Jan. 16, 1968 C. R. HOOD 3,363,748

COMBINATION DISPLAY AND DISPENSING PACKAGE FOR A ROLL OF CONTINUOUS SHEETING MATERIAL

Filed Sept. 8, 1966 3 Sheets-Sheet 1

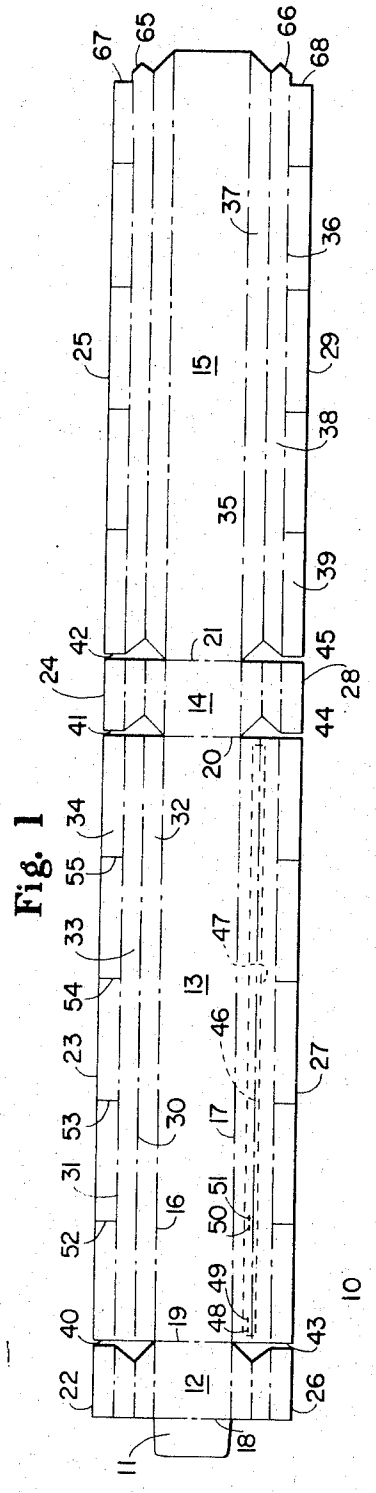


Fig. 1

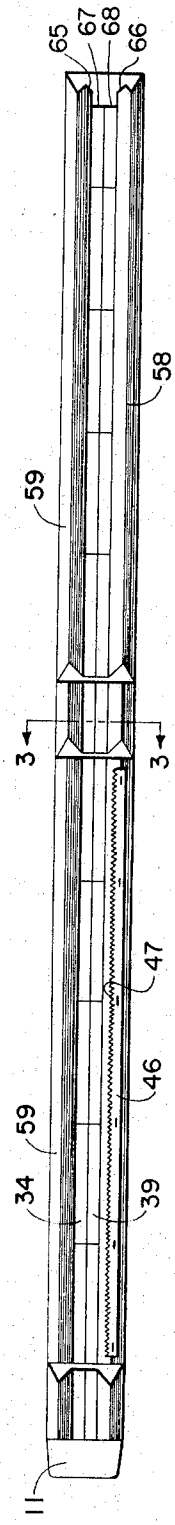


Fig. 2

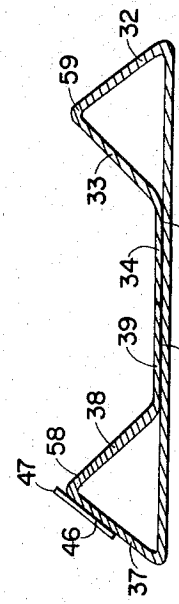


Fig. 3

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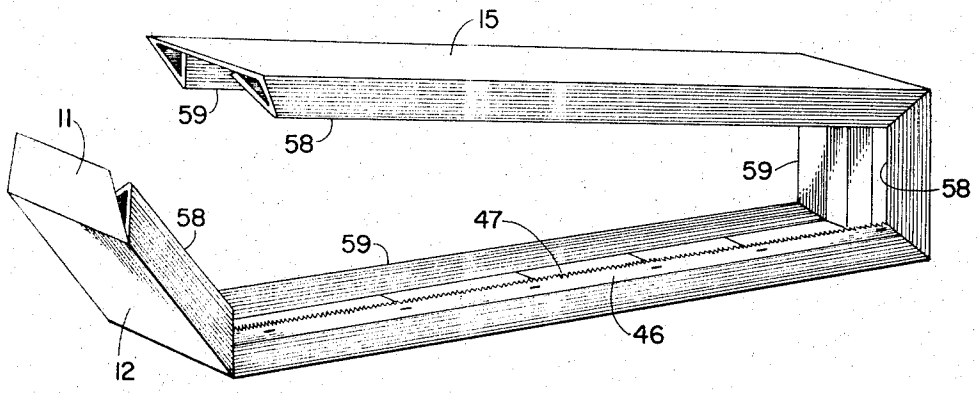
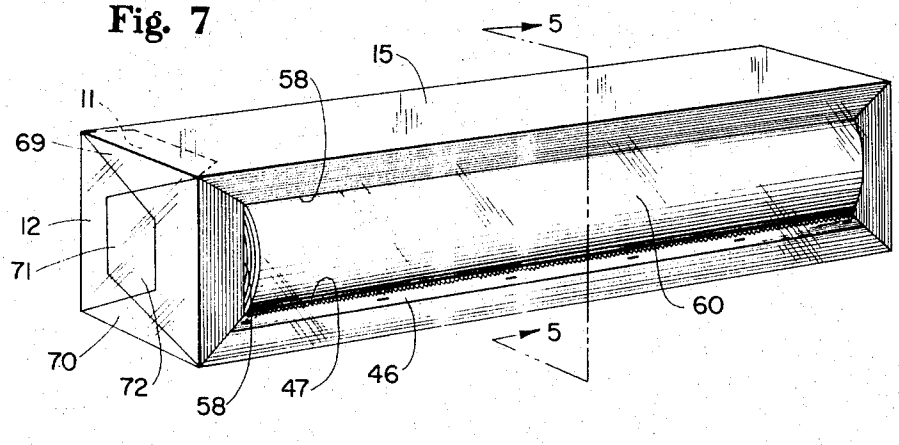


Fig. 4

Fig. 7



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Fig. 6

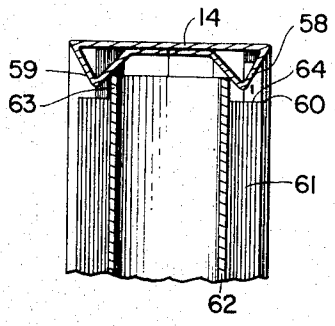


Fig. 5

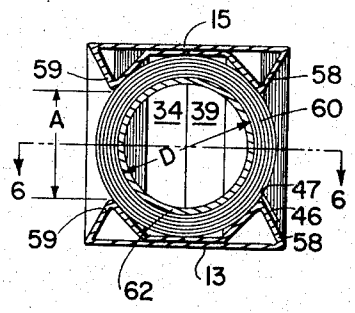
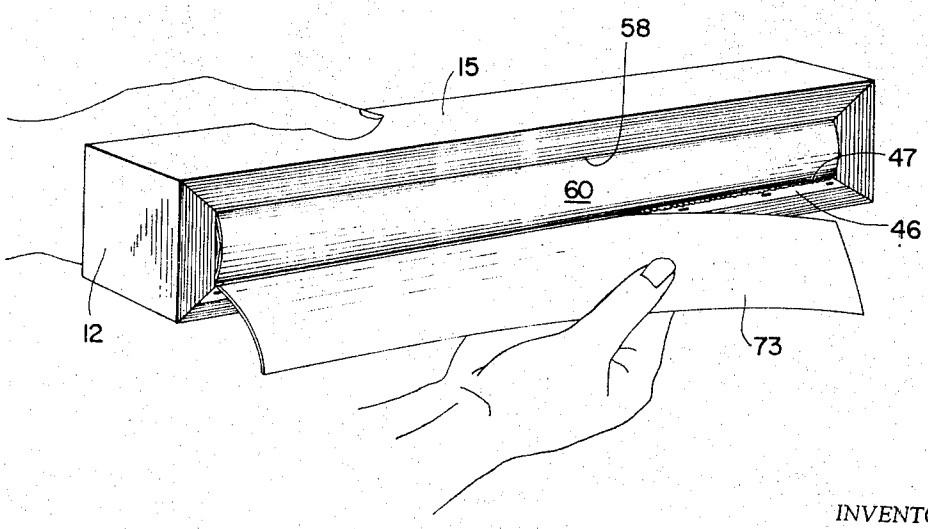


Fig. 8



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3,363,748

COMBINATION DISPLAY AND DISPENSING PACKAGE FOR A ROLL OF CONTINUOUS SHEETING MATERIAL

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Filed Sept. 8, 1966, Ser. No. 577,927
3 Claims. (Cl. 206—45.33)

This invention relates to a package for a roll of continuous sheeting material. More particularly, the invention relates to a package of this class in which a roll of continuous sheeting material is suitably supported such that it is plainly visible before and during use. The invention also provides an improved form of dispensing package for a continuous sheeting product in roll form.

Dispensing packages of this general type are commonly found in which the roll of continuous sheeting material is completely enclosed. This, of course, makes it entirely impossible for a potential purchaser to see and inspect the product. These disadvantages were overcome in the package as disclosed and claimed in U.S. Patent 3,262,620, issued on July 26, 1966, to Robert V. Burt et al., which patent is assigned to and commonly owned by the assignee of the present invention.

The package described in the Burt et al. patent is particularly suited for packaging large diameter rolls of continuous sheeting material or rolls containing substantial lengths of continuous sheeting material. As a result, the ends of the cores supporting the continuous sheeting material are necessarily supported by apparatus cut into the tubular elements at the ends of the package. However, the provision of these apertures to support the core structurally weakens the end of the package somewhat while also requiring an additional operation in the formation of the packaging blank. These disadvantages are overcome in the present invention, which is an improvement over the package described and claimed in the Burt et al. patent.

It is a principal object of the present invention to provide a combination display and dispensing package which eliminates the cut apertures in the tubular support elements at the end panels of the package, thereby avoiding loss of structural strength in the package.

Another object of this invention is the provision of a package of this type which is particularly useful for supporting a roll of continuous sheeting material of relatively thin caliper or short length, the roll and core being retained within the package without any possibility of becoming dislodged therefrom.

A further object of the invention is the provision of a new and improved package structure which is particularly suited for supporting continuous sheeting material in roll form, the structure of the package being such that it can be formed on high speed packaging machinery thus making the package commercially feasible.

Still another object of the invention is the provision of a package of the character described which is convenient in use and which readily and conveniently allows removal and cutting away of a desired length of the continuous sheeting material from the roll.

The nature and substance of the invention can be briefly summarized as comprising a package for a wound supply roll of continuous sheeting material supported on a tubular core which projects beyond the edges of the sheeting material, said package being made from a blank of paperboard or like material which is cut, scored and folded into a frame blank having tubular supports on either side of its four wall-forming panels. The frame blank is folded and formed around the supply roll by placing the extensions of the core at both ends of the roll between the tubular supports formed at the end panels and thereafter joining the ends of the frame blank. The diameter of the core is substantially greater than the spacing between the tubular support elements located on oposite side wall panels so that the roll of material wound on the core will not be dislodged from the package when in use. The package is preferably further completed by overwrapping the frame with a transparent plastic film, preferably one having heat-shrinkable properties. The overwrapped film is heated and shrunk to add substantially to the rigidity of the completed package. The roll of product within the package has a relatively large portion of its surface exposed through the two open sides of the frame so that it may be readily examined by a potential consumer.

While the specification concludes with claims particularly pointing out and distinctly claiming the subject matter regarded as forming the present invention, it is believed the invention will be better understood from the following description taken in connection with the accompanying drawings in which:

FIGURE 1 is a plan view of the frame blank of this invention in flat form.

FIGURE 2 is a plan view of the frame blank of this invention after the tubular supports have been formed.

FIGURE 3 is a cross section taken on the line 3—3 of FIGURE 2 showing the tubular supports at one end panel.

FIGURE 4 is a perspective view of the frame blank in partially erected form with the several panels in position to receive the roll of continuous sheeting material.

FIGURE 5 is a cross section taken on the line 5—5 of FIGURE 7 showing the manner in which the roll of continuous sheeting material is supported between the tubular supports.

FIGURE 6 is a cross section taken on the line 6—6 of FIGURE 5 showing the manner in which one end of the roll is supported between the tubular supports at one end panel.

FIGURE 7 is a perspective view of the finished package containing a wound supply roll of continuous sheeting material wherein the frame has been overwrapped with a heat-shrinkable plastic film which has been heated and shrunk in place.

FIGURE 8 is a perspective view of the finished package with the heat-shrinkable film removed showing one end of the continuous sheeting material withdrawn from the supply roll and partially severed by means of the cutting blade provided in the package structure.

Reference will now be made to the drawings in describing the invention and the manner of making and using same. A frame blank **10** generally configured in the form of an elongated strip is illustrated in flat condition in FIGURE 1. The frame blank **10** is formed by cutting and scoring a suitable packaging material such as cardboard, paperboard, cartonboard, plastic, thin metal or the like. The frame blank **10** is divided successively into a flap **11**, an end panel **12**, a side panel **13**, an end panel **14**, and a side panel **15** by means of spaced horizontal parallel score lines **16** and **17** and vertical parallel transverse score lines **18**, **19**, **20** and **21**. The score lines **16** and **17** run longitudinally from one end of the elongated strip forming the frame blank **10** to the other end thereof. Extending portions **22**, **23**, **24** and **25** project laterally outwardly from the longitudinal score line **16**. Similarly, extending portions **26**, **27**, **28** and **29** extend laterally outwardly from the longitudinal score line **17**.

Each of the extending portions **22**, **23**, **24** and **25** are divided by means of the horizontal score lines **30** and **31** into an inner area **32**, an intermediate area **33** and an outer area **34**. Similarly, the extending portions **26**, **27**,

28 and 29 are divided by means of the horizontal score lines 35 and 36 into an inner area 37, an intermediate area 38 and outer area 39.

Angular relief cut-outs 40, 41 and 42 are provided between the extending portions 22, 23, 24 and 25. Similarly, angular relief cut-outs 43, 44 and 45 are provided between the extending portions 26, 27, 28 and 29. It will be noted that the angular relief cut-outs are formed by making a straight cut co-extensive with one of the transverse score lines 19, 20 or 21 while the adjoining cut is formed by cutting a V-shaped notch extending from the horizontal longitudinal score line 16 or 17 to a point near the score lines 31 or 36 and then cutting straight cut parallel to the adjoining straight cut to leave a narrow gap at the outside edge of the cut-out.

A cutting device may be provided in the form of a blade 46 of plastic or metal having a cutting edge 47. The blade 46 can be secured to the blank on the outside surface of the inner area 37 of the extending portion 27. Preferably, the cutting edge 47 is serrated but other types of cutting edges will be satisfactory in practicing the invention. Other forms of cutting devices can also be substituted for the blade 46 such as forming a jagged edge on the frame blank material or providing a cutting edge made of a resinous material applied to the frame blank. For some continuous sheeting materials, the cutting blade 46 can be eliminated without in any way affecting the utility of the package. For example, when the continuous sheeting material has spaced transverse lines of perforation, no cutting device is necessary.

When a cutting blade 46 is provided, it is preferably mounted so that the cutting edge 47 extends slightly outwardly of the score line 35. The blade 46 can be attached to the blank in various ways. One convenient way is illustrated wherein the blade has protrusions punched from its body which are forced through the material of the frame blank 10 and are folded over as shown as 48, 49, 50, 51, etc.

It will be noted that the extending portions 23, 25, 27 and 29 are provided with a series of spaced parallel cuts in their outer areas 34 and 39. For example, the extending portion 23 has spaced cuts 52, 53, 54 and 55 extending inwardly from the edge of the blank to the score line 31. Similar cuts are provided in the extending portions 25, 27 and 29 as illustrated. These cuts are desirable and useful when folding and gluing the frame blank into shape as they give the outer areas 34 and 39 greater flexibility thereby making them more readily folded and glued in place with little lapse of time when hot-melt adhesives are used for that purpose.

The flat frame blank 10 of FIGURE 1 is folded and formed into the structure shown in FIGURE 2 as the next step in the construction of the package. This is accomplished by folding the extending portions 22, 23, 24 and 25 on the score lines 16, 30 and 31 so that the outer area 34 on each of the extending portions lies in contiguous relationship with its respective panel 12, 13, 14 or 15. The extending portions 26, 27, 28 and 29 are similarly folded so that the outer area 39 on each of the extending portions is also contiguous to its respective panel 12, 13, 14, or 15. When so folded, the frame blank has a cross section as shown in FIGURE 3. The folded and formed frame blank is held in this relationship by the application of adhesive to the areas 56 and 57 (FIGURE 3) along the entire length of the blank.

It will be noted that in folding the frame in the previously described manner, a tubular support 58 is formed along one edge of each of the side and end panels and a second tubular support 59 is similarly formed along the other edge of each of the side and end panels. These tubular supports are spaced apart and are relatively rigid by virtue of their geometric structure and because of the inherent rigidity of the material from which they are made.

Preferably, the tubular supports 58 and 59 are triangular in cross section as shown in FIGURE 3. This gives the frame and the package greater stability and rigidity. However, the frame blank can be cut, scored, and folded so the tubular supports 58 and 59 have other cross sectional shapes, e.g. quadrilateral, arcuate, etc., to achieve similar results.

The folded and formed frame blank of FIGURE 2 is in condition for further folding to receive a roll of continuous sheeting material. This can be initiated by folding the structure into a configuration similar to that shown in FIGURE 4. Before the end flap 11 is tucked in place, however, a supply roll 60 of continuous sheeting material wound on a core is placed within the frame.

The support for one end of the supply roll is best shown in FIGURE 6. In referring to FIGURE 6, it will be noted that the supply roll 60 has continuous sheeting material 61 wound on a core 62, the end 63 of which projects beyond the edge 64 of the sheeting material 61. A similar projection of approximately equal length is provided at the other end of the core 62. The projection 63 is placed between the tubular supports 58 and 59 at the end panel 14 in the manner illustrated to support the roll 60 at one end. Similarly, the other projecting end of the core is fitted between the tubular supports 58 and 59 at the end panel 12 when the flap 11 is tucked in place to complete the frame around the roll 60.

After placing the supply roll 60 in the frame so that the core ends are supported between the tubular supports 58 and 59 at the end panels 12 and 14, the flap 11 is tucked into the position illustrated by broken lines in FIGURE 7. It will be understood that the flap 11 is tucked between the tubular supports 58 and 59 and the inner surface of the side panel 15. It will be noted in FIGURES 1 and 2 that the intermediate areas 33 and 38 on the extending portions 25 and 29, respectively, are cut away at 65 and 66, respectively. Similarly, the outer areas 34 and 39 are cut short at 67 and 68, respectively. Thus, the right end of the frame blank in FIGURE 2 provides sufficient clearance between the tubular supports 58 and 59 and the panel 15 to receive the flap 11 when tucked into the position of FIGURE 7. The flap 11 is secured by means of an appropriate adhesive. As an alternate construction, the flap 11 can be placed against the outside of the panel 15 and secured by means of an adhesive. It will also be apparent that the flap 11 can extend from either end of the frame blank of FIGURE 1 without detracting from the advantages of the frame structure.

FIGURE 5 illustrates one of the important aspects of the invention. Inasmuch as the ends 63 of the core 62 ride freely between the tubular support elements 58 and 59, it is necessary to provide a positive means to prevent the supply roll 60 from being dislodged from the package when in use. This is particularly necessary when the sheeting material 61 is of thin caliper, or when it has been nearly exhausted. Thus, as seen in FIGURE 5, the diameter D of the core 62 is selected such that it is substantially greater than the width opening (dimension A) between the facing tubular support elements 58—58 and 59—59 on the opposite side panels 12 and 15. In other words, the dimension A FIGURE 5 between opposite pairs of tubular supports is substantially less than the diameter D of the core to retain core 62 regardless of the amount of sheeting material wrapped thereon. Preferably, the core diameter D is at least about 1.2 times the width dimension A. This manner of retaining the roll 60 allows the core 62 to be mounted in the package without structurally weakening the tubular support elements 58 and 59 at the end panels 12 and 14.

FIGURE 7 illustrates the frame structure overwrapped with a transparent plastic film material. The film material is preferably of the heat-shrinkable type such as bi-axially oriented polyvinyl chloride, polyethylene, polypropylene, or the like. It is also possible, of course, to use a non-shrinkable overwrap film such as cellophane,

polypropylene, polystyrene, or the like. The overwrap material is cut to size and then wrapped around the frame. It is sealed longitudinally along one side panel whereupon the tucks **69** and **70** are made. The end folds **71** and **72** are then formed and sealed against the package. The other end of the package (not shown) has the ends of the wrapper similarly formed and sealed. When a preferred heat-shrinkable film is used, the finished package is then subjected to sufficient heat to cause the overwrap film to shrink thereby greatly increasing the rigidity of the frame structure. The use of a transparent overwrap film allows inspection of the supply roll **60** of continuous sheet material from the two sides of the open frame.

When a portion of the continuous sheeting material **61** is to be withdrawn and cut from the roll **60**, the outer wrapper is first removed. Then, as shown in FIGURE 8, the end **73** of the roll **60** is withdrawn over the cutting blade **46** which is mounted on the tubular support **58**. After a satisfactory length has been withdrawn, the user merely pulls down against the cutting edge **47** to sever a piece from the roll of continuous sheeting material.

The package heretofore described is useful for supporting and dispensing any of several materials which are particularly adapted for commercial sale in roll form. For example, it can be used in the dispensing of continuous sheet material such as paper products including hand towels, wrapping paper, waxed paper and the like. It can also be used for dispensing plastic film products or metallic foil products. In one application, the invention was successfully used for displaying and dispensing a roll of detergent impregnated disposable paper dishcloths of the type described and claimed in U.S. Patent 3,121,249 issued to S. B. Afflect et al. on Feb. 18, 1964. In general, however, the invention is useful for dispensing any type of continuous sheet material in roll form as the foregoing specific examples are merely illustrative of a number of potential uses.

While particular embodiments of the invention have been illustrated and described, it will be obvious to those skilled in the art that various changes and modifications can be made without departing from the spirit and scope of the invention and it is intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.

What is claimed as new is:

1. A combination display and dispensing package for a supply roll of continuous sheeting material, said package comprising a frame, said frame being formed from a frame blank generally configured in the form of an elongated strip of paperboard or like material, said frame blank having two spaced parallel score lines running longitudinally from one end of said elongated strip to the other end thereof, a plurality of transverse scores at intervals along the said frame blank, said transverse scores being substantially perpendicular to said parallel longitudinal scores thereby dividing the central portion of the frame blank into four panels, including two side panels and two end panels, said side and end panels being alternately spaced along said frame blank, a flap articulated to and extending beyond the panel at one end of said frame blank, an extending portion projecting laterally outwardly from each of the longitudinal scores which define the edge portions of the said panels, each of said extending portions being at least partially separated by angular relief cut-outs located outwardly of each of said transverse scores, each of said extending portions being folded into a tubular support, said tubular supports being adhered to their adjoining panels so that each of said side and end panels has a pair of spaced, substantially rigid tubular supports in parallel relationship alongside the longitudinal scores forming the upper and lower extremities of said side and end panels, a supply roll of continuous sheeting material wound on a core, the length of said core being greater than the width of said sheeting material so that the ends of the core project from each end of said supply roll, said side and end panels being folded into a substantially rectangular frame by folding the said frame blank on said transverse scores so that the said tubular supports face inwardly, the projecting ends of the core supporting said supply roll being supported for rotation between the tubular supports at the opposite end panels, the minimum spacing between opposite pairs of tubular supports projecting inwardly from the side panels being substantially less than the diameter of the core to retain the core within the package as the sheeting material is removed therefrom, said flap at one end of said frame blank being secured to the panel at the other end of the frame blank to form a frame structure supporting said supply roll of sheet material.

2. A combination display and dispensing package as in claim **1** wherein the core diameter is at least 1.2 times the spacing between the opposite pairs of tubular supports projecting inwardly from the side panels.

3. A combination display and dispensing package as in claim **2** wherein said frame structure is overwrapped with a flexible and heat-shrinkable plastic film, said film being heated and shrunk on said frame structure to impart greater rigidity to said frame structure.

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3,262,620 7/1966 Burt et al. ---------- 206—58 X

MARTHA L. RICE, *Primary Examiner.*