D. H. SHAPIRO.

PACKING FOR FRAGILE ARTICLES.

APPLICATION FILED OCT. 23, 1915.

1,199,310.

Patented Sept. 26, 1916.

2 SHEETS—SHEET 1.

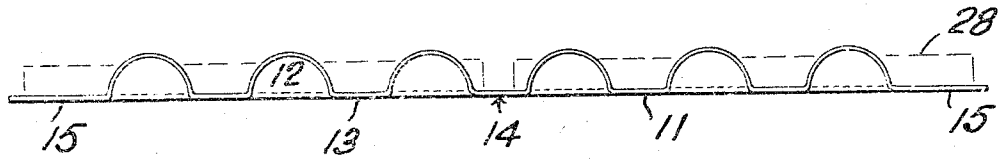


FIG. 1.

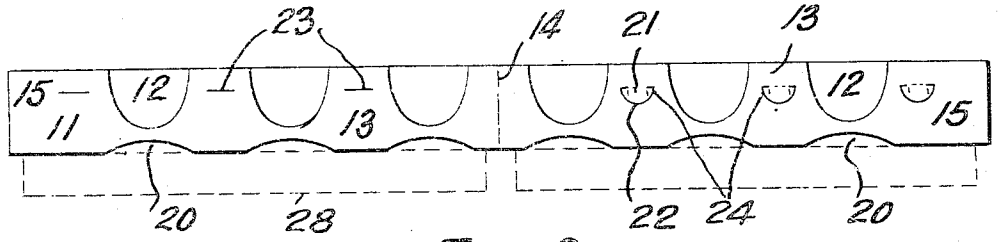


FIG. 2.

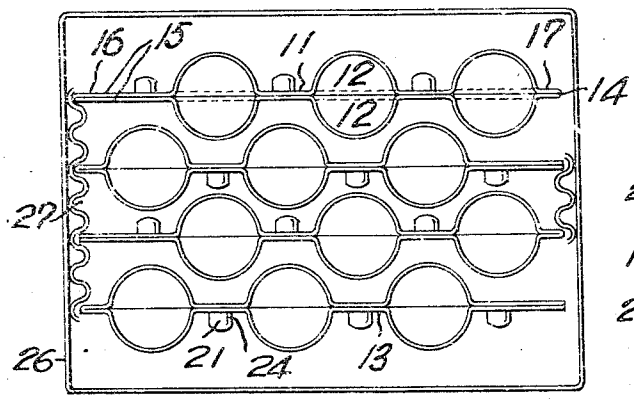


FIG. 3.

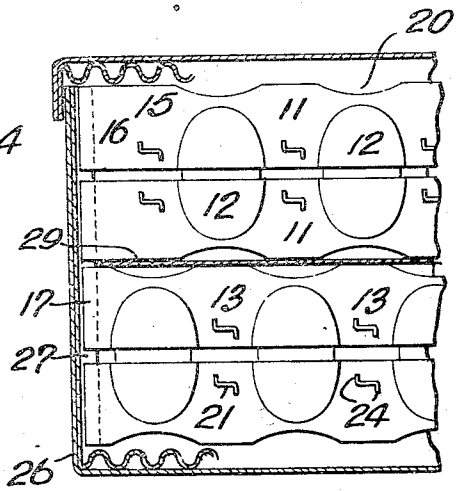


FIG. 4.

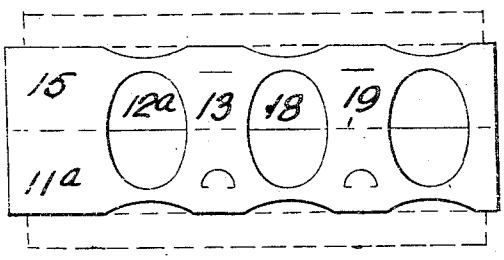


FIG. 5.

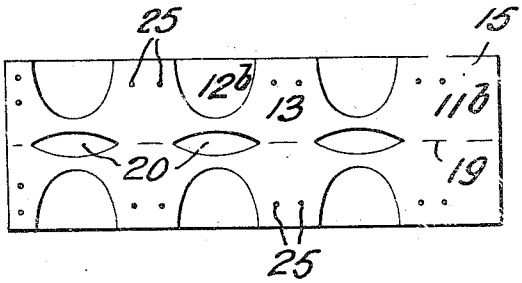


FIG. 6.

Witnesses

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2 SHEETS—SHEET 2.

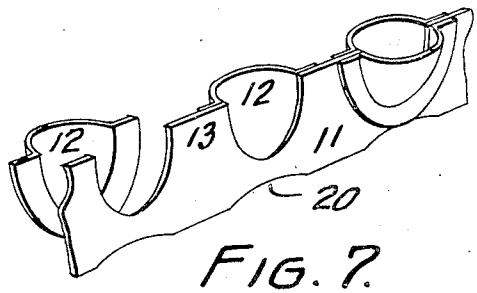


FIG. 7.

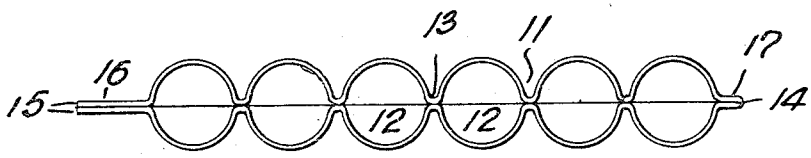


FIG. 8.

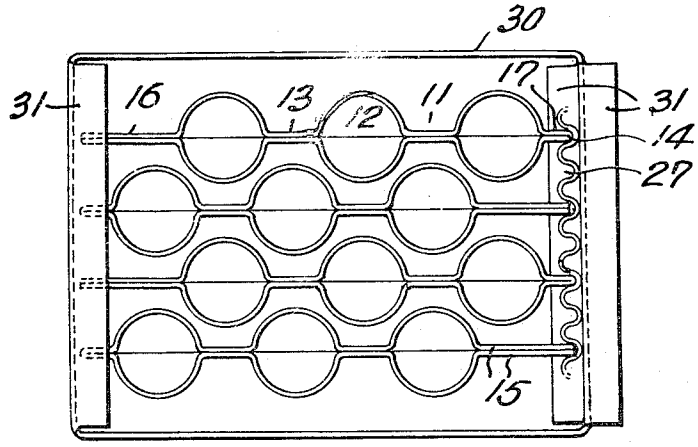


FIG. 9.

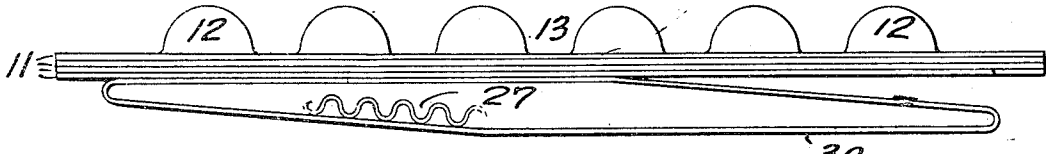


FIG. 10.

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PACKING FOR FRAGILE ARTICLES.

1,199,310. Specification of Letters Patent. Patented Sept. 26, 1916

Application filed October 23, 1915. Serial No. 57,504.

To all whom it may concern:

Be it known that I, DAVID H. SHAPIRO, a citizen of the Dominion of Canada, and resident of the city of Montreal, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Packing for Fragile Articles, of which the following is a full, clear, and exact description.

This invention relates to improvements in means for packing eggs.

The object of the invention is to provide a simple and inexpensive packing for eggs which will effectually preserve the eggs from breakage.

A further object is to provide a packing which may be sold at a very low cost, so that when soiled or damaged it may be discarded and replaced by a fresh one.

A still further object is to provide a packing which may be stored or transported when empty in very small space.

Another object is to provide a packing which may be assembled very quickly and easily, and in which the eggs may be placed easily and rapidly without danger of breakage.

In the drawings which illustrate the invention:—Figure 1 is a plan view of the packing in its initial form. Fig. 2 is an elevation of same. Fig. 3 is a plan view showing the packing inserted in a container for shipment. Fig. 4 is a side elevation of the packing arranged in a container to hold a plurality of layers of eggs. Figs. 5 and 6 show slightly different arrangements of the same packing. Fig. 7 is a fragmentary perspective view showing an alternative method of forming the pockets. Fig. 8 is a plan view of a slightly modified form of filling. Fig. 9 is a plan view illustrating a method of packing large containers. Fig. 10 is an elevation of the packing in knock-down form for shipment from the manufacturer to the packer.

Referring more particularly to the drawings, 11 designates a strip of material such as pulp board, papier mâché or other suitable material, which is pressed or otherwise formed into a series of pockets 12 suitably spaced apart by flat portions 13 of the strip. In the form of strip shown in Figs. 1 to 4, there are an even number of pockets in the strip, so that the same may be folded upon itself at the central crease 14 to bring the pockets of one half into register with the pockets of the other half, so that they combine to form a receptacle capable of holding one half of an egg or other article. In other words, the erected strip forms a web having pockets symmetrically disposed in its upper edge. It is preferred to make the end portions 15 of the strip somewhat longer than the flat portion 13 between the pockets at the center of the strip, so that when the strip is folded upon itself, the parts 15 will form an endwise projecting tab or web end 16 much longer than the similar tab 17 formed by the folding of the central portion at 14. The spacing of the pockets 12 and the relation between the parts 14 and 15 is such that when the strips are erected to form egg containers, the long tabs 16 of a series of the containers may be arranged alternately at the right and left hand ends, so that the pockets will be arranged in staggered relation, as clearly shown in Fig. 3. This arrangement also permits a lower layer to be arranged in staggered relation with an upper layer, as shown in Fig. 4, regardless of whether the packing strips of the upper layer are arranged parallel with the strips of the lower layer or at right angles thereto.

In Figs. 5 and 6, the packing strip is formed by folding the strip of material at its longitudinal center in place of at the transverse center, as in the former figures. The resulting pockets are, however, exactly the same. In Fig. 5, the sheet of material, designated 11^a, is formed with the pockets 12^a which are double the size of the pockets shown in Fig. 2. These pockets are then cut transversely at 18, the cuts being in alinement with the crease 19 extending along the longitudinal center of the material. The material is folded so that the pocketed surfaces of the two halves come into contact, forming pockets exactly simi-

lar to those formed by the transverse folding of the strip 11. In Fig. 6, the pockets instead of being formed complete in the strip, as in Fig. 5, are formed in part at the opposite edges of the strip 11^b, as shown at 12^b. The strip is then folded at the longitudinal crease line 19, so that the pocketed surfaces of the two halves are brought into engagement, forming egg receiving pockets, as previously described.

In any or all of the forms shown, it may be found desirable to cut away the material at the edge of the strip or web in line with the ends of the pockets, as shown at 20, so as to prevent the material directly below the pockets coming into contact with the surface on which the strip stands, and transmitting any shock or vibration to the pocket and egg therein. This cutting away of the material also provides for a limited yielding or springing when subject to shock or vibration, so that such shock or vibration is largely absorbed by the material and is not transmitted directly to the end of an egg in the pocket, but is distributed through the material of the web and pocket over the surface of the egg.

While certain materials may be stiff enough to retain proper form and prevent separating of the strip, which would result in opening of the pockets, it does not follow that all materials, particularly of the cheaper grades, will have this stiffness. It may therefore be found desirable to provide means for connecting the parts of the strip. A satisfactory and economical method of doing this is to form tongues 21 in one half of the strip by means of cuts 22 shaped as shown, and slits 23 in the other half of the strip, through which the tongues may be inserted when the strip is folded. The tongues are reduced in width at their point of attachment to the strip, so that after insertion through the slits 23, the side portions 24 of the tongues may be bent out of the plane of the remainder of the tongues, so as to hold the same against retreat through the slits 23. It will of course be understood that if desired the parts may be secured together by means of the well known wire stitches passed through apertures 25, shown in Fig. 6. It will also be understood that such special fastening means may be omitted, or if present in the structure, disregarded and the parts connected by any suitable means.

In Fig. 8, the strip is shown with the spacing of the pockets so modified that the pockets are practically touching one another, but in other respects the strip may be similar to the form shown either in Figs. 2, 5 and 6. The former figures show what may be the maximum spacing necessary under practical conditions, while Fig. 8 shows what is obviously the minimum spacing, but it will be understood that the invention is not limited to any particular spacing of the pockets, as this is dependent in practice on several variable factors.

The egg packing just described is designed to be used as a filler for egg containers of any size. Containers formed of the well known corrugated fiber board, designated 26, are particularly applicable to this purpose, the corrugations being internally disposed, so as to form grooves in which the ends of the fillers may be inserted, and by which they will be held, as clearly shown. But it will be understood that the use of this packing is not limited to corrugated cardboard containers, as any container having means to hold the ends of the strips may be utilized. In large containers where the strips are much longer than those shown in the drawings, it is possible that there may be more flexibility of the strip in a lateral direction than is desired. To overcome this, the strip may be made slightly wider, as indicated in dotted lines at 28, Figs. 1, 2 and 5, and this excess material bent to form a flange projecting from the body of the strip in the same direction as the pockets 12.

One very simple method of using the packing, which is very desirable as affording additional protection for the eggs and as rendering the packing and unpacking of a large container extremely rapid and safe, is the use of frames 30, shown in Fig. 9, which may be made of any suitable material. This frame comprises sides and ends internally grooved and hingably connected at the corners so as to be collapsible, as shown in Fig. 10. The ends or sides are provided at both upper and lower edges with hingably connected flaps 31. The packing strips are inserted in these frames which are of a size to hold a small number of eggs, such as six, twelve, or twenty-four eggs, and when each frame is filled, the flaps 31 are turned over the ends of the strips to hold the strips in place, as clearly shown, thus retaining the packing strips in the frame, so that the eggs therein may be handled as a unit in packing, unpacking or selling. Fig. 10 shows the method of packing the empty filling for transportation. A suitable number of frames 30 are collapsed for transportation, as shown, and the filling strips nested one within the other, so that the entire packing for a large container holding twelve, twenty-four or more dozen eggs may be reduced to very small compass and parceled for shipment or storage.

The operation of filling a container with eggs, using the packing just described, is extremely simple. A number of strips are

taken and folded at the crease line to form pockets capable of receiving one-half of each egg. The two halves of each strip are secured together, if necessary, and the holders thus formed inserted in the containers, the projecting end portions 16 and 17 of the web engaging in the grooves 27 of the container. Care is taken to place the holders or packing strips with the long ends 16 arranged alternately at opposite ends, so that the egg pockets are in staggered relation and the strips brought closer together than would be otherwise possible. When the bottom of the container is covered by the packing strips arranged with the pocket openings up, the eggs are inserted on end in the pockets and covered by further packing strips arranged as described, except that the pocket openings are turned down to receive the upper portions of the eggs. Further layers of eggs may be inserted in the same manner, a separating sheet 29 being inserted between the various layers, if desired. This sheet may be corrugated on one or both sides, and both the bottom and top of the box corrugated on the inner surface, so that the packing strips in addition to engaging the corrugations on the sides or ends of the box for the purpose of holding the same in position, may engage in the corrugations of the top, bottom or separating sheets 29, thus holding the strips against flexion in a lateral direction. It is obvious that the second layer of eggs may be staggered with respect to the lower layer, and also that the packing strips of the upper layer may be arranged parallel with those of the lower layer or at right angles thereto. If desired, the packing frames already described, each holding a suitable number of eggs and handled as units and each packed as previously described, may be used to fill the case, in preference to the method just described. While the packing strip has been heretofore described as pressed, so that the strip and pocket parts are integral, it will be obvious that the pocket parts may be made separate from the strip, as shown in Fig. 7, and attached thereto by any suitable means, without departing from the spirit of the invention. It will be obvious that instead of folding the strips, shown in Fig. 5, two strips may be placed together so as to form completely closed pockets, and inserted in the container. With this arrangement, the ends of the two strips will be held together by insertion in the container grooves, while the intermediate portion of the strips may be held together by any suitable fastening means, or not at all, as may be found necessary.

The spacing shown in the first figures of the drawing has been stated as substantially the maximum spacing which will ordinarily be necessary in practice, that is to say, the spacing is such that upon lateral movement of one strip relative to the next, the pockets of each strip will contact with the web portion of the adjacent strip instead of with the pockets thereof, so that the eggs or other articles in one pocket will not receive a blow and the pockets will not strike against one another and endanger the contents. It will thus be seen that the packing is so arranged that no matter from what source the blow is received, it is distributed by the packing over a large portion of the egg surface, and is never allowed to concentrate on a small area.

Having thus described my invention, what I claim is:—

1. A packing for fragile articles, comprising a web, pockets carried by the web arranged symmetrically on opposite sides of the web and extending therethrough, and recesses in the edge of said web in alinement with the pockets.

2. A packing for fragile articles, comprising a web, pockets formed symmetrically on opposite sides of said web and open in the upper edge of the web, recesses in the lower edge of the web in alinement with the pockets, one end of said web extending farther beyond the pockets than the other end.

3. A packing for fragile articles comprising a web adapted to be held at its ends and to rest upon its lower edge, pockets formed in said web opening at the upper edge thereof, recesses in the lower edge of the web under the pockets imparting flexibility in a vertical direction to the web, and a lateral flange on the web holding the same against flexion in a lateral direction.

4. In a packing for fragile articles, a strip of material formed in two similar integral parts folded one upon the other, each part having a plurality of pockets formed therein opening at the top and through the side of the part to communicate with similar pockets in the other part, one of said parts having slits therein and tongues carried by the other part inserted through said slits and folded out of the plane of the slits to hold the same against retreat, and recesses formed in the edge of said strip under the pockets imparting flexibility in a vertical direction to the structure.

5. In a packing for fragile articles, a strip of material formed in two similar integral parts folded one upon the other, each part having a plurality of pockets formed therein opening at the top and through the side of the part to communicate with similar pockets in the other part, one of said parts having slits therein and tongues carried by the other part inserted through said slits and folded out of the plane of the slits to hold the same against retreat, and flanges

projecting laterally from the lower edge of the strip under the pockets holding the strip against flexion in a lateral direction.

6. A packing for fragile articles, comprising the combination with a container having a grooved interior surface, of a plurality of pocket carrying webs arranged in pairs to retain articles in the pockets thereof, held at their edges in the container grooves, recesses in said webs in alinement with the pockets imparting flexibility to the webs in a vertical direction, and flanges on the webs holding the same against flexion between the ends in a lateral direction.

In witness whereof, I have hereunto set my hand, in presence of two witnesses.

DAVID H. SHAPIRO.

Witnesses:

S. R. W. ALLEN,

G. M. MORELAND.