March 20, 1956 T. B. R. PETERS 2,738,916

CLOSURES AND SEALS FOR CARTONS

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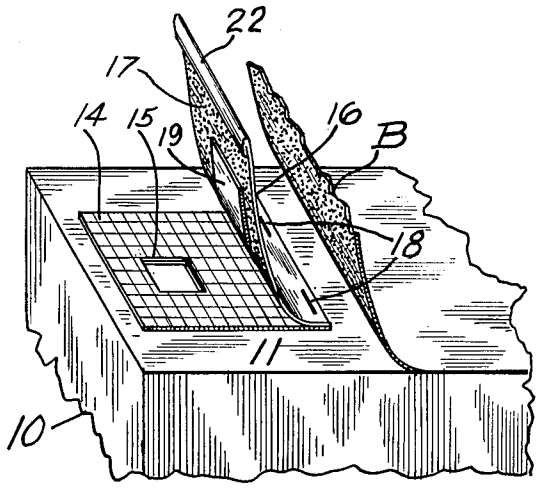



FIG. 1.

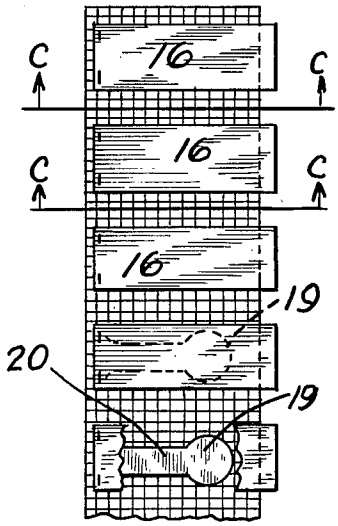



FIG. 7.

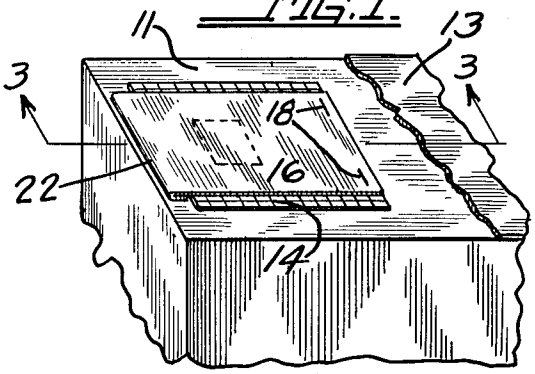



FIG. 2.

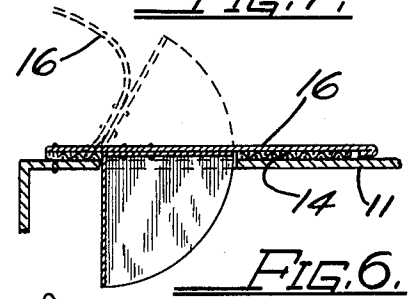



FIG. 6.

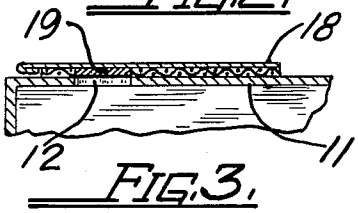



FIG. 3.

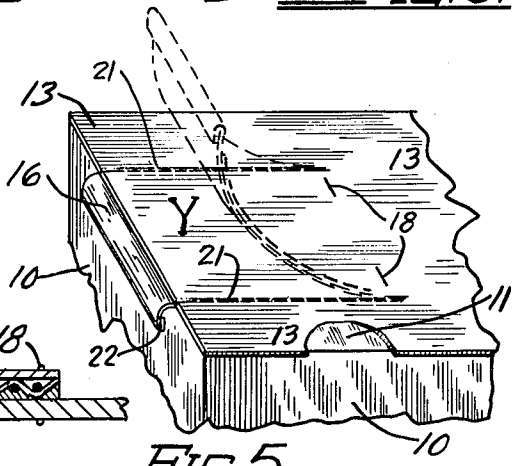



FIG. 5.

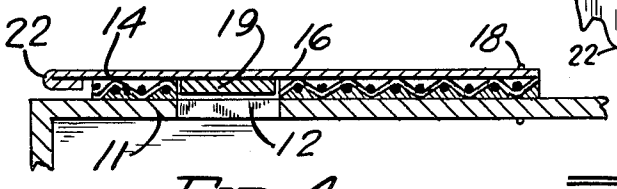



FIG. 4.

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# CLOSURES AND SEALS FOR CARTONS

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3 Claims. (Cl. 229—7)

This invention relates to improvements in closures and seals for cartons and has reference in greater particular to seals that can be readily opened and which can also be used for resealing the carton.

Today there are a large number of articles that are dispensed in sealed packages some of which are made from paper and others from metal or plastic.

The articles most frequently dispensed in paper cartons are sugar, rice, breakfast cereals, soap powder, corn meal, salt, etc. All of the materials mentioned are dry when sold and are flowable to the extent that they can be dispensed through a pour hole.

It is quite common to provide paper cartons with portions of the top and/or sides with areas, bounded by weakened tear or score lines, that can be broken away by the fingers or by the help of a knife, a fork or a spoon. Other cartons merely contain direction for cutting or tearing the material where a pour opening is desired.

The openings formed by tearing the material are ragged and gives the opened carton an appearance unpleasant to look at but serves the purpose of dispensing the material. After such pour openings are formed they cannot be resealed and the contents, unless removed at once, are open to contamination by dust and insects and if the contents are deliquescent they will absorb moisture from the air which is harmful to some such products.

It is the principal object of this invention to produce a seal that can be readily opened and as readily resealed.

Another object is to provide a seal that can be applied by the box making machine at the time the box is made thereby adding very little to the cost of the carton. The above and other objects that may become apparent as the description proceeds are attained by means of a construction and an arrangement of parts that will now be described in detail for which purpose reference will be had to the accompanying drawings in which the invention has been illustrated and in which:

Figure 1 is a partial perspective view showing the top portion of a carton provided with the seal that forms the subject of this invention the seal being shown in open position;

Figure 2 is a view similar to that shown in Figure 1 and shows the seal in closed position;

Figure 3 is a section taken on line 3—3, Figure 2;

Figure 4 is a section like that shown in Figure 3 and shows the parts to an enlarged scale;

Figure 5 is a view similar to that shown in Figure 2, with the top closure tab of the carton in sealed relation to the carton and shows by broken lines the seal in open position;

Figure 6 is a section showing the seal provided with a pouring spout and

Figure 7 shows the manner in which the seals are prepared for application to the carton by the box forming machine.

Referring now to the drawing, reference numeral **10** designates a paper carton, usually of oblong rectangular cross section, and **11** the inner closure tabs of the top to



which the outer closure tab **13** is attached by glue of the usual kind employed in box making. The closure tabs **11** are provided with a pour hole **12** and the two parts **11** are adhesively attached to the top closure tab **13** as in the usual carton construction.

The present invention relates to the seal and closure positioned between tabs **11** and **13** and will now be described.

The sealing device consists of a fabric tape **14** that has its under surface gummed, the fabric being exposed on the other or upper side.

Such fabric tapes, gummed on one side, are usually marketed under the name "bookbinders tape." The fabric tape is provided with a perforation that is the same size and shape as opening **12**. Openings **12** and **15** have been shown as rectangular but may be round or any other shape. Attached to the fabric side of tape **14** is a sealing tape **16** which has its under surface covered with a non-drying adhesive **17**. (Such tape is usually sold under the name of "masking tape.") Tape **16** has one end attached to the fabric side of tape **14** by staples **18** which prevent its removal. A sheet of paper, plastic or metal foil **19** of substantially the same size and shape as openings **12** and **15** is attached to the under side of tape **16** in a position to cover opening **15** and may be individual pieces or formed in long strips as indicated in Figure 7, whichever is found to be the most desirable. When tape **16** is pressed down onto the fabric surface of tape it will adhere thereto forming an air tight seal entirely around hole **15** and paper **19**. If parts **19** are so made that they form a long strip as shown in Figure 7 the part **20** will not form a seal with the upper surface of tape **14**. Where dry food products are packaged in this way a hermetic seal is not an essential. After tape **16** has been pressed down into the position shown in Figures 2, 3 and 4 the top closure tab **13** is pressed down onto end tabs **11** and tape **16**. Since the under side of tab **13** is covered with a moist glue before it is pressed down it will form a protective cover over the seal and the carton top. In the drawing the thickness of the parts has been exaggerated so as to facilitate the drawing. Tapes **14** and **16** are quite thin, however. That part of tab **13** directly over the seal is perforated or scored along lines **21** and therefore when tape **16** is grasped by its doubled end **22** and pulled upwardly, as in Figure 5, cover tab **13** will tear along score lines **21** and will remain attached to the upper surface of tape **16**. After the desired quantity of material has been dispersed the seal is returned from the dotted line position shown in Figure 5 to the full line position.

At this point the importance of the fabric tape will be explained. If tape **16** were attached directly to the upper surface of tabs **11** it would, when pressed down upon them, adhere and form a good seal about opening **12**. Such a construction is shown in applicant's copending application Serial Number 362,635 which was filed on June 18, 1953, now abandoned.

The paper employed in food package cartons is a poor grade of soft cardboard and is easily torn. It was found that when the seal was broken in a construction in which the tacky non-drying adhesive of tape **16** was in firm engagement with the outer surface of carton tabs **11**, the adhesive would tear loose and carry with it a considerable amount of paper fiber and this made it impossible to effectively reseal the package after the seal had once been broken. To remedy this difficulty the expedient of first adhesively attaching a piece of gummed fabric tape to the box top; providing the tape with a hole that registers with the pour hole in the box top and then attaching the sealing tape **16** to the gummed tape, as shown in the drawing, was tried. It was found that the adhesive on tape **16** would break away from the fabric tape clean

and that the opening could therefore be resealed a large number of times.

If tape **16** was closed with the adhesive exposed in opening **12** some of the contents of the box would adhere to the tape, which is objectionable and that portion of the adhesive **17** directly over the pour hole was therefore covered with a piece of paper **19**.

A seal made in the manner described forms an air tight seal that can be easily opened and which can be returned to sealing position and again seal the opening. By scoring that portion of tab **13** directly above the seal the box, when resealed, will have a neat appearance.

Figure 7 shows how the seals can be made in the form of a long strip which is adapted to be applied to the carton by a suitable attachment that moistens the gummed surface, cuts the strip along lines *c*—*c* and positions it on tabs **11**.

In Figure 6 a modification has been shown in which the non-adhesive part **19** has been replaced by a metal spout like shown in the copending application above identified.

Applicant calls particular attention to Figure 5 which shows a slightly modified form in which the sealing tape **16** is glued to the under surface of closure tab **13** and may in addition be attached thereto by staples **18** as shown although that is not essential. That portion of tab **13**, between the serve lines **21**, designated by Y, when raised to the dotted line position shown carries with it the sealing tape **16** and serves as a seal and resealing means. Tab **13** does not have to be torn off as suggested with the construction shown in Figures 1 and 2.

Cartons provided with the seal and closure above described can be readily resealed and will exclude dust and ants or other insects; they will not spill the contents if upset and can be carried and handled with no danger of spilling the contents.

What I claim as new is:

1. A closure and seal for cartons containing a dry flowable product and provided with a pour hole, said seal



comprising a piece of perforated fabric tape of greater length and width than the pour hole, having one surface gummed for effecting an attachment to the outer surface of carton in position to register the perforation therein with the pour hole, an elongated tape of greater width than the perforation in the fabric tape, having one end attached to the latter on one side of the perforation, said tape having a length sufficient to extend across and beyond said perforation so as to encompass said perforation, the surface of said last named tape facing the fabric tape having a coating of pressure sensitive adhesive which when pressed against the fabric tape forms a sealed zone surrounding the pour hole on all sides.

2. A closure and seal for cartons in accordance with claim 1 in which that portion of the adhesive covered surface of the second mentioned tape which is directly over the pour hole and the fabric tape perforations, is provided with a covering presenting a non-adhesive surface to the interior of the bag.

3. A resealable carton in accordance with claim 2 in which the said second mentioned tape extends beyond the lower edge of the fabric tape and terminates in a reversely bent portion bringing the adhesive surfaces together, thereby presenting a non-adhesive surface to the carton.

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