May 2, 1933. C. W. HARTMANN 1,907,067

CARTON

Filed Aug. 15, 1931

Fig. 1.

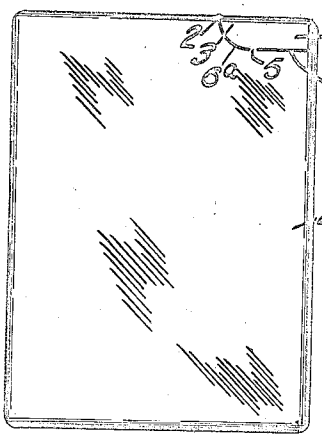


Fig. 2.

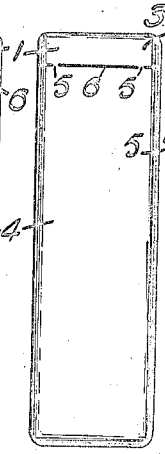


Fig. 3.

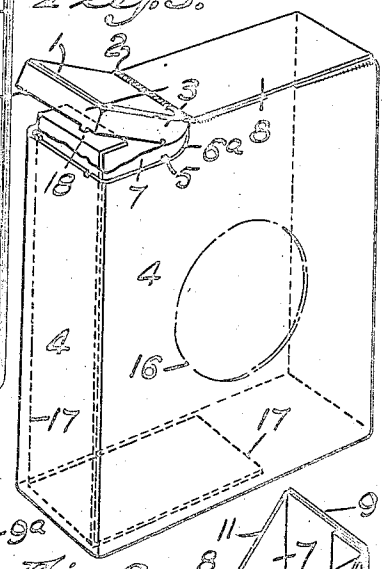


Fig. 4.

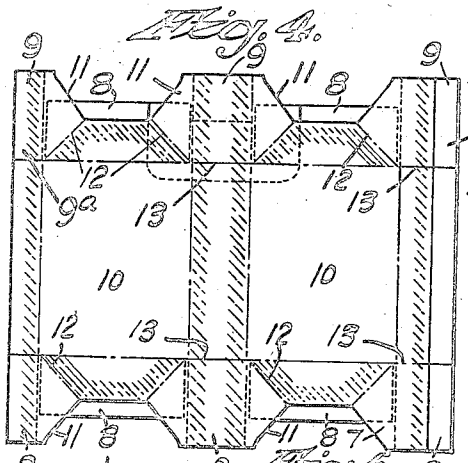


Fig. 5.

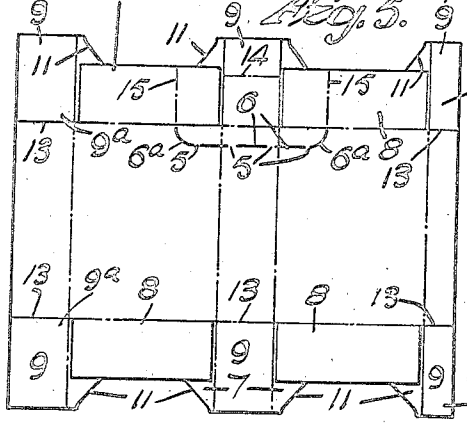


Fig. 6.

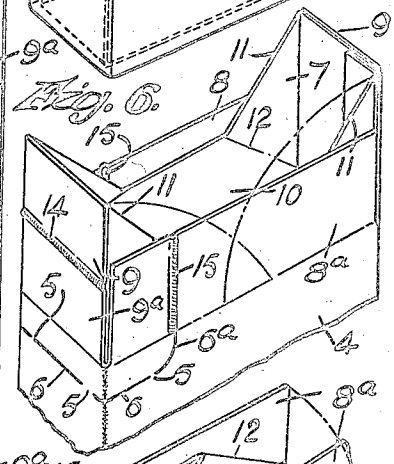
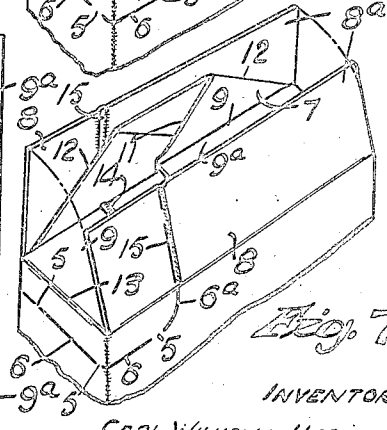


Fig. 7.



INVENTOR

CARL WILHELM HARTMANN.

PER Raymond

ATTORNEYS.

Patented May 2, 1933

1,907,067

UNITED STATES PATENT OFFICE

CARL WILHELM HARTMANN, OF LYNGBY, NEAR COPENHAGEN, DENMARK

CARTON

Application filed August 15, 1931, Serial No. 557,225, and in Great Britain January 27, 1931.

This invention relates to cartons suitable for cigarettes and other articles. The carton may be of the airtight class or it can be a simple cardboard blank folded to rectilinear form. A suitable type of carton to which my invention can be usefully adapted is that of the type in which a cardboard or like blank has a sheet of airtight lining, for example a cellulose sheet material, adhered to one face of the blank and shaped at its end edges to produce airtight sealing flaps which are adhered to each other with flaps on the blank forming airtight sealed ends. In such type of carton and other cartons it has heretofore been necessary to cut one end with a knife or to tear one end open completely on indiscriminate lines so that the neatness and utility of the carton is considerably destroyed and renders it unsuitable for packing cigarettes or other articles to be carried in a coat pocket. The object of this invention is to provide a carton which is preferably a completely sealed airtight carton which can be readily opened at one end by a simple action which will not entail a laborious cutting action or an indiscriminate tearing, and according to this invention a carton is characterized by a weakened line or a line of narrowly separated slits formed in two sides and one edge of the casing and merging into a transverse crease in one end of the casing. When my invention is applied to an airtight sealed carton I provide a blank folded transversely along a parallel pair of lines between its ends to produce one vertical edge of the carton, a perforated or weakened line intersecting said pair of lines, folds contiguous to parallel ends of the blank adapted to overlap and produce the other vertical edge of the carton, and a lining of airproof sheet material with trapezoidal like ends to close the upper and lower ends of the carton, the said perforated or weakened line only being formed in the outer casing blank and being carried into folds producing upper end edges of the carton whereby a lid is provided which can be initially opened by breaking the perforated or weakened line and tearing the lining covering such broken part.

In the accompanying drawing illustrating the preferred form of this invention as applied to a carton particularly suitable for packing cigarettes or cigars;

Figs. 1 and 2 are side and edge views of the closed carton.

Fig. 3 is a perspective view showing the carton opened,

Fig. 4 is a lay-out view of the inner side of a united cardboard blank and airproof lining.

Fig. 5 is a view of the reverse side of Fig. 4.

Fig. 6 is a broken perspective view of the upper end of the carton before folding in any of the closure flaps.

Fig. 7 is a broken perspective view showing the end flaps folded in.

Referring to the drawing it will be seen more readily by reference to Figs. 1, 2 and 3 that the chief feature of the invention consists in providing a hinged lid 1 preferably folded near one end corner of the upper end of the carton on a transverse crease 2, such lid having downwardly flanged sides 3 which in the finally packed condition of the carton are integral with the sides 4 of the carton by means of links 5 produced by a number of slits 6 which are made continuous in the operation of breaking the links 5 and folding the resulting lid 1 upwards about the crease 2, one pair of the slits 6 being curved into the ends of the crease 2 as indicated at 6*a*. The lining material 7, which is preferably a cellulose sheet material is adhered to the lid part 1 and also to the corresponding vertical edge of the carton so that this lining 7 has to be torn when opening the lid. By this means the slots 6 do not destroy the airtightness of the packing before the carton is opened.

The cardboard blank which produces the carton shown has two pairs of side flaps 8 and three pairs of end flaps 9 the two outer pairs of which are overlapped and pasted together at their contacting faces. The flaps 9 are longer than the flaps 8 so that they can be folded at each end with their

free ends slightly overlapping before folding the flaps 8 over each other.

The form of lining appropriate to this method of folding which produces an airtight seal is that shown and consists of a sheet 10 of cellulose or other suitable airtight flexible material covering the cardboard blank up to the free ends of the flaps 9 but formed with trapezoidal edges 11 between adjacent flaps 9 and symmetrical creases or creasing lines 12 extending to the creasing lines 13 of the flaps 9 so that in the folding up of the carton each of the two end flaps 9*a* produced by the flaps 9 and creases 13 can be folded on to each other as shown in Fig. 7 and their outer faces pasted to the inner faces of the flaps 8*a* produced by the parts 8 and folded lining extending partly thereover to produce an airtight seal which is not effected by the broken line or slits 6.

It will be seen that the transverse crease 2 which is produced by the folds 14 and 15 in the centre end flap 9 and flaps 8 respectively of the blank are covered by lining so that when breaking the links 5 to open the lid 1 the lining covering the slits 6 is torn away. This can be effected by forcing a thumb nail through the slits 6 and the contiguous lining. The folds 14 and 15 are so located on the blank that they come into registration when sealing the blank, so that the flaps 8 appropriate to the wide sides of the carton have transverse creases 15 across them and the flap 9 between them has a transverse crease 14 at right angles to the creases 15, the inner ends of the creases 15 being continuous with the slits 6*a*.

It is preferred to cut a hole 16 in one side of the carton blank and to form the lining of transparent sheet material in order to expose the contents of the carton.

To enable cigarettes and the like to be readily extracted from the carton a cardboard or other flexible strip 17 can be laid freely upon or pasted to the base of the carton at its lower free end and folded upwards against a vertical edge of the carton so that it has a folded free upper end 18 which can be pulled outwards to partly raise cigarettes exposed through the opening provided by the raised lid. Alternatively or in addition this strip 17 can constitute a means of partly closing the said opening.

From the foregoing it will be understood that an embodiment of my invention comprises an outer casing composed of a cardboard or like blank creased along parallel lines to produce a parallel sided carton, flaps 8 and 9 produced as continuations of said creases composed of end flaps 9 longer but narrower than intermediate side flaps 8, a sheet of cellulose or like lining 10 pasted to said casing and formed with trapezoidal recesses 11 between the said end flaps 9 and united to said end flaps 9 between said recesses, characterized by a line of slits 6 intersecting the creases in the casing blank which are continuous with the edges of the central end flap extension 9 and bent at its ends laterally into continuation with two creases 15 adapted when the casing blank is folded into the carton to overlie a transverse crease 14 across the said central end flap extension 9.

I claim:

1. A lined airtight carton consisting of an outer casing composed of a cardboard blank creased along parallel lines to produce a parallel sided carton, flaps produced as continuations of said creases composed of end flaps longer but narrower than intermediate side flaps, a sheet of nonporous lining pasted to said casing and formed with trapezoidal recesses between the said end flaps and united to said end flaps between said recesses, a line of slits intersecting the creases in the casing blank which are continuous with the edges of one end flap extension and bent at its ends laterally into continuation with two creases adapted when the casing blank is folded into the carton to overlie a transverse crease across the said end flap extension, and an extracting strip secured within the carton so as to lie along one edge of the carton and having a free end close to said line of slits.

2. In the manufacture of a carton formed with a corner dispensing opening, a blank creased transversely parallel with and contiguous to its end edges and further creased transversely on two parallel lines at its median position said creases producing the vertical edges of the carton, a weakened line lying at right angles across said median pair of parallel lines and extending laterally beyond such pair of lines, a pair of upper end closure flaps in the blank one each side of said median pair of creases, a narrow flap in continuity with the vertical edge contained within said median pair of creases, a transverse crease in said narrow flap and creases at right angles thereto across said pair of flaps and in continuity with the said weakened line, the arrangement being that when the carton blank is folded the creases across said flaps are brought parallel with and overlying each other whereby a treble layer creased portion in continuity with the said weakened line is provided to constitute a hinge about which the lid formed by severing the carton on said weakened line is adapted to be folded.

CARL WILHELM HARTMANN.