

May 10, 1949.

W. T. BURBANK

2,469,366

METHOD OF WRAPPING AND LABELING RECEPTACLES

Filed Sept. 8, 1947

3 Sheets-Sheet 1

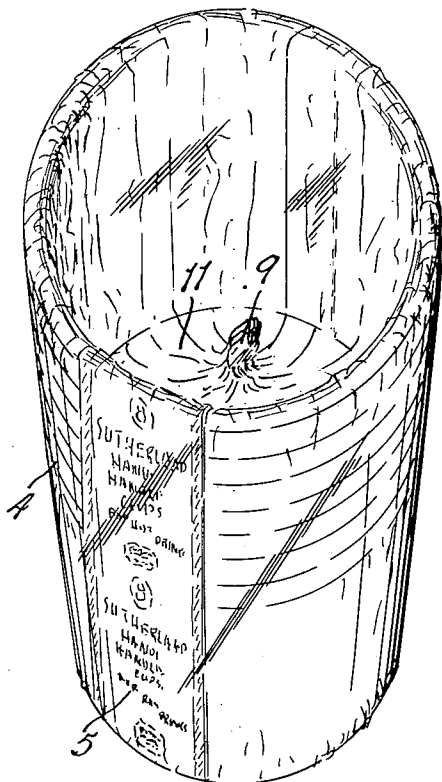


FIG. 1

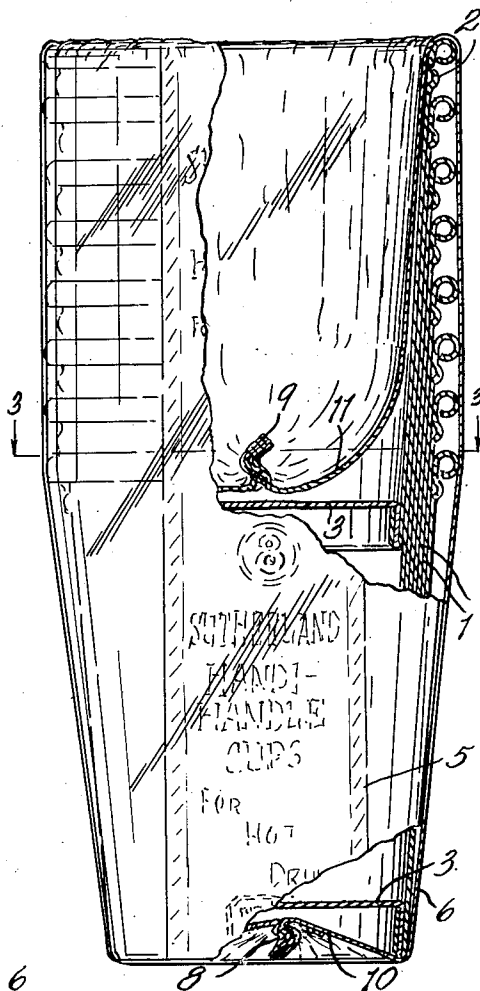


FIG. 2

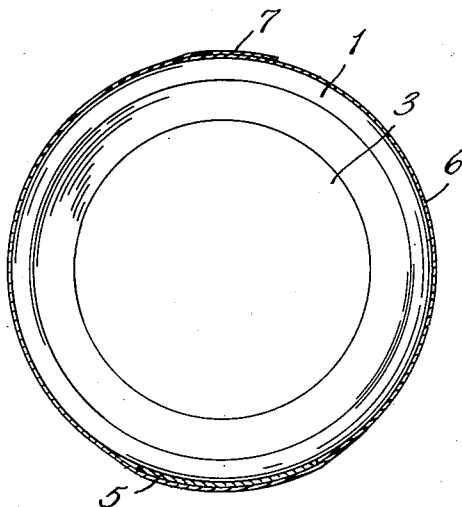


FIG. 3

INVENTOR.

Wendell T. Burbank

BY

Otto A. Earl

ATTORNEY

May 10, 1949.

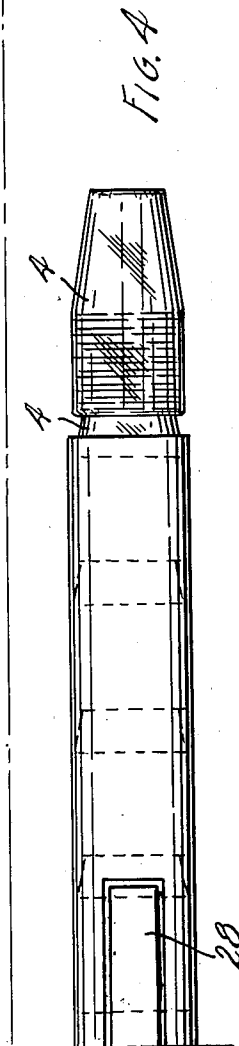
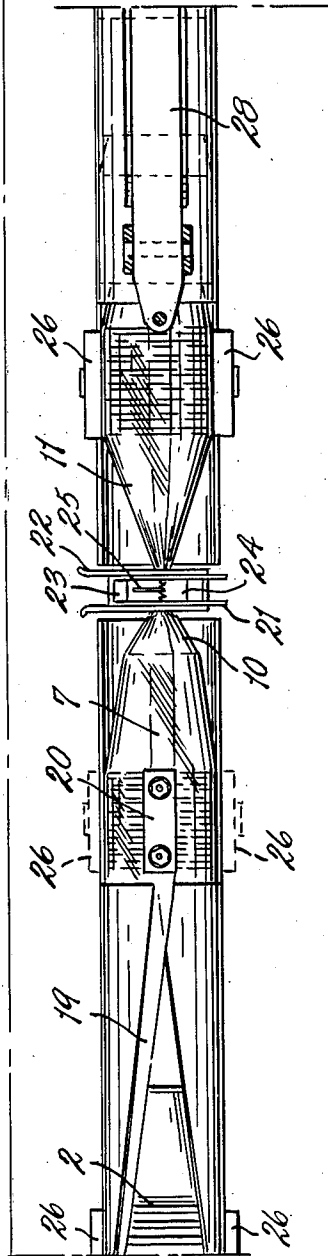
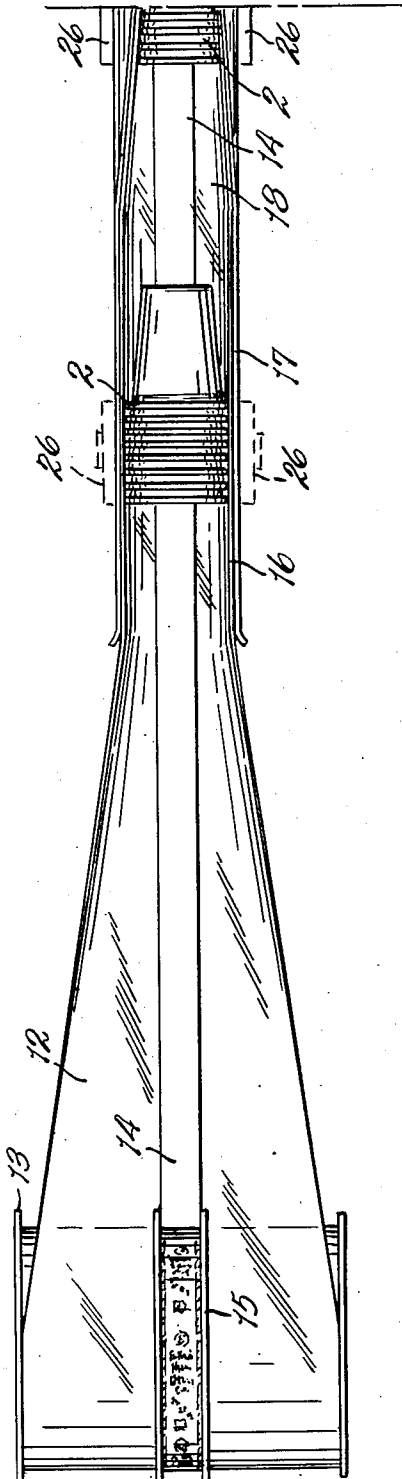
W. T. BURBANK

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METHOD OF WRAPPING AND LABELING RECEPTACLES

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3 Sheets-Sheet 2



INVENTOR.

Wendell T. Burbank

BY

Otis A. Earl
ATTORNEY

May 10, 1949.

W. T. BURBANK

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METHOD OF WRAPPING AND LABELING RECEPTACLES

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3 Sheets-Sheet 3

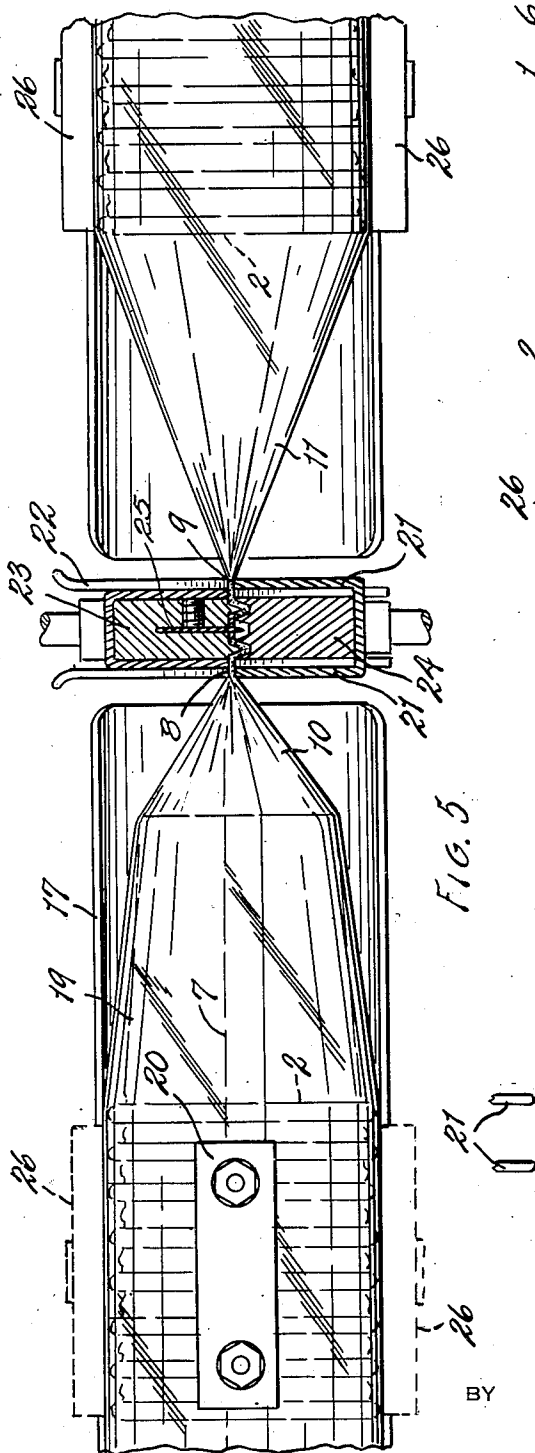


FIG. 5

BY

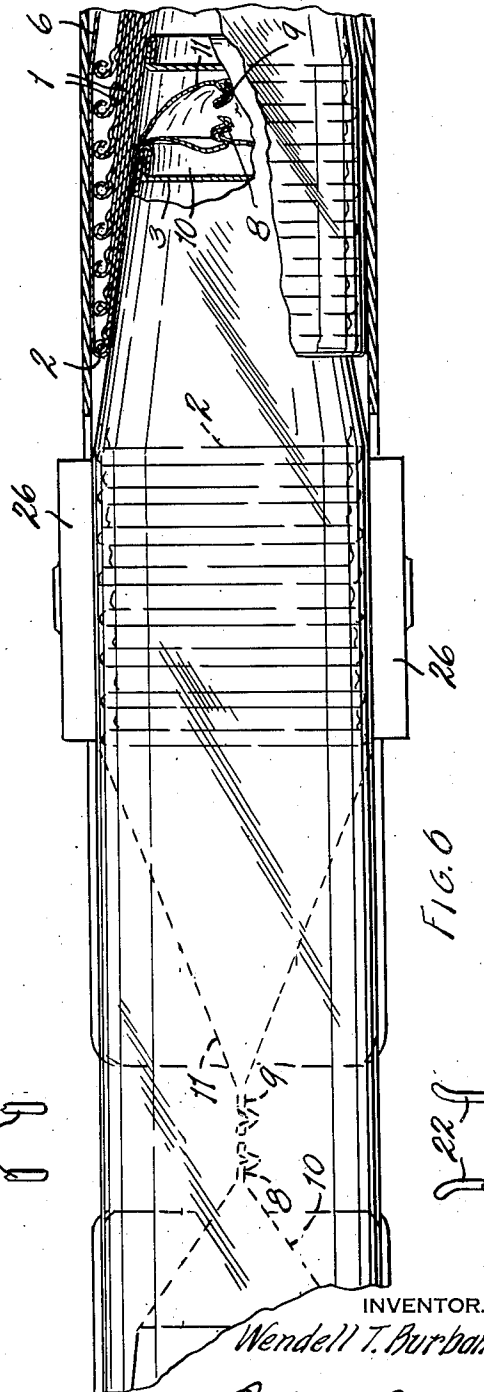


FIG. 6

INVENTOR.

Wendell T. Burbank

Otto A. Earl
ATTORNEY

UNITED STATES PATENT OFFICE

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METHOD OF WRAPPING AND LABELING
RECEPTACLESWendell T. Burbank, Three Rivers, Mich., as-
signor to Sutherland Paper Company, Kalamazoo, Mich., a corporation of Michigan

Application September 8, 1947, Serial No. 772,664

14 Claims. (Cl. 93—3)

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This invention relates to method of wrapping and labeling receptacles.

The main objects of this invention are:

First, to provide a method of wrapping and labeling receptacles such as paper cups which results in a wrapper which effectively encloses and protects the cups and at the same time permits the stacking of a plurality of wrapped groups of cups.

Second, to provide a method of wrapping cups which may be practiced by machinery, thereby avoiding the handling of the unwrapped cups.

Third, to provide a method of wrapping groups of nested cups and at the same time applying labels thereto.

Fourth, to provide a method which enables a very large output or may be very expeditiously practiced.

The manner of carrying out the method of this invention is clearly illustrated in the accompanying drawing, in which:

Fig. 1 is a perspective view, somewhat conventionalized, of a package of nested cups wrapped by the method of the invention.

Fig. 2 is a fragmentary side view partially in vertical section and partially broken away.

Fig. 3 is a horizontal section on a line corresponding to line 3—3 of Fig. 2.

Fig. 4 is a top plan view of parts of an apparatus designed for the practice of the method of my invention, parts being shown conventionally and the several steps of the method being illustrated.

Fig. 5 is an enlarged fragmentary view illustrating the steps of side sealing the wrapping material and end sealing and severing.

Fig. 6 is a fragmentary plan view illustrating the wrapper tucking step in relation to the end sealing and severing step.

The parts of the apparatus which may be used in practicing the method illustrated are more or less conventionalized in the drawing. The accompanying drawing illustrates the method as applied to the wrapping of groups of paper cups 1, the group of nested cups being generally designated by the numeral 2. There are eight cups in each group. These cups have inset bottoms 3 and the method is well adapted to provide suitable wrappers for cups having inset bottoms. A wrapped package or group of cups is designated generally by the numeral 4 in Fig. 1.

The method is well adapted for applying labels at the same time the wrapper is applied. The label is indicated at 5 in the form of a strip label with repeated indicia thereon, the legend here

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being "8 Sutherland Handi-Handle cups for hot drinks."

The wrapping material 6 is of the heat-sealable transparent type; it is wrapped around the group of cups and the overlapping longitudinal edges are heat-sealed at 7 for at least a portion of the length of the package. The ends of the wrapper are heat-sealed at 8 and 9. The heat-sealed end 10 of the wrapper is tucked into the recessed end of the bottom cup of the group while the heat-sealed end 11 is tucked into the top cup of the group or stack of cups. It will be observed that the tucked-in ends of the wrapper are completely closed so that dirt cannot enter the top cup. The bottom of the stack is also protected.

In the accompanying drawing the web or strip of wrapping material 12 is supplied from a spool 13 while the label strip 14 is supplied from a spool 15. The label strip is delivered on to the wrapping strip facing downwardly so that the label extends vertically of the finished package and is visible through the transparent wrapping material 12, which may be of cellophane or other heat-sealable plastic wrapping material.

The groups of nested receptacles 2 are assembled preferably by mechanical means but as such assembling means are known I have not attempted to illustrate the same.

The wrapping strip is conformed into an upwardly facing channel section at 16 and the groups of cups are fed thereto or placed thereon while the strip is supported by the channeled slideway 17. The groups of nested cups are placed upon the conformed strip in spaced relation so that there are substantial reaches 18 of wrapping material between the groups of cups. The wrapping material and cups are desirably fed with a step by step movement and as the groups of cups are advanced from the initial position the wrapper is wrapped around the groups of cups as indicated at 19 to bring the edges of the wrapper into overlapping relation as shown at 7. These overlapping edges are heat-sealed for at least a portion of the length of the package by the heat-sealer indicated at 20. While the groups are in this sealing position they are preferably at rest and the portions or reaches of the wrapper between the groups are puckered and collapsed by the puckering and collapsing means indicated at 21 and 22. The puckered and collapsed material is subjected to the heat-sealer elements 23 and 24 which results in the spaced heat seals 8 and 9.

At the time of heat-sealing the wrappers are severed between the sealing points by means of

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the knife 25. This results in providing a complete individual wrapper for the group of receptacles in front of the collapsing and severing point. The completely wrapped group is advanced forward preferably by friction means as indicated at 26. The following group is advanced against the trailing end of the wrapper with the end sealing and severing means retracted, with the result that the trailing end of the wrapper is folded or tucked into the trailing receptacle of the group as shown in Fig. 6, and at the same time the forward end of the wrapper of the following or succeeding group is tucked into the recessed end of the bottom receptacle, or the front receptacle as viewed in the drawings, of each group. This tucked relation is shown in Figs. 2 and 6 and results in completely closing the ends of the package or group.

I also provide means for restraining or yieldably holding several groups, a holder for that purpose being shown at 23. This results in a stack of nested cups which may be of any number desired, several cups in a stack being desirable for packing for storage or in shipping containers. Further, this minimizes hand labor.

I am aware that it is old to nest and wrap nested groups of receptacles in transparent and other materials, and these are merchandised by some concerns in large quantities with a separate insert arranged in the top of the group designed to exclude dirt, but so far as I am aware these are inserted by hand, which means that the hands of the operators come in contact with the receptacles. So far as I have been able to observe, these inserts are not uniformly placed and do not fully protect the interior of the top receptacle of the group or stack, and it is necessary to handle each stack or group of receptacles individually. By the method here described the groups of receptacles are handled automatically and completely wrapped and sealed.

I have not illustrated or described in detail the mechanism for practicing the method of my invention as this may be greatly modified; for instance, in the matter of advancing the groups of cups. In the apparatus illustrated the wrapping strip is advanced with the groups of cups by reciprocating grippers, although other means might be employed for that purpose.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The method of wrapping and labeling groups of nested receptacles having inset bottoms with heat sealable wrapping material comprising the steps of advancing a strip of transparent heat sealable material and a label strip superimposed thereon and facing downwardly and conforming the wrapping strip to an upwardly facing channel section, placing groups of nested receptacles in spaced relation on said conformed wrapping strip with their tops facing rearwardly and advancing the wrapping and label strips with the groups with a step by step movement, wrapping the wrapping strip around the groups successively as they are advanced and overlapping and heat sealing at least a portion of the overlapping longitudinal edges of the wrapping strip at the sides of the groups, collapsing and heat sealing the wrapping strip so wrapped around the groups at spaced points between each group while the groups are at rest and severing between such spaced heat sealed points, thereby providing an individual wrapper for each group in advance of the point of end sealing and severing, frictionally holding the group at the front of the point of end sealing of the wrapped material and advancing the following group into nested relation therewith and thereby tucking the trailing sealed end of the wrapper into the rear receptacle of the preceding group and the front end of the wrapper of the following group into the recessed bottom of the front receptacle of such group.

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tionally holding the group at the front of the point of end sealing of the wrapped material and advancing the following group into nested relation therewith and thereby tucking the trailing sealed end of the wrapper into the rear receptacle of the preceding group and the front end of the wrapper of the following group into the recessed bottom of the front receptacle of such group.

2. The method of wrapping groups of nested receptacles having inset bottoms with heat sealable wrapping material comprising the steps of advancing a strip of heat sealable material and conforming the wrapping strip to an upwardly facing channel section, placing groups of nested receptacles in spaced relation on said conformed wrapping strip with their tops facing rearwardly and advancing the wrapping strip with the groups with a step by step movement, wrapping the wrapping strip around the groups successively as they are advanced and overlapping and heat sealing at least a portion of the overlapping longitudinal edges of the wrapping strip at the sides of the groups, collapsing and heat sealing the wrapping strip so wrapped around the groups at spaced points between each group while the groups are at rest and severing between such spaced heat sealed points, thereby providing an individual wrapper for each group in advance of the point of end sealing and severing, frictionally holding the group at the front of the point of end sealing of the wrapped material and advancing the following group into nested relation and therewith and thereby tucking the trailing sealed end of the wrapper into the rear receptacle of the preceding group.

3. The method of wrapping groups of nested receptacles having inset bottoms with heat sealable wrapping material comprising the steps of advancing a strip of heat sealable material and conforming the wrapping strip to an upwardly facing channel section, placing groups of nested receptacles in spaced relation on said conformed wrapping strip with their tops facing rearwardly and advancing the wrapping strip with the groups with a step by step movement, wrapping the wrapping strip around the groups successively as they are advanced and overlapping and heat sealing at least a portion of the overlapping longitudinal edges of the wrapping strip at the sides of the groups, collapsing and heat sealing the wrapping strip so wrapped around the groups at spaced points between each group while the groups are at rest and severing between such spaced heat sealed points, thereby providing an individual wrapper for each group in advance of the point of end sealing and severing, frictionally holding the group at the front of the point of end sealing of the wrapped material and advancing the following group into nested relation and therewith and thereby tucking the trailing sealed end of the wrapper into the rear receptacle of the preceding group, and frictionally retarding the advancement of a plurality of the completely wrapped groups in advance of the group nesting point to provide a stack of wrapped nested groups.

4. The method of wrapping and labeling groups of nested receptacles with heat-sealable wrapping material comprising the steps of advancing a strip of transparent heat-sealable material and a label strip superimposed thereon and facing downwardly and conforming the wrapping strip to an upwardly facing channel section, placing groups of nested receptacles in

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spaced relation on said conformed wrapping strip with their tops facing rearwardly and advancing the wrapping and label strips with the groups, wrapping the wrapping strip around the groups successively as they are advanced and overlapping and heat-sealing at least a portion of the overlapping longitudinal edges of the wrapping strip at the sides of the groups, collapsing and heat sealing the wrapping strip so wrapped around the groups at spaced points between each group and severing between such spaced heat-sealed points, thereby providing an individual wrapper for each group in advance of the point of end sealing and severing, restraining the group at the front of the point of end sealing of the wrapped material and advancing the following group into nested relation and thereby tucking the trailing sealed end of the wrapper into the rear receptacle of the preceding group.

5. The method of wrapping groups of nested receptacles with heat sealable wrapping material comprising the steps of advancing a strip of heat-sealable material and conforming the wrapping strip to an upwardly facing channel section, placing groups of nested receptacles in spaced relation on said conformed wrapping strip with their tops facing rearwardly and advancing the wrapping strip with the groups, wrapping the wrapping strip around the groups successively as they are advanced and overlapping and heat sealing at least a portion of the overlapping longitudinal edges of the wrapping strip at the sides of the groups, collapsing and heat sealing the wrapping strip so wrapped around the groups at spaced points between each group and severing between such spaced heat sealed points, thereby providing an individual wrapper for each group in advance of the point of end sealing and severing, restraining the group at the front of the point of end sealing of the wrapped material and advancing the following group into nested relation therewith and thereby tucking the trailing sealed end of the wrapper into the rear receptacle of the preceding group.

6. The method of wrapping groups of nested receptacles with heat-sealable wrapping material comprising the steps of advancing a strip of heat-sealable material and conforming the wrapping strip to an upwardly facing channel section, placing groups of nested receptacles in spaced relation on said conformed wrapping strip with their tops facing rearwardly and advancing the wrapping strip with the groups, wrapping the wrapping strip around the groups successively as they are advanced and overlapping and heat-sealing at least a portion of the overlapping longitudinal edges of the wrapping strip at the sides of the groups, collapsing and heat-sealing the wrapping strip so wrapped around the groups at spaced points between each group and severing between such spaced heat-sealed points, thereby providing an individual wrapper for each group in advance of the point of end sealing and severing, restraining the group at the front of the point of end sealing of the wrapped material and advancing the following group into nested relation therewith and thereby tucking the trailing sealed end of the wrapper into the rear receptacle of the preceding group, and restraining the advancement of a plurality of the completely wrapped groups at the front of the group nesting point to provide a stack of wrapped nested groups.

7. The method of wrapping groups of nested

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receptacles with heat-sealable wrapping material comprising the steps of advancing a strip of heat-sealable material and conforming the wrapping strip to an upwardly facing channel section, placing groups of nested receptacles in spaced relation on said conformed wrapping strip with their tops facing rearwardly and advancing the wrapping strip with the groups, wrapping the wrapping strip around the groups successively as they are advanced, collapsing and heat-sealing the wrapping strip so wrapped around the groups at spaced points between each group and severing between such spaced heat-sealed points, thereby providing an individual wrapper for each group in advance of the point of end sealing and severing, restraining the group at the front of the point of end sealing of the wrapped material and advancing the following group into nested relation therewith and thereby tucking the trailing sealed end of the wrapper into the rear receptacle of the preceding group, and restraining the advancement of a plurality of the completely wrapped groups at the front of the group nesting point to provide a stack of wrapped nested groups.

8. The method of wrapping groups of nested receptacles having inset bottoms with heat sealable wrapping material comprising the steps of advancing a strip of heat sealable material and placing groups of nested receptacles in spaced relation on said wrapping strip with their tops facing rearwardly, wrapping the wrapping strip around the groups successively as they are advanced and overlapping and heat sealing at least a portion of the overlapping longitudinal edges of the wrapping strip at the sides of the group, collapsing and heat-sealing the wrapping strip so wrapped around the groups at spaced points between each group and severing between such spaced heat-sealed points, thereby providing an individual wrapper for each group in advance of the point of end sealing and severing, restraining the advancement of the group at the front of the point of end sealing, and advancing the following group into nested relation therewith and thereby tucking the rear sealed end of the wrapper into the rear receptacle of the preceding group and the front end of the wrapper of the following group is tucked into the recessed bottom of the front receptacle of such group.

9. The method of wrapping groups of nested receptacles with heat sealable wrapping material comprising the steps of advancing a strip of heat sealable material and placing groups of nested receptacles in spaced relation on said wrapping strip with their tops facing rearwardly, wrapping the wrapping strip around the groups successively as they are advanced and overlapping and heat-sealing at least a portion of the overlapping longitudinal edges of the wrapping strip at the sides of the groups, collapsing and heat sealing the wrapping strip so wrapped around the groups at spaced points between each group and severing between such spaced heat sealed points, thereby providing an individual wrapper for each group in advance of the point of end sealing, and advancing the following group into nested relation therewith and thereby tucking the rear sealed end of the wrapper into the rear receptacle of the preceding group.

10. The method of wrapping groups of nested receptacles with heat sealable wrapping material comprising the steps of advancing a strip of heat sealable material and placing groups of nested receptacles in spaced relation on said wrapping

strip with their tops facing rearwardly, wrapping the wrapping strip around the groups successively as they are advanced and overlapping and heat-sealing at least a portion of the overlapping longitudinal edges of the wrapping strip at the sides of the groups, collapsing and heat sealing the wrapping strip so wrapped around the groups at spaced points between each group and severing between such spaced heat sealed points, thereby providing an individual wrapper for each group in advance of the point of end sealing, advancing the following group into nested relation therewith and thereby tucking the rear sealed end of the wrapper into the rear receptacle of the preceding group, and restraining the advancement of a plurality of the completely wrapped groups at the rear of the group nesting point to provide a stack of wrapped nested groups.

11. The method of wrapping groups of nested receptacles with heat sealable wrapping material comprising the steps of advancing a strip of heat-sealable material and placing groups of nested receptacles in spaced relation on said wrapping strip with their tops facing rearwardly, wrapping the wrapping strip around the groups successively as they are advanced, collapsing and heat sealing the wrapping strip so wrapped around the groups at spaced points between each group and severing between such spaced heat-sealed points, thereby providing an individual wrapper for each group in advance of the point of end sealing and severing, restraining the advancement of the group at the front of the point of end sealing, advancing the following group into nested relation therewith and thereby tucking the rear sealed end of the wrapper into the rear receptacle of the preceding group, and restraining the advancement of a plurality of the completely wrapped groups at the rear of the group nesting point to provide a stack of wrapped nested groups.

12. The method of wrapping groups of nested receptacles comprising the steps of advancing a strip of wrapping material and conforming the wrapping strip into an upwardly facing channel section, placing groups of nested receptacles in spaced relation on said wrapping strip with their tops facing rearwardly and wrapping the wrapping strip around the groups successively as they are advanced, collapsing and securing the wrapping strip so wrapped around the groups at spaced points between each group and severing between such spaced points, thereby providing an

individual wrapper for each group in advance of the point of such securing and severing, restraining the advancement of the group at the front of the point of end securing and severing and while so restrained advancing the following group into nested relation therewith and thereby tucking the trailing end of the wrapper into the rear receptacle of the preceding group.

13. The method of wrapping groups of nested receptacles comprising the steps of advancing a strip of wrapping material and placing groups of nested receptacles in spaced relation on said wrapping strip with their tops facing rearwardly and wrapping the wrapping strip around the groups successively as they are advanced, collapsing and securing the wrapping strip so wrapped around the groups at spaced points between each group and severing between such spaced points, thereby providing an individual wrapper for each group in advance of the point of such securing and severing, restraining the advancement of the group at the front of the point of end securing and severing and while so restrained advancing the following group into nested relation therewith and thereby tucking the trailing end of the wrapper into the rear receptacle of the preceding group.

14. The method of wrapping groups of nested receptacles comprising the steps of advancing a strip of wrapping material and placing groups of nested receptacles in spaced relation on said wrapping strip with their tops facing rearwardly and wrapping the wrapping strip around the groups successively as they are advanced, collapsing and securing the wrapping strip so wrapped around the groups at spaced points between each group and severing between such spaced groups, thereby providing an individual wrapper for each group in advance of the point of such securing and severing, restraining the advancement of the group at the front of the point of end securing and severing and while so restrained advancing the following group into nested relation therewith and thereby tucking the trailing end of the wrapper into the rear receptacle of the preceding group, and restraining the advancement of a plurality of the nested wrapped groups in advance of such nesting point to provide a stack of wrapped groups.

WENDELL T. BURBANK.

No references cited.