with the result that the slitted top edge portions are pressed down into angular positions in a haphazard manner. The pressure can be of such degree that the united edge portions are also collapsed to some extent as indicated at 40. The upper edge portions being slitted in vertical lines, can simulate grass or the like if the paper is of suitable color. These edge portions are shown at 41 and for simplicity of illustration are illustrated as all being folded over in the same direction which would not necessarily occur in the actual manufacture of the device. Again an adhesive is applied to the folded over lower edge portions and a backing 45 applied thereto for reinforcing the expanded unit to materially reduce the chances of any cells becoming distorted or torn. This material is particularly useful for display purposes in show windows for the simulation of grass, and in any other desired installation such as for example on floats or the like or for any other purposes wherein the appearance of grass is desirable. The backing 45 again may be of fabric or paper or any other desired material or, as before stated, both fabric and paper.

Figs. 10 and 11 illustrate other strips which can be utilized instead of the strip of Fig. 9 which, as before stated, has parallel vertical slits in the upper edge portions. In Fig. 10 the strip 50 has a straight lower edge 51 but the upper edge is provided with a plurality of slits 52 so arranged as to provide tabs 54 and 55 alternately spaced and having respectively converging and diverging side edges. A unit made up of a plurality of strips 50 can be processed in the same manner as previously described and when so produced presents a novel appearance and is useful for various purposes.

In Fig. 11 the strip 60 again has a straight lower edge 61 but the upper edge portion is shaped into separated petals 62. Strips 60 can be connected in honeycomb fashion by the application of adhesive only in the unslitted lower edge portions so that the petals 62 can be folded haphazardly at angles during the flattening process. The steps of manufacture previously described are carried out in the same manner as this same type of strip.

In Fig. 12 a further use of the present invention has been illustrated. In this form use is made of a unit similar to that shown in Fig. 1 with the exception that the component strips of paper are relatively wide as considered from the bottom to the top edges thereof. Such strips are formed into a honeycomb unit in the same manner previously described and then this unit is expanded and compressed to flatten out parts thereof. Due to the increased width of the

strips, the flattening out of the unit results not only in folding over the marginal edge portions of the various strips but also results in a bending of the entire unit substantially midway between the top and bottom as indicated by the folded lines **65** in Fig. 12. When the unit has been expanded and flattened out in the proper manner, suitably sized fragments thereof can be enclosed in a paper or other cover **66** to form a cushion. This cushion has various uses such as a chair cushion of temporary character, as a cushion useful in the packing of fruit, vegetables and the like, and for any other purposes wherein a relatively inexpensive, temporary cushion is desirable.

While the various forms of the unit described hereinbefore have been defined as being made up of paper strips, it is contemplated that material other than paper can be used. For example, thin cellulose material or other thin composition materials can be used with equal facility so long as such material possess the requisite characteristics. Material to be used in this invention must be pliable to the extent that the unit can be expanded and then the component parts thereof can be distorted with some permanence to maintain the unit in expanded condition.

From the foregoing it will be seen that the present invention provides a new type of honeycomb novelty which novelty, in its essential characteristics, comprises a honeycomb unit of paper or similar material which has been expanded and then flattened in such fashion as to maintain its expanded condition. It will be understood that the invention is capable of modification beyond the illustrated embodiments and accordingly any limitations imposed thereupon are to be only those set forth in the following claims.

What is claimed is:

1. As a new article of manufacture, a generally flat honeycomb unit made up of a plurality of strips of pliable material connected together at intervals by substantially parallel joints that extend perpendicular to the faces of the unit, said unit being expanded and crushed to an extent whereby the upper and lower edge portions of the strips are permanently distorted laterally out of the planes of their respective strips to maintain the unit in expanded condition.

2. As a new article of manufacture, a generally flat honeycomb unit made up of a plurality of strips of pliable material connected together at intervals by substantially parallel joints that extend perpendicular to the faces of the unit, said unit being expanded and crushed to an extent whereby the upper and lower edge portions of the strips are permanently distorted laterally out of the planes of their respective strips to maintain the unit in expanded condition, and backing material secured to the distorted lower edge portions of the strips of said unit.

3. As a new article of manufacture, a cushion comprising a generally flat honeycomb unit made up of a plurality of strips of pliable material connected together at intervals by substantially parallel joints that extend perpendicular to the faces of the unit, said unit being expanded and crushed to an extent whereby the upper and lower edge portions of each strip are permanently distorted laterally out of the plane of the strip to maintain the unit in expanded condition, and a wrapper covering the faces and opposite edges of the unit.

4. As a new article of manufacture, a generally flat unit derived from an initially expansible and contractible unit of the kind set forth, made up of a plurality of strips of pliable material connected together along substantially parallel lines perpendicular to the faces of the unit, said unit being in its expanded condition and having the upper and lower edge portions of individual strips permanently distorted laterally out of the planes of their respective strips to impart to the unit a permanent set in its said expanded condition.

HENRY E. LUHRS.