

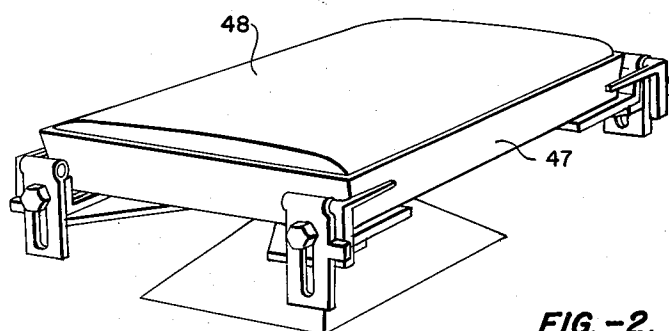
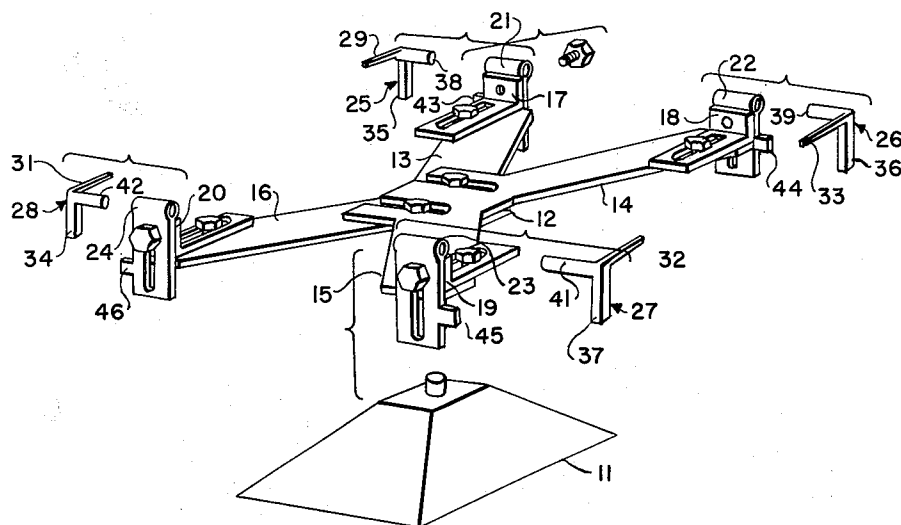
June 13, 1961

M. A. HOWE, JR
PACKAGING APPARATUS

2,987,860

Filed March 24, 1959

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

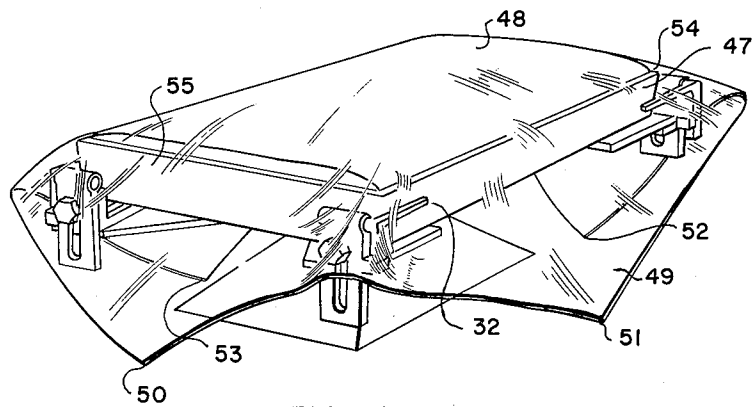


FIG. -3.

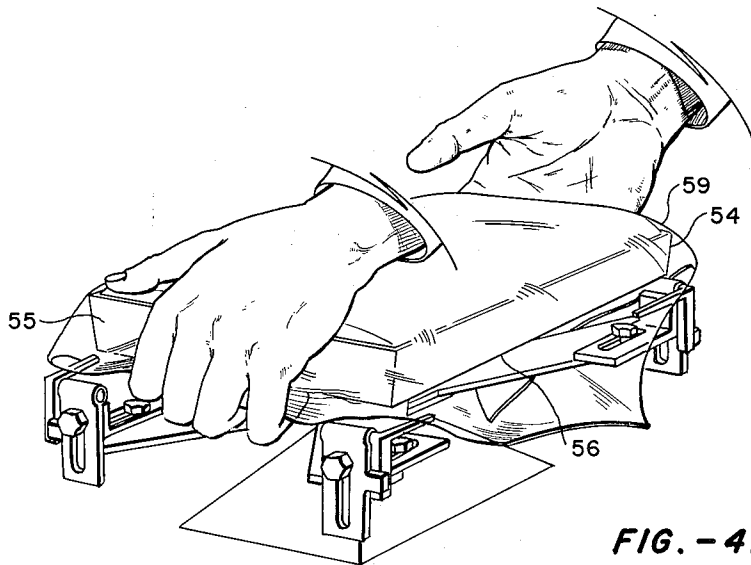


FIG. -4.

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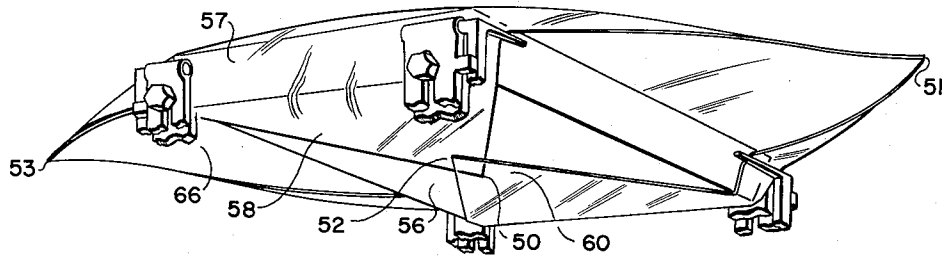


FIG. -5.

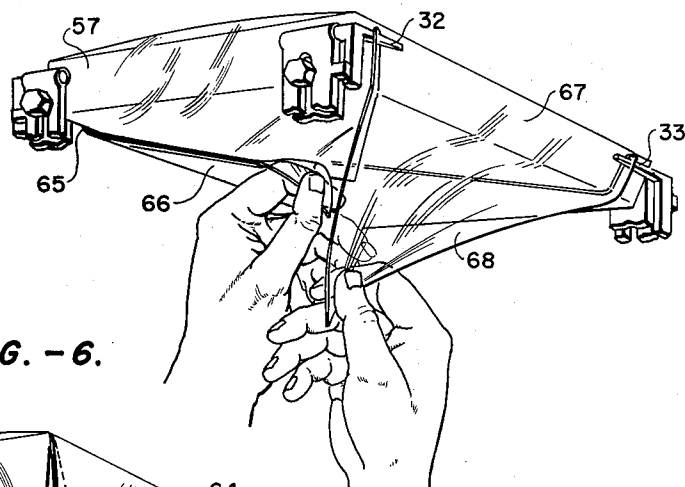


FIG. -6.

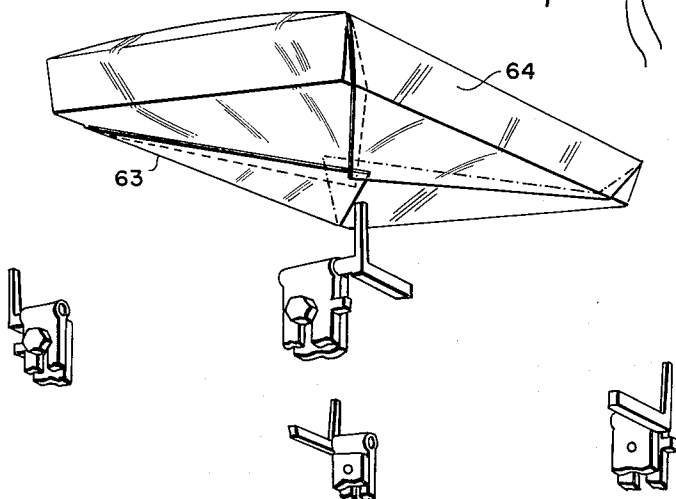


FIG. -7.

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PACKAGING APPARATUS

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3 Claims. (Cl. 53—206)

This invention, in general, relates to packaging. More particularly this invention relates to an apparatus that is especially adapted to facilitate the manual wrapping of foods.

The present day tendency is to prepackage large quantities of food prior to their exhibition for sale to the public. These food products are each prepackaged in wrappings in which they are best displayed to their individual advantage. In this way each one of the packages functions as a salesman for its individual product. Besides being extremely attractive, these wrappings afford ample protection to the food product and enhance its ability to remain fresh over a relatively longer period of time.

One conventional package which has been found to be extremely attractive and which is used in many cases to package individual trays of foodstuffs, such as meats and poultry, is the diamond wrap type package. In this type package, the diagonally opposite corners of the wrapping sheet are heat sealed together, in overlapping relationship, at the underside of the packaging tray. In this manner a neat, attractive, and sanitary package is formed with the four corners of the sheet being out of view on the underside of the package. In the best practice, the wrapping sheet utilized is made from a clear plastic film in order to facilitate the exhibition of the top surface of the packaged foodstuff to the view of the prospective buyer. This view is essentially unobstructed unless, of course, it is desired to insert instructional material, advertising, or pricing tabs between the surface of the foodstuff and the surface of the wrapping sheet.

Even though the advantages of the diamond wrap type package have been well recognized by industry, various difficulties which have been encountered in the method of assembling this type package have somewhat impeded its full use in the packaging of meats and poultry. These difficulties, in a number of cases, may be attributed to the fact that the tray of foodstuff may not be inverted during the packaging procedure. The apparent reason for this is that the tray not only contains solid foodstuffs but also the juices thereof both of which are liable to spillage. Therefore, the following described procedure seemed to be the only practical method of performing the diamond wrap on these type products.

In illustration, a square plastic sheet is placed upon the upper surface of the foodstuff contained in the tray. The covered tray of foodstuff is then grasped at two of its opposite sides and lifted from the supporting surface. Most usually the tray is grasped in such a manner that the diagonally opposite marginal corners of the surmounting sheet are brought together at the underside of the packaging tray during this lifting operation. The tray is now replaced on the supporting surface. Sequentially, the other two sides of the tray are grasped and the tray is again lifted from its supporting surface. During this operation the two marginal corners of the sheet, which at this point are extending from the tray, are brought together at the underside of the packaging tray against the first two folded margins. To complete this type package, heat will be applied to the exposed surface of the folded margins in order that the margins, which are folded last, will be heat sealed to the margins which have been folded first.

One of the principal difficulties with this aforedescribed method is that the first two overlapping marginal

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corners exhibit a tendency of opening during the lifting operation in which the last two marginal corners are overlapped. The reason for this is that the clear plastic sheeting, which is conventionally used in this type of operation, is light in weight and possesses a smooth, slick surface. These factors tend to cause the film to continually slide out of position. Obviously this causes the wrapper lost motion in repositioning the film and in pulling it tight against the package. Another major difficulty lies in the fact that the corners of the package produced by this method exhibit a tendency to open and unravel even after the package has been completed. This is primarily a result of the fact that the corners of the package are usually irregular and sloppy due to a lack of tucking at the corners of the tray. It is apparent that this method of performing the diamond wrap is not only difficult but, in many cases, may be extremely tedious. It is also apparent that it requires a degree of skill to produce a neat and compact package by this method with any degree of speed.

It is an object of this invention to provide an improved apparatus which will aid in facilitating the manual production of a neat, attractive, compact and sanitary diamond wrap type package.

Another object of this invention is to provide an improved apparatus which will aid in facilitating the manual wrapping of foodstuff, particularly meat and poultry, in a neat and attractive package.

A further object of this invention is to provide an improved apparatus which will impart speed and simplicity to the manual wrapping of foodstuffs, particularly meat and poultry.

FIGURE 1 is a perspective view of the apparatus of the present invention.

FIGURES 2 through 7 illustrate the various steps required in the performance of a method of producing the diamond wrap type package.

This apparatus is provided with a frustum of an obelisk which functions as a base 11 for the wrapping mechanism. A frame 12, in the shape of an X, is mounted upon the upper surface of the base 11. The function of this frame 12, which is adjustable as to length and width, is to support the food tray during the packaging procedure. The four radial legs 13, 14, 15 and 16 of this frame are each respectively provided with an upright member 17, 18, 19 and 20 each of which supports a journal housing 21, 22, 23 and 24. The function of these four upright members 17, 18, 19 and 20, which are adjustable, is to serve as abutments which will align the surmounted tray in position upon the frame 12. The journal housings 21, 22, 23 and 24 which are adjustable as to elevation are each adapted with a bifurcated tucking mechanism 25, 26, 27 and 28. These tucking mechanisms, which are individually and respectively provided with tucking arms 29, 31, 32 and 33 and anchor arms 34, 35, 36 and 37, are also each respectively adapted with an axle 38, 39, 41, 42 each of which is revolvably mounted on their respective journal housings 21, 22, 23 and 24. The function of the anchor arms 34, 35, 36 and 37 is to maintain their respective tucking arms 29, 31, 32 and 33 in horizontal position during substantially all of the wrapping procedure. Each of the upright members 17, 18, 19 and 20 is provided with a stop 43, 44, 45 and 46 which laterally extends to the outermost side of their respective upright members. The function of these stops is to control the direction of revolution of the individual bifurcated tucking mechanisms 25, 26, 27 and 28.

The performance of the conventional method of preparing a diamond wrap type package, utilizing the present apparatus, initially involves placing a food tray 47 in position upon the frame 12. This tray may be anyone of a wide variety of sizes and the present apparatus may

be adjustably adapted to accommodate the same. For instance, the frame 12 of this apparatus may be longitudinally adjusted to accommodate any one of a number of food trays having a wide latitude of lengths. In further illustration, the frame 12 of this apparatus may be transversely adjusted to aid in accommodating food trays having a wide latitude of widths. The journal housings 21, 22, 23 and 24 positioned with respect to the radial legs 13, 14, 15 and 16, may be elevationally adjusted to accommodate the tray and to position the tucking arms 29, 31, 32 and 33 to tuck the wrapping material against the tray. In this way, various food trays having a wide latitude of depths may be accommodated by this apparatus. At this point the mounted tray 47 may already contain foodstuff, or the foodstuff 48 may be subsequently added thereto.

A square sheet of plastic film 49, which is relatively larger in area in comparison to the upper surface of the food tray 47, is placed upon the top surface of the foodstuff 48 contained in the tray 47, as illustrated in Figure 3. In some cases, this plastic sheet may be of another shape but folded into the shape of a square. This sheet is positioned relative to the tray so that its sides are oblique to the sides of the tray. A substantial portion of the sheet in the area of the four marginal corners 50, 51, 52 and 53 extends over the sides of the tray. These portions due to their unsupported weight will tend to hang in a downwardly direction.

The sides 54, 55 of the tray, which are perpendicular to the longitudinal length of the tucking arms 29, 31, 32 and 33, are now grasped in such a manner that the surmounted sheet 49 is held in position upon the upper surface of the foodstuff 48 contained in the tray 47. The tray 47 is now lifted from its position upon the frame 12 and the marginal corners 50, 52 of the sheet are manipulated into overlapping relationships on the underside 56 of the tray, as illustrated in FIGURE 4. In actuality, a portion of the sheet adjacent the marginal corner 50 is folded downwardly, such that a section 57 of the sheet comes into contact with the outer surface of the tray side 55, and then inwardly, such that another section 58 of the same sheet comes into contact with the underside 56 of the tray. In the same manner, another portion of the sheet adjacent the sides of the marginal corner 52 is folded downwardly, so that a section 59 of the sheet comes into contact with the outer surface of the tray side 54, and then inwardly, so that another section 60 of the same sheet comes in contact with the first folded margin 50 at the underside of the tray. For speed and ease of operation, the two overlapped marginal corners 50, 52 of the plastic sheet are not heat sealed at this point in the procedure. However, they may be sealed if desired, by merely applying a heating tool to their overlapped sections.

The tray is now replaced in position upon the frame 12, as illustrated in FIGURE 5. As the tray is lowered in position, the portions of the sheet which laterally project beyond the sides 54, 55 and undersection 56 of the tray will traverse the upper surface of the tucking arms 29, 31, 32 and 33. In actuality, the portion of the sheet which projects beyond the side 54 of the tray will traverse and come in contact with tucking arms 29, 33. In the same manner, the portion of the sheet which also projects beyond the side 55 of the tray will traverse and come in contact with tucking arms 31, 32. Due to this operation, these projecting portions of the sheet will be automatically pushed upwardly into contact with the sides of the tray which run parallel to the longitudinal length of the tucking arms 29, 31, 32, and 33. When the tray is finally replaced in position upon the frame 12, both of the overlapped marginal corners 50, 52 will be held in position by the weight of the tray itself.

While the tray is in this position, the marginal corners 53, 51 of the sheet which remain extending over the sides 63, 64 of the tray are manipulated into overlapping relationship at the underside of the tray. In actuality, the

portion of the sheet adjacent the marginal corner 53 is folded downwardly so that a section 65 of this sheet will overlap the tucking arms 29, 31 and then inwardly so that another section 66 of the same sheet will come in contact with the overlapped margins at the underside of the tray. In the same manner, the portion of the sheet adjacent the sides of the marginal corner 51 is also folded downwardly so that a section 67 of the sheet will overlap the tucking arms 32, 33 and then inwardly so that another section 68 of the same sheet will come in contact with the overlapped margins at the underside of the tray.

At this point the sides 63, 64 of the tray, which are parallel to the tucker arms, are grasped and the tray is lifted vertically from its berth on the frame 12, as illustrated in FIGURE 7. Due to this operation, the four tucker arms engaging the corners of the diamond wrap package will be pivoted upwardly to a substantially vertical position on their respective axes. In this manner, the tucker arms will slide clear of their respective corners as the package is lifted clear of the frame. The package now may be completed by placing it on a heated surface which will facilitate the sealing of the overlapping folds together.

It is apparent from the foregoing description that a new and improved wrapping apparatus has been invented. This improved apparatus is especially adapted to facilitate the manual wrapping of food, such as meat and chicken, in sealed, transparent packages for exhibition and sale to the public. In this manner a neat and sanitary package is formed with the four marginal corners of the sheet being out of view on the underside of the package. Such a package is ideal for display purposes, and is securely sealed preventing the contents from being tampered with.

I claim:

1. An apparatus which will facilitate the manual performance of a method of packaging which comprises in combination: a base, a horizontally disposed X-shaped frame mounted above said base to accommodate a packaging tray having four side walls, an upright member mounted at the end of each of the four arms of said X-shaped frame and positioned so that one pair of said upright members abuts one side wall and the second pair of said upright members abuts the opposite side wall of said packaging tray, each of said upright members being located adjacent to each of the four corners of said packaging tray, a tucking arm extending horizontally from each upright member along the two sides of said tray not abutting said upright members, said tucking arms pivotally mounted on said upright members and movable in an upward direction from said normal horizontal position.

2. An apparatus which will facilitate the manual performance of a method of packaging which comprises in combination: a base, a horizontally disposed X-shaped frame mounted above said base, said frame adjustable as to length and width to accommodate a packaging tray having four side walls, an elevationally adjustable upright member mounted at the ends of each of the four arms of said X-shaped frame and positioned so that one pair of said upright members abuts one side wall and the second pair abuts the opposite side wall of said packaging tray, each of said members being located adjacent to each of the four corners of said tray, a tucking arm extending horizontally from each upright member along the two sides of said packaging tray not abutting said upright members, said tucking arms pivotally mounted at one end thereof on said upright members and upwardly movable in a vertical plane from said normal horizontal position.

3. An apparatus which will facilitate the manual performance of a method of packaging which comprises in combination: a base, a horizontally disposed X-shaped frame mounted above said base, said frame adjustable as to length and width to accommodate a packaging tray having four side walls, an elevationally adjustable upright member vertically mounted at the ends of each of the four arms of said X-shaped frame and positioned so that one pair of said upright members abuts one side wall and the

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second pair abuts the opposite side wall of said packaging tray, each of said members being located adjacent to each of the four corners of said tray, a tucking arm extending horizontally from each upright member along the two sides of said packaging tray not abutting said upright members, said tucking arms pivotally mounted at an end thereof on said upright members, an anchor arm integral with each of said tucking arms at the pivot point and extending vertically downward, a stop located on said upright mem-

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ber against which the anchor arm normally rests thereby holding the tucking arm in a horizontal position but permitting it to pivot upwardly in a vertical plane.

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