March 11, 1969 R. C. WEEKS 3,432,310

BREAD PACKAGE

Filed Feb. 13, 1968 Sheet 1 of 2

FIG. 1.

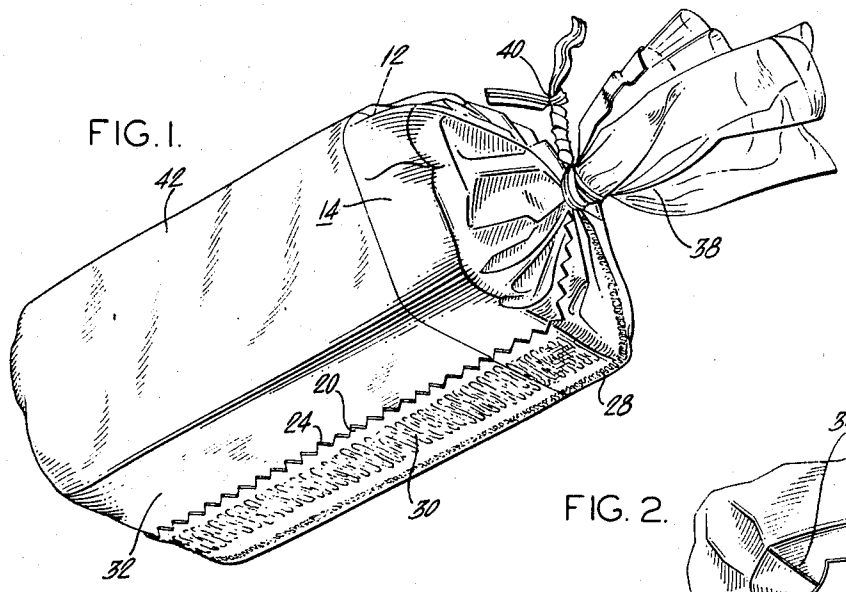


FIG. 2.

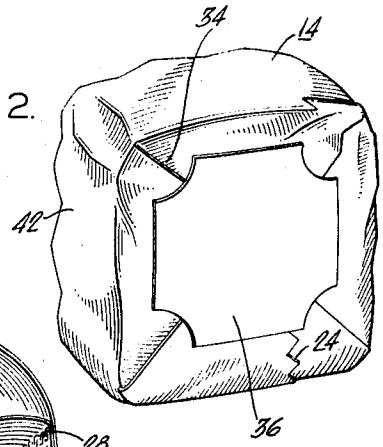


FIG. 3.

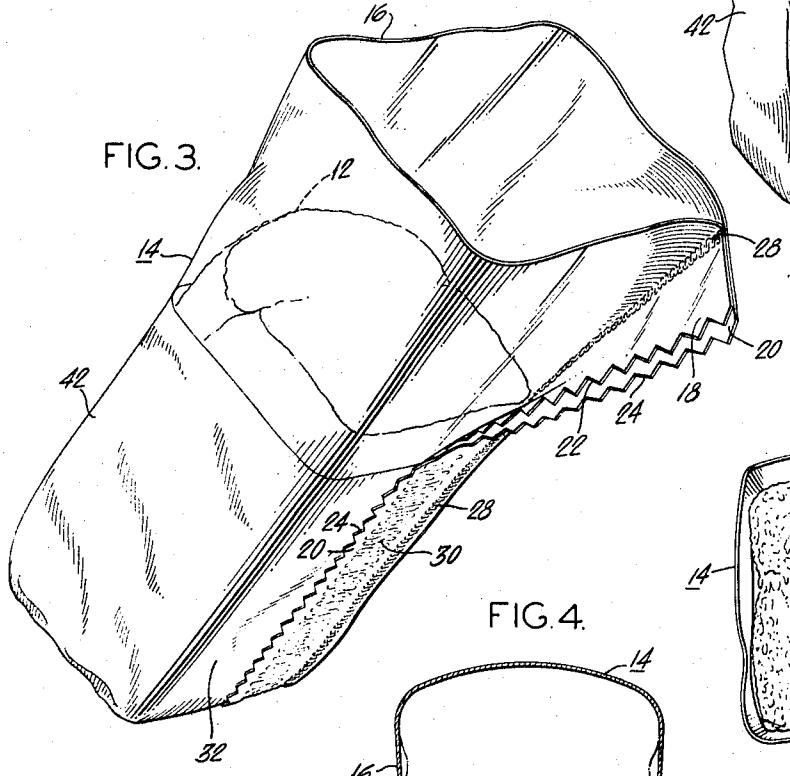


FIG. 4.

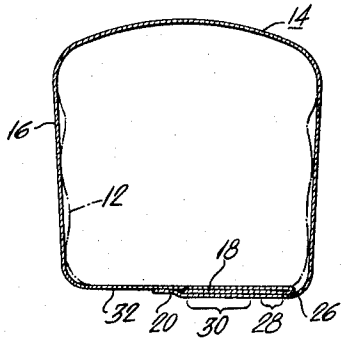
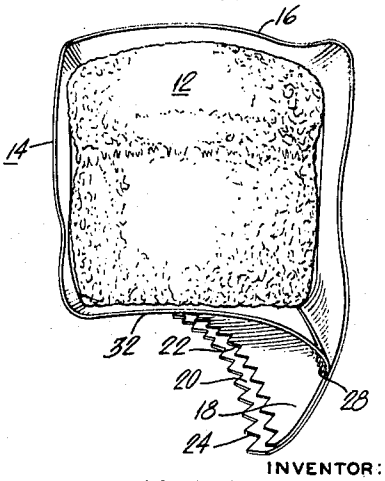


FIG. 5.



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BREAD PACKAGE

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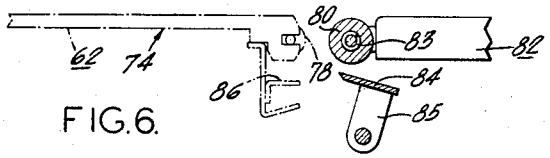


FIG. 6.

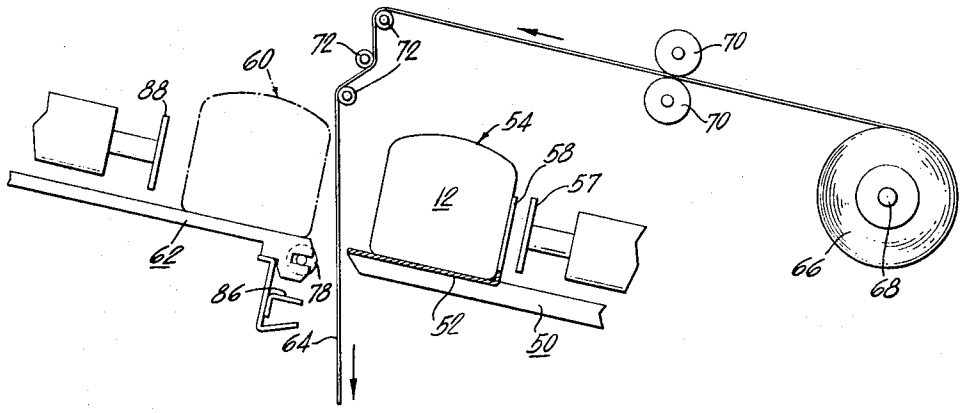


FIG. 7.

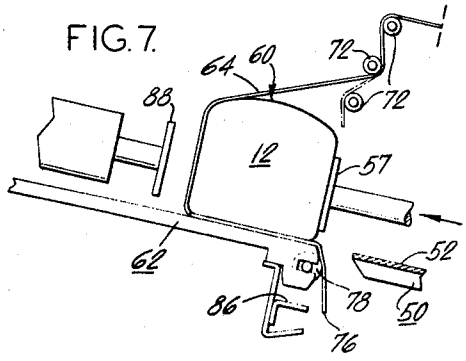


FIG. 8.

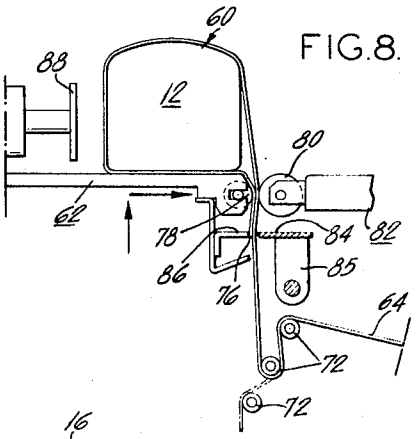


FIG. 9.

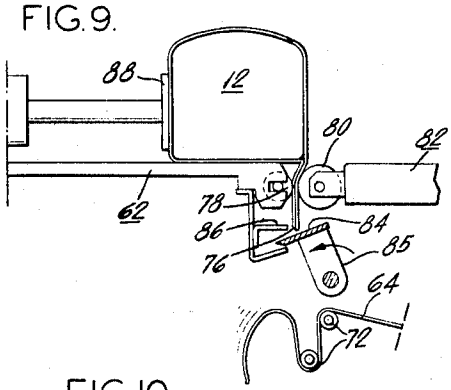
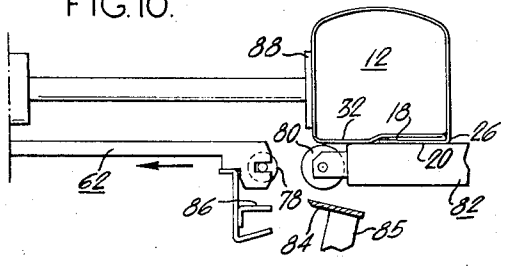


FIG. 10.



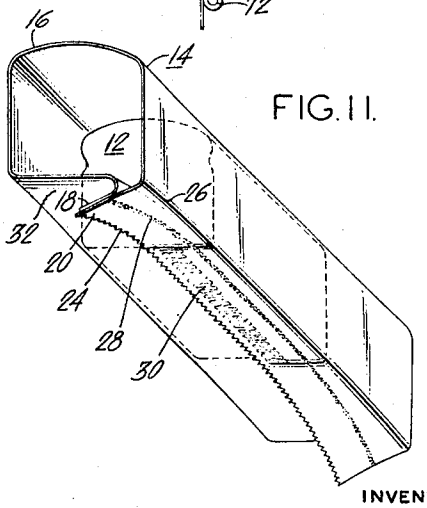


FIG. 11.

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BREAD PACKAGE

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U.S. Cl. 99—172 4 Claims
Int. Cl. B65b 25/16; B65d 65/00, 75/00

ABSTRACT OF THE DISCLOSURE

A bread wrapper and a method and apparatus for forming the same characterized by a wrapped, tightly fitting and tightly closed end-tied packaged which when opened expands at the open end to permit withdrawal and replacement of bread slices but which may be reclosed without affecting the tight wrapping of the loaf. The wrapper is characterized by a fin seal extending longitudinally along the overlapped side edge portions thereof, spaced between the line of overlap and the wrapper side edges. A subsequently formed conventional overlap seal of the overlapped edge portions provides a tightly wrapped package. The combination of the fin seal and overlap seal permits an expansion of the wrapper open end proportional to the spacing of the fin seal from the line of overlap. The present method of forming such a wrapper permits the formation of the essentially bag-shaped wrapper directly on the loaf to insure a tight package. The present apparatus provides a means for carrying out the method by a simple modification of conventional bread wrapping machinery.

The present invention relates generally to the packaging of food stuffs in recloseable plastic sheet packages and relates more particularly to the wrapping of bread loaves in air-tight recloseable packages.

Bread packaging techniques have in recent years been changing markedly due to the strong consumer preference for recloseable packages. Of particular note is the wide acceptance of bread packed in polyethylene bags, the open end of the bag being secured by a twist tie or other device to form what is known in the trade as a "pony tail package." The bags are especially attractive because of their recloseability and the ease with which the bread may be withdrawn and replaced. In these respects, the bags are a substantial improvement over the standard wrapped package which is difficult to reclose and which is not adapted to replacement of bread slices.

A serious disadvantage, however, of the bag type package is the loose manner in which the bread is held by the package due to the fact that the bread is placed in the bag after the bag as been formed. The bag accordingly provides little or no support for the bread and permits deformation of the bread loaf and separation of slices. The bagged bread is thus susceptible to damage during handling prior to purchase and in addition provides a rather sloppy looking package in contrast to the tightly bound wrapped packages.

In order to realize the advantages of both the bag package and the wrapped package, some premium priced loaves are packaged in an inner film wrap which holds the bread in a stiff configuration, and an outer loose fitting bag having a readily recloseable pony tail end. The expense of such a dual package is, however, too high for any but the premium priced loaves and the removal and replacement of the bread is necessarily more involved in view of the double package.

In a recent development, an attempt was made to provide the advantages of the recloseable bag with those of the tight bread securing wrap. This was effected by wrapping a film completely around a loaf, heat sealing the overlapped film along one side of the loaf with the seal extending only to the loaf ends. One end of the wrapped film was then closed in a conventional gusset end and the other end closed with a twist tie to form a bag type pony tail. In such a package, the bread loaf is tightly bound and supported by the wrapped film while the pony tail end may be easily opened and closed to permit removal of the bread slices. Since the film seal extends only along the length of the loaf, the pony tail end may be widely opened to permit easy removal and replacement of the bread.

Even this arrangement, however, although incorporating the desirable aspects of both the bag package and the wrapper type package, suffers from a serious drawback. Due to the fact that the overlapping film is sealed only to the end of the bread loaf, there is a space between the film edges outwardly of the loaf at the pony tail end through which air, insects or foreign matter may pass into the package regardless of the tight seal at the pony tail band. While this difficulty might be alleviated by continuing the overlap seal up the end of the wrapper, the open end of the package would then have an area exactly that of the bread slices and removal or replacement of the bread would be extremely difficult.

In the present invention, an arrangement is provided utilizing a wrapped film package with a bag type tie end which provides a tight seal along the tie end but which permits an opening thereof to freely discharge or admit bread slices. This is accomplished by providing an inner fin seal extending the full length of the wrapped film and joining the overlapped film edges along a line spaced from the line of overlap. A later formed conventional pressure seal provides a tight packaging of the loaf, while the fin seal provides a seal extending through the tie end to prevent air penetration and contamination of the bread and also permits an expansion of the tie end for ease in removing and replacing bread slices. By the method of the present invention the package described can be formed directly on the bread loaf in a relatively simple manner. The present apparatus discloses a manner in which conventional bread wrapping machinery can be readily modified to carry out this method.

In view of the above it can be understood to be a first object of the present invention to provide a wrapped bread package having a recloseable tie end which is adapted to expand to facilitate the removal and replacement of bread slices.

A further object of the invention is to provide a bread package as described which may be easily and economically applied and which has an attractive appearance.

Another object of the invention is to provide a method and apparatus for forming a bread wrapper as described which utilize a conventional bread wrapping machine with only slight modifications.

Additional objects and advantages of the invention will be more readily apparent from the following detailed description of an embodiment thereof when taken together with the accompanying drawings in which:

FIG. 1 is a perspective view showing a bread loaf sealed in a package in accordance with the present invention;

FIG. 2 is a partial perspective view showing the closed or gusset end of the package loaf shown in FIG. 1;

FIG. 3 is a perspective view showing the bread loaf package of FIG. 1 in an opened condition to permit the removal of bread slices therefrom;

FIG. 4 is a transverse sectional view taken through the package loaf of FIG. 1 and showing the relative locations

of the fin seal and overlap seal of the film wrapper;

FIG. 5 is a view looking into the open end of the loaf in the condition shown in FIG. 3;

FIG. 6 is a schematic view showing the first step in the method of applying the present package utilizing a slightly modified commercial bread wrapping machine;

FIG. 7 is a partial view of the apparatus shown in FIG. 6 showing the manner in which the bread loaf is moved onto the lifter table to start the wrapping operation;

FIG. 8 is a view similar to FIGS. 6 and 7 showing the lifter table in the raised position and the manner in which the fin seal is formed;

FIG. 9 is a view similar to FIG. 8 showing the manner in which the wrapping film is cut during the formation of the fin seal;

FIG. 10 is a further view similar to FIGS. 8 and 9 showing the manner in which the partially wrapped loaf is moved from the lifter table; and

FIG. 11 is a perspective view showing the wrapped bread loaf after formation of the fin seal and overlap seal but before the formation of the gusset end and the gathering and tying of the pony tail end.

Referring to the drawings and specifically FIGS. 1–5 thereof, a bread loaf **12** is shown wrapped in a package **14** in accordance with the present invention formed from a film of plastic heat-sealable material such as polyethylene. The package comprises a single sheet of film **16** which in its lengthwise dimension extends substantially beyond the ends of the bread loaf in each direction for reasons which will presently be obvious. The film is wrapped transversely around the bread loaf and is of sufficient width to provide substantial overlapping side edge portions **18** and **20** terminating respectively in adjacent side edges **22** and **24**. When the film is tightly wrapped transversely about the loaf, the overlap of the side edge portions **18** and **20** starts along a line designated as the line of overlap **26**, which is seen most readily in FIG. 4.

Spaced approximately midway between the line of overlap **26** and the side edges of the overlapped side edge portions is a so-called fin seal **28** which extends longitudinally the full length of the overlapped side edge portions. The fin seal is a narrow seal, preferably a heat seal having a width of approximately $\frac{3}{16}$". An overlap seal **30** is provided between the fin seal and the side edges of the overlapped side edge portions to secure the overlapped portions to the film panel **32** covering the bottom of the loaf. The overlap seal **30**, in contrast to the fin seal, extends longitudinally only along the length of the loaf, terminating at the loaf ends. The overlap seal **30** is preferably a relatively broad heat seal which might be as much as 1" in width and serves to secure the film in a tight wrap transversely about the loaf, joining the overlapped side edge portions to each other and to the bottom panel **32**.

At one end of the package as illustrated in FIG. 2, the extending film end portion is closed in a conventional gusset end seal **34** and includes a conventional paper end label **36** which serves to secure the gusset as well as providing a means for carrying price or advertising indicia. The opposite end of the bag is gathered in a pony tail **38** which is secured by the twist tie **40** in the same manner as conventional bag packages.

In the illustrated embodiment, a waxed paper overwrap **42** is provided upon which the manufacturer's label may be printed although this is an optional feature. Indicia may alternately be printed directly on the film package as is commonly done with the polyethylene bag bread packages.

It can be seen from FIG. 1 that the present package provides an air-tight seal of the bread loaf even at the pony tail end in view of the fin seal which prevents air, dust or foreign matter from entering the package between the end of the loaf and the twist tie **40**. While in the illustrated embodiment of the invention the fin seal extends the full length of the package, it is obvious that to accomplish a sealing of a full loaf, the fin seal need only extend from the end of the overlap seal at the bread loaf end to the end of the package.

In addition to the tight sealing of the bread loaf when closed with the twist tie **40** as shown in FIG. 1 the present package permits an expansion of the open end to facilitate the withdrawal and replacement of bread slices as shown in FIGS. 3–5. The open end of the package may be expanded outwardly of the end of the overlap seal in an amount equal to twice the spacing of the fin seal from the line of overlap. Since the overlap seal maintains a tight transverse support of the loaf, this expansion feature does not affect the tightness of the package and does not allow the loaf to collapse as does the conventional bag packages. As the loaf is used and the quantity of bread stored in the package becomes smaller, it is possible to open a portion of the overlap seal to separate the overlapped side edge portions from the bottom panel, thereby increasing the length of the package subject to expansion. It is for this reason desirable to have the fin seal extend the full length of the package to insure a complete reseal after the loaf has been depleted and the overlap seal partly opened.

The preferred method of wrapping bread in the present package is shown in FIGS. 6–10 wherein a schematically illustrated apparatus for carrying out the wrapping method is shown. The apparatus, essentially an American Machine & Foundry Co. infra-red wrapping machine model 3–175, as shown in FIG. 6 includes an inclined infeed table **50** carrying a bread support tray **52** onto which a freshly baked bread loaf is loaded as shown at **54**. A pusher **57** on the table **50** is adapted to pass through an opening **58** in the tray **52** to move the bread loaf to the position **60** shown in broken lines on the lifter table **62**. A sheet of packaging film **64** is led from a large supply roll **66** on a suitable rotatable mounting **68** between feed rolls **70** and guide rolls **72** and passes between the table **50** and lifter table **62**.

As shown in FIG. 7, the movement of the loaf from the table **50** onto the lifter table **62** by the pusher **57** displaces the film sheet **64**, wrapping the sheet halfway around the bread loaf. The retraction of the pusher **57** and the pivoting of the lifter table into the raised position shown in FIG. 8 and in broken lines in FIG. 6 at **74** completes the wrapping of the sheet **64** transversely around the bread loaf. The sheet is at this point overlapped with the lead edge **76** thereof, the overlapped portions extending between the roller **78** journaled on the lifter table and the roller **80** of take-off table **82**. The roller **80** includes an internal cartridge heater **83** including a thermal sensing element for heat control. As shown in FIG. 8, the lifter table **62** is then moved toward the roller **78** thereby gripping the overlapped film between roller **78** and heated roller **80** to form the fin seal **28** described above. During formation of the fin seal, as shown in FIG. 9, a pusher **88** on the lifter table **62** is actuated to move the loaf toward the take-off table **82** and at the same time the knife **84** on pivotally mounted knife bar **85** is rotated past the shear bar **86** on the lifter table **62** below the roller **78** to shear the film sheet adjacent the lead edge **76**.

Upon completion of the film cut-off step and the fin sealing operation, the lifter table **62** is moved back to its initial position and the pusher **88** advances the bread loaf onto the take-off table **82**. The loaf then passes to a conventional heat sealing conveyor (not shown) on which the overlap seal **30** is applied. The overlapping side portions **18** and **20** of the package are folded upwardly against the bottom panel **32** of the loaf wrapper as the loaf is advanced across the roller **80** and the pressure of the loaf on a bar type conveyor heater provides the overlap seal only along a longitudinal face of the loaf. The loaf following the application of the overlap seal has the appearance shown in FIG. 11 wherein the loaf is securely wrapped transversely but with the package ends incomplete. To complete the package, one end of the film

is formed into the conventional gusset end shown in FIG. 2, and the opposite end is formed into the pony tail with the twist tie, both operations being performed with conventional packaging equipment.

The method and apparatus for wrapping a bread loaf illustrated in FIGS. 6–10 is conventional with the exception of the application of the fin seal. The modification of the American Machine and Foundry Co. machine identified above involves only the installation of the cartridge heater **83** in the roller **80**. The fin seal may thus be provided without extensively modifying the machine and without increasing the wrapping time required per loaf.

Although in the illustrated embodiment of the invention the line of overlap **26** occurs at a bottom corner of the loaf, it is obvious that while this is a convenient construction in view of the operation of the illustrated apparatus, the line of overlap could be located at any other position. For the best appearance of the package, the fin seal and overlap seal should be on the bottom of the loaf as illustrated. The fin seal may of course be formed by other means than the illustrated heated roller, for example by a heated plate, hot wire, high frequency and similar methods commonly practiced in this art.

I claim:

1. A resealable wrapper for a bread loaf or similar article comprising a sheet of wrapping material, said sheet extending circumferentially around the bread loaf and having side edge portions overlapping in parallel edge-to-edge relation, a fin seal joining said side edge portions along a line spaced between and parallel to the line of overlap of said side edge portions and the side edges, said overlapping side edge portions being folded back against the sheet panel covering a face of the loaf, an overlap seal between said fin seal and the sheet side edges securing said side edge portions to said sheet panel to transversely secure the loaf, the end edges of said sheet extending substantially beyond the ends of the loaf, one end edge being folded in a gusset end seal, the other end edge being gathered and tied to form a resealable end closure.

2. A wrapper as claimed in claim **1** wherein said fin seal extends the full length of said sheet.

3. A wrapper as claimed in claim **1**, wherein said sheet is formed of a heat sealable material and wherein said fin seal and overlap seal are heat seals.

4. A method of packaging a loaf of bread or similar item with a wrapper material comprising the steps of: wrapping a sheet of the material circumferentially around the bread loaf with both side edge portions of the material extending substantially beyond the loaf in parallel overlapping edge-to-edge relation, the end edges of said sheet extending substantially beyond the ends of the loaf; sealing the longitudinal overlapping side edge portions of the sheet along a line spaced between the line of overlap of the side edge portions and the sheet edges; folding the overlapped edge portions of the wrapper against a longitudinal wrapped face of the bread loaf and sealing the overlapped portions thereagainst to tightly secure the bread loaf; folding and sealing the extending wrapper at one end of the loaf to form a gusset end seal; and gathering and tying the opposite wrapper end to form a resealable end closure.

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U.S. Cl. X.R.

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