

Jan. 2, 1940.

W. N. MacDONALD

2,185,469

SELF-SEALING WRAPPER

Filed Oct. 19, 1936

4 Sheets-Sheet 1

Fig. 1

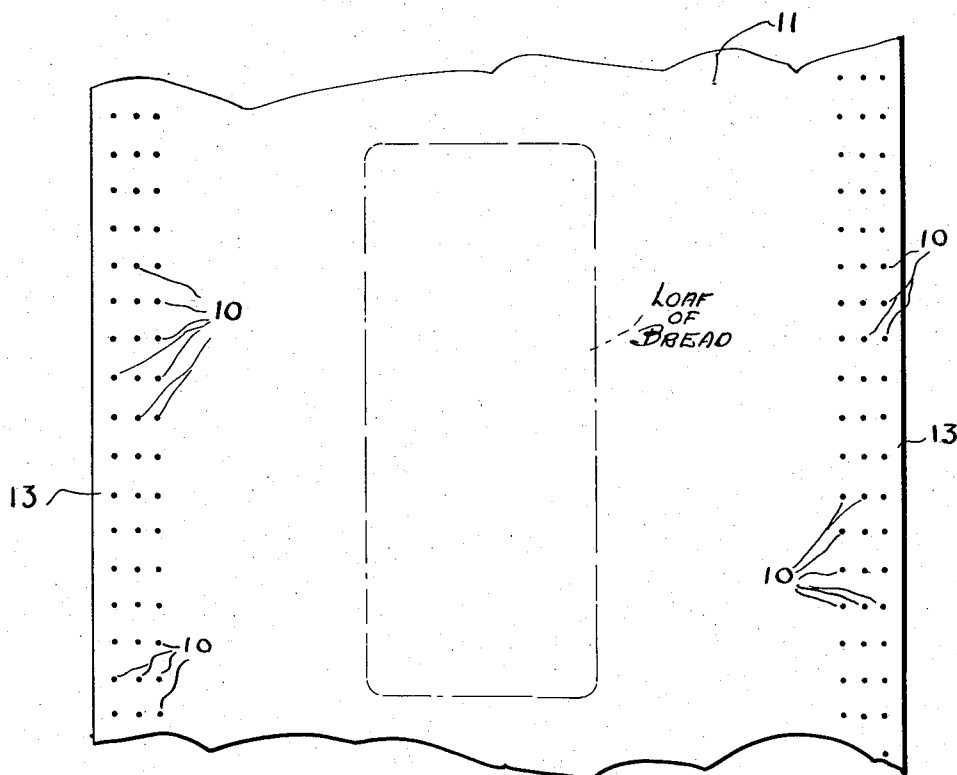
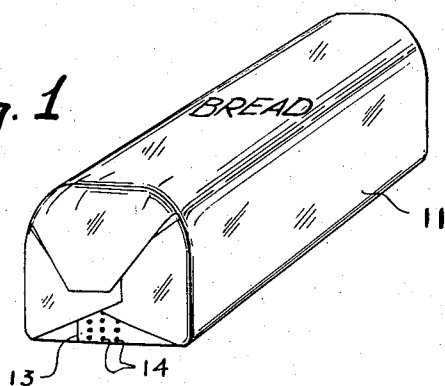


Fig. 2

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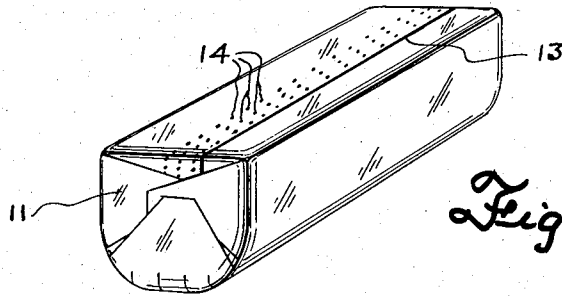


Fig. 1a

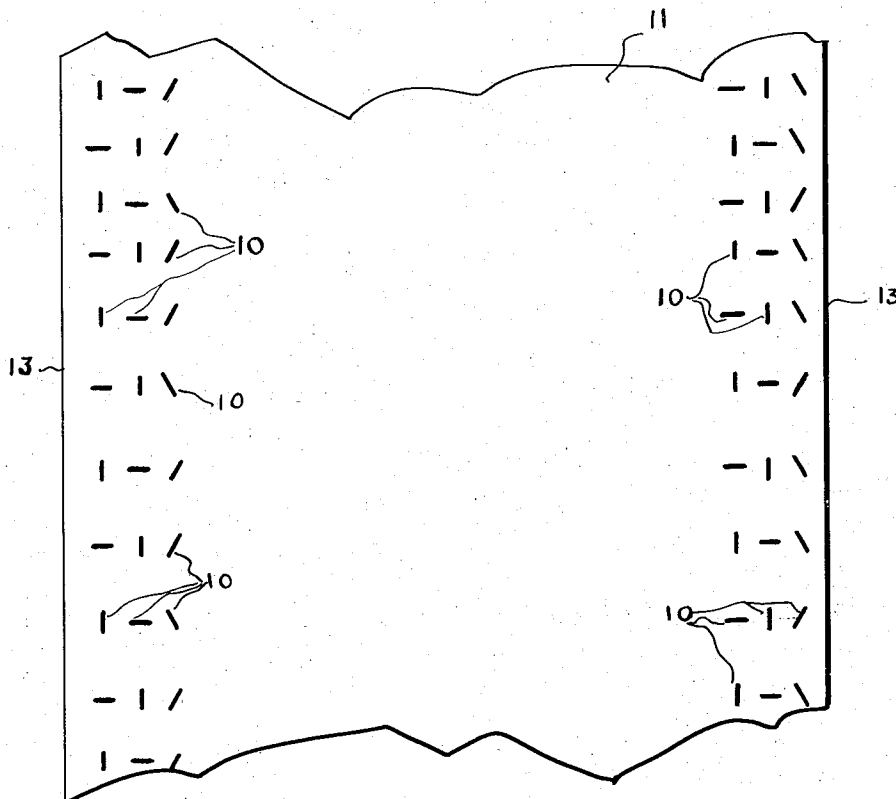


Fig. 3

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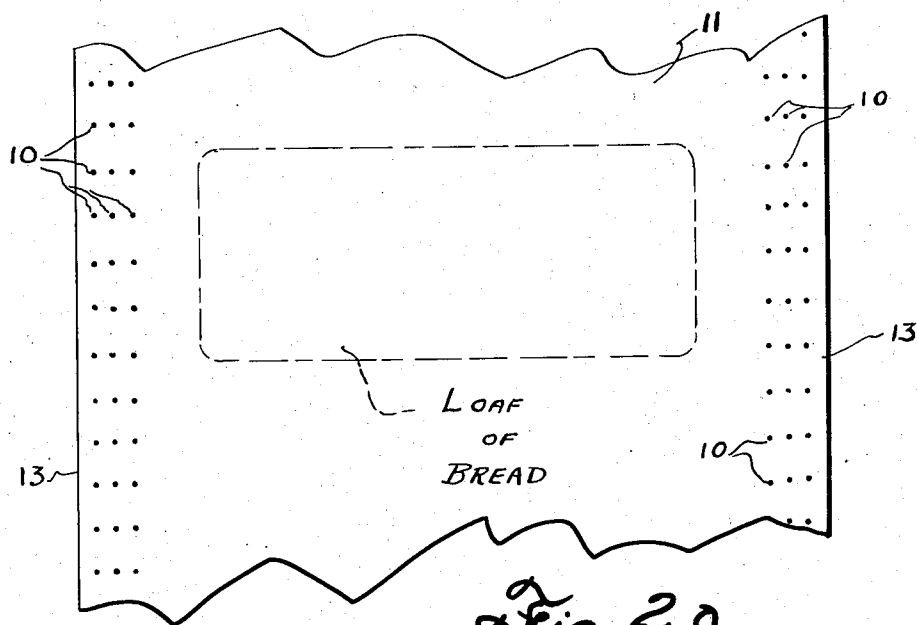
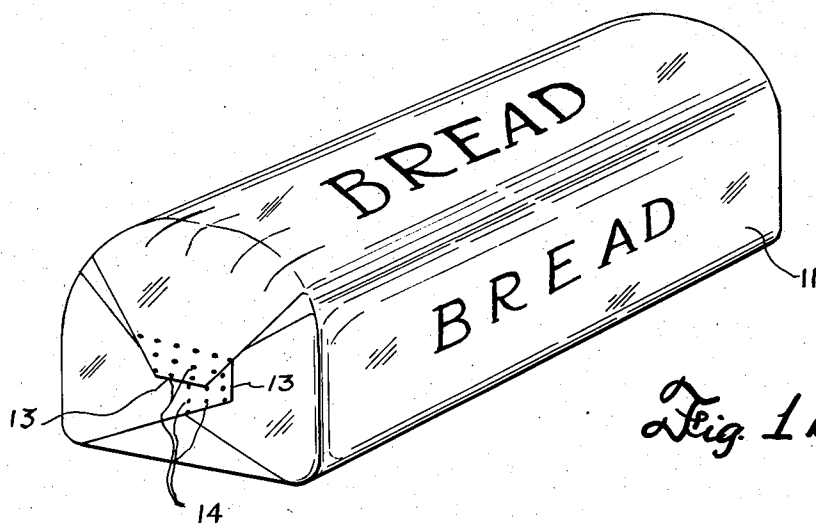
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4 Sheets-Sheet 4

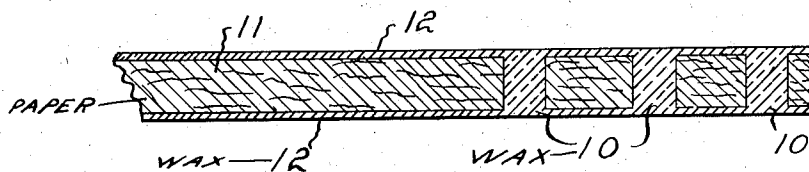


Fig. 4

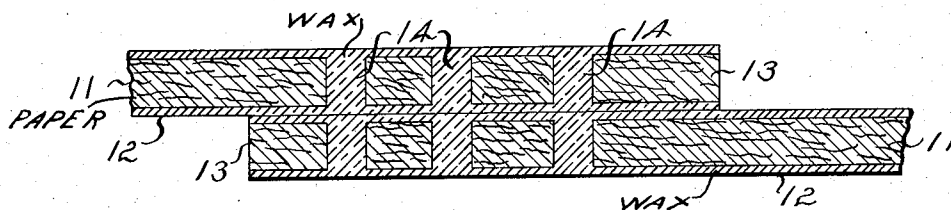


Fig. 4a

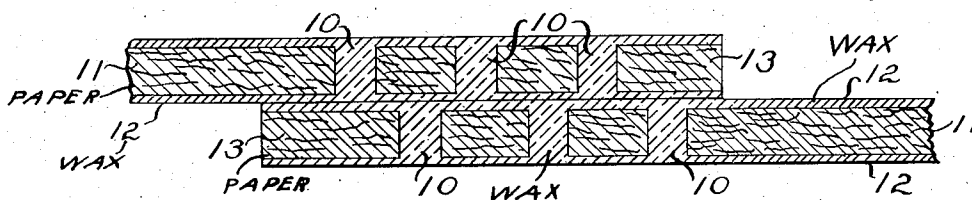


Fig. 4b

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UNITED STATES PATENT OFFICE

2,185,469

SELF-SEALING WRAPPER

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Application October 19, 1936, Serial No. 106,337

1 Claim. (Cl. 229—87)

This application relates to self-sealing wrappers of waxed paper or the like.

A self-sealing wrapper, as commonly known, comprises a sheet of waxed paper, namely, a sheet of paper having surface coatings of wax, folded over the object to be wrapped, such as a loaf of bread, so that the edges of the wrapper are lapped, and the wax coating on the surface of one lap is intended to be fused to the engaged surface of the adjacent lap to form a sealed wrapper.

For various reasons which need not here be enumerated, objections have been found to wrappers commonly claimed to be self-sealing wrappers, principally on the grounds that it is difficult to produce wrappers which can be relied upon to seal themselves in every instance when run through automatic high speed wrapping machinery, such as Hayssen, Standard, or Battle Creek machines.

It is observed here that unless such reliance can be had, the use of so-called self-sealing wrappers in automatic high speed wrapping machinery is not encouraged, for the reason that the wrappers around objects coming out of the wrapping machine will not in every case be sealed satisfactorily.

By my invention I have provided a self-sealing wrapper which can be produced easily and with well-known methods of producing waxed paper in sheets and rolls suitable for use in automatic wrapping machinery, with the paper being so constructed that the user thereof may rest assured that every wrapped object coming out of the wrapping machine will be wrapped in a sealed wrapper, all without the necessity for changing in any way the operations of wrapping or the functions of the wrapping machines.

For an understanding of my invention reference should be had to the appended drawings disclosing embodiments of the same. In these drawings,

Fig. 1 shows a loaf of bread wrapped in a "Hayssen" wrapping machine with the wrapper comprising a self-sealing wrapper of the invention;

Fig. 1a shows the wrapped loaf of Fig. 1 in the obverse position, the lapped sealed edge of the wrapper being visible;

Fig. 1b shows a loaf of bread wrapped in a "Standard" or "Battle Creek" wrapping machine with the wrapper comprising a self-sealing wrapper of the invention;

Figs. 2 and 2a show fragments of the strips as they go into "Hayssen" or "Standard" or "Bat-

tle Creek" wrapping machines and indicate the structural details that make my wrapper a self-sealing wrapper;

Fig. 3 shows a modification of the strip;

Fig. 4 shows in cross section and to greatly enlarged scale strips of self-sealing wrapper stock;

Figs. 4a and 4b show in cross section lap joints formed by the use of strips of the character disclosed in Fig. 4.

The wrapper of my invention comprises little more than a sheet of waxed paper similar in quality, type, and size to those now used. These wrappers are generally formed in rolled sheets which are fed into automatic wrapping machines such as Hayssen, Standard, or Battle Creek machines, where they are cut off into unit lengths and the cut lengths are then folded and wrapped about the object to be wrapped, such as the loaf of bread herein shown, and in wrapping the sheet about the loaf the edges of the sheet are lapped over each other to form a lap seal.

In the use of self-sealing wrappers, both those presently known and those of my invention, the lapping edges of the strip are heated during the wrapping operation with the intention of having the wax coatings on these lapping edges fuse to one another to seal the edges to each other and thus form a self-sealed wrapper. For various reasons this practice does not always produce a self-sealed wrapper in the case of wrappers now known. After an intensive and prolonged study I have discovered that a very simple way to produce a self-sealing wrapper is to provide in the lapping edges quantum of wax in addition to those carried on the wax sheet as surface coatings, and these excess quantum of wax, when heated in the wrapping machine, perform the function of fusing to one another whereby a seal is automatically produced. While in the preferred embodiments these excess quantum are formed in each of two adjacent laps, it will readily be understood that if desired these excess quantum may be formed in one lap only, to fuse with surface wax of the other lap.

In the strip of Figs. 2 and 2a these excess quantum are in the nature of wax plugs filling perforations in the strip. These perforations are produced in the strip before waxing, so that when the strip is passed through the waxing bath and becomes coated with wax on its surface, the perforations in addition become filled with wax plugs. When the edges are lapped over each other the wax plugs of one lap will register with those of the other and

fuse to form wax rivets 14, all as indicated in Figs. 4 and 4a. Where the plugs do not register with one another, as might very well be the case, the plugs of one lap might fuse with the surface coatings of the other, all as indicated in Fig. 4b, which shows the plugs 10 fused to surface coatings 12 because they do not register with one another.

To increase the possibility that the plugs of one lap will register with those of the other so as to form rivets of the character indicated in Fig. 4a, the perforations need not be placed in even rows as shown in Fig. 2 but might be placed in staggered and scattered arrangements as shown in Fig. 3 and it will be observed that when the edges of the strip of Fig. 3 are lapped some of the plugs of one lap are bound to register with some of the plugs of the other lap, with the result that wax rivets of the character of Fig. 4a will necessarily be formed, even though some of the plugs of one edge do not register with some of the plugs of the other edge; these non-registering plugs will then fuse to the surface coatings as shown in Fig. 4b.

It has been discovered that in some instances some of the perforations do not become filled with wax and remain unfilled; when these register with other unfilled perforations, as is undoubtedly the case in many instances, the in-

terior of the wrapper may ventilate itself through these perforations. This is of advantage when the wrapper is used with foods which should be aerated when wrapped, and a notable instance of this is the bread loaf shown.

This feature may be provided by providing rows of perforations at each edge of the wrapper strip far enough away from that edge to avoid being lapped by the other edge when the wrapper is folded around the loaf—and by making certain that such rows of perforations are left unfilled with wax—so that they will provide ventilating holes.

Now having described the self-sealing wrapper shown herein in its various modifications, reference will be had to the claim which follows for a determination of the protection sought by this application.

I claim:

A self-sealing wax coated paper wrapper comprising a sheet of wax coated paper folded over the object to be wrapped and having its edges lapped, with the laps having a multiplicity of registering perforations filled with wax integral with the wax of the coating, these wax fillings of the holes forming integral wax rivets which bond to one another and to the coating and rivet the laps to each other.

WILLIAM NIAL MACDONALD.