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2,782,846

REFRIGERATOR CURTAINS AND MOUNTINGS

Filed July 15, 1954

3 Sheets-Sheet 1

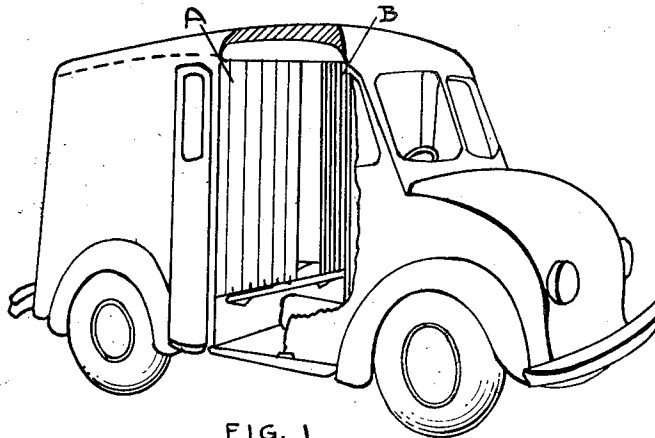


FIG. 1

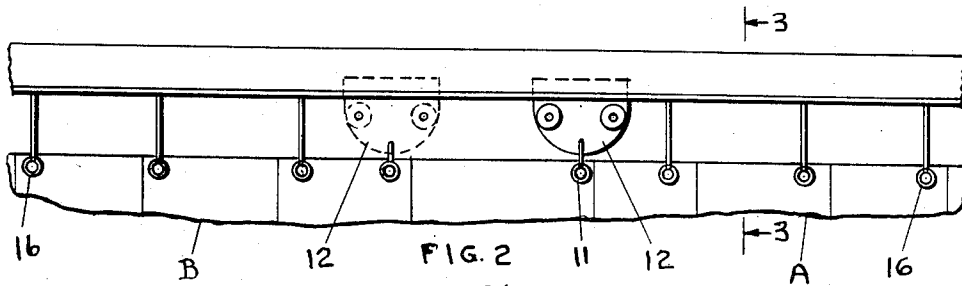


FIG. 2

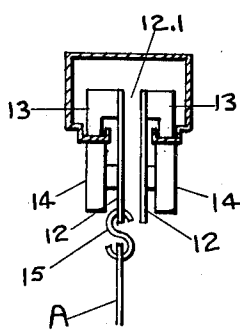


FIG. 3

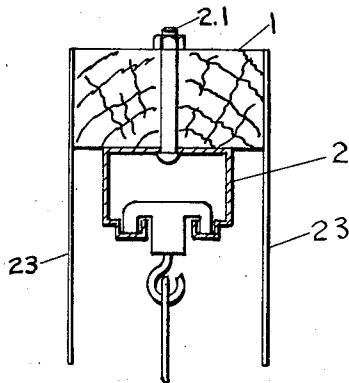


FIG. 4

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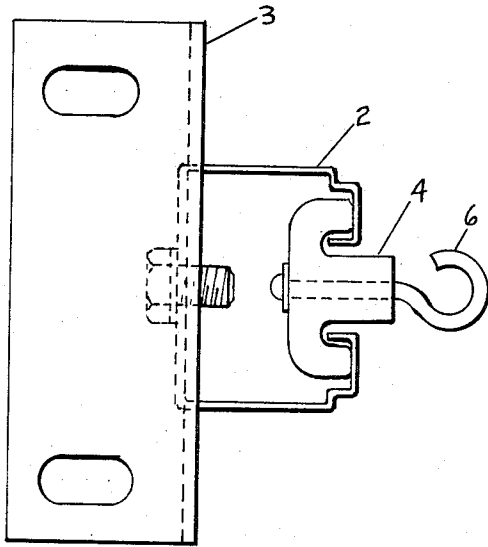


FIG. 5

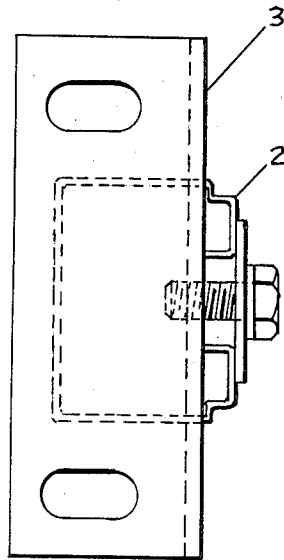


FIG. 6

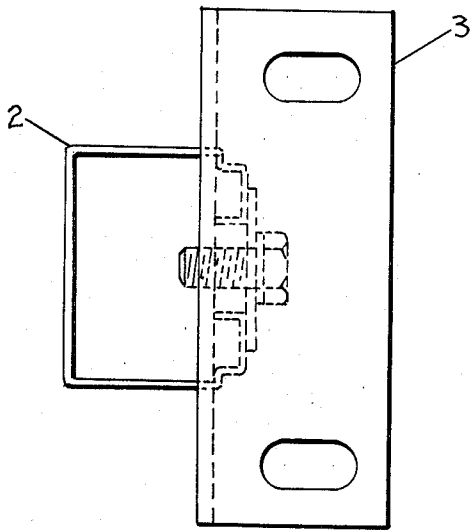


FIG. 7

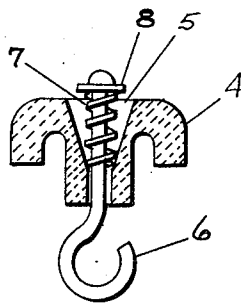


FIG. 8

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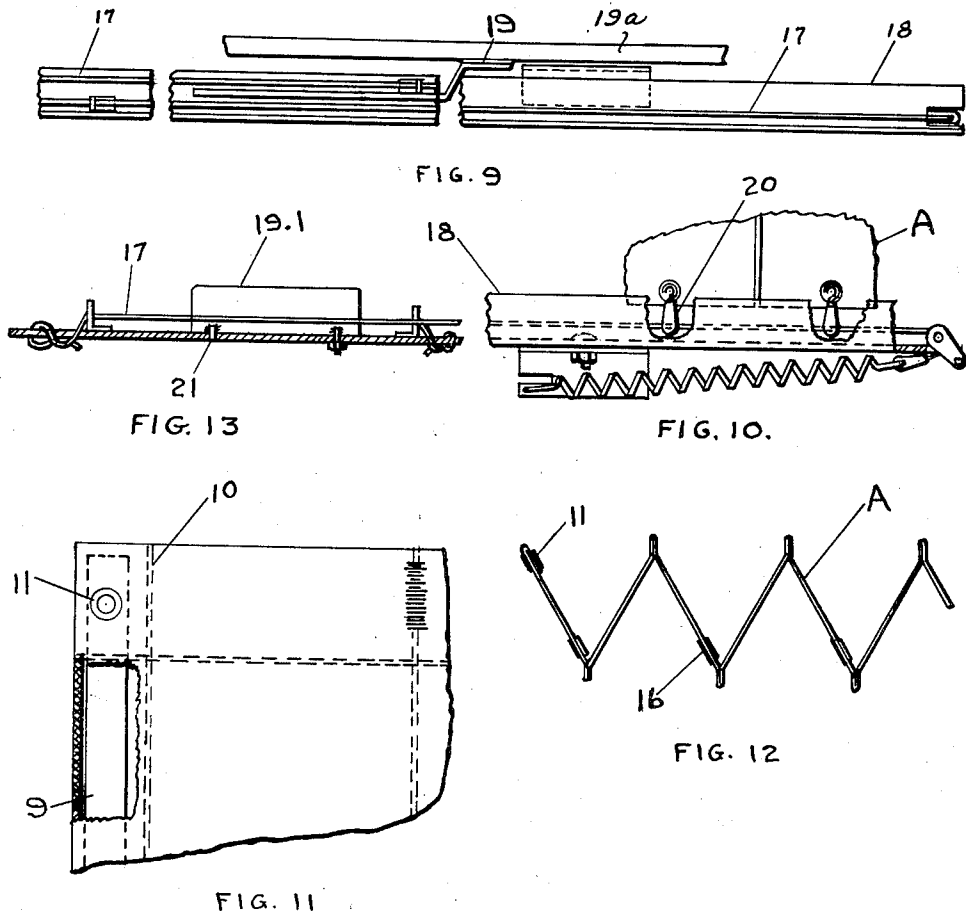
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REFRIGERATOR CURTAINS AND MOUNTINGS

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3 Sheets-Sheet 3



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## REFRIGERATOR CURTAINS AND MOUNTINGS

John Arthur Bussard, Rock Island, Ill.

Application July 15, 1954, Serial No. 443,687

1 Claim. (Cl. 160—84)

My invention relates to curtains for refrigerator compartments of milk trucks or similar vehicles and improved means for securing them in vertical position whether open or closed.

The objects of my invention are to provide a curtain or pair of curtains of superior strength and durability; to provide mountings for such curtains which will enable them to withstand the impact of a load thrown against them in case of accident or collision; to provide improved means for suspending and controlling the position of such curtains and for opening and closing the same; to provide curtains in two sections with convenient and efficient means by which the inner edges of the sections may be readily moved into overlapping position when closed while retaining their vertical position; to provide improved forms of carriers for such curtains of superior strength, efficiency, durability and stability, and to provide carriers for the top of the curtains which will prevent displacement or jamming of the curtains and insure easy and effective movement thereof in opening or closing.

I accomplish these objects by the means shown in the accompanying drawings, in which—

Figure 1 shows a perspective view of a truck with my curtains in closed position thereon;

Figure 2 shows a front elevation of the upper track with a portion of curtains suspended therefrom;

Figure 3 shows a cross-section of the upper track on the line 3—3 of Figure 2;

Figure 4 shows a detail of one of the upper carriers for the inner edges of the curtain;

Figure 5 shows a detail of one of the intermediate carriers;

Figures 6 and 7 show alternate positions of brackets for the upper track;

Figure 8 shows a section on the middle line of a lateral hanger;

Figure 9 shows a top view of the lower track and a divider mounted therein;

Figure 10 shows a fractional detail of the lower track and an alternate form of divider for the lower track;

Figure 11 shows a fractional top view of one of the curtains with a part broken away to disclose the stiffening rods at the inner edge thereof;

Figure 12 shows a fractional top view of the curtain;

Figure 13 is a sectional detail of the lower part of anglebar 18 with a stationary divider 19.1 secured thereon.

Similar numerals refer to similar parts throughout the several views.

My apparatus comprises a pair of curtains of heavy fibrous material preferably of No. 12 beat canvas or of similar material of similar weight and strength.

Each curtain is of sufficient length to reach from close to the top to the bottom of the refrigerating compartment of the cab. Each curtain is folded lengthwise into pleats. For most purposes, these pleats should be approximately 4½ to 5 inches in width but the width may be varied to

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suit the requirements which may arise for different-sized openings or for various conditions.

The folded edges of the pleats are firmly stitched together with strong thread or cord and the stitched doubled portions form ribs which add substantially to the strength and stiffness of the curtains when in closed position and their resistance to accidental displacement in case of accident. At the top of each pleat for a distance of one inch or more, double stitching is applied so as to greatly strengthen the union at that point.

For convenience of reference I refer to each of the two sections of curtains forming a single pleat as a leaf. The rear sections of one leaf of each pleat are provided with an eyelet reenforced with a metal ring or other suitable means and both the front and rear edges of the respective pleats are stitched as described.

At the upper part of the cab or refrigerator compartment, a crossbar 1 preferably of timber about one and a half by three inches in dimensions, is mounted and carried bolted thereto a track 2 of the type now commonly known as the "Kirsch Track" as shown in Figure 4 by bolts 2.1 or the track may be mounted on brackets 3 secured to the side walls of the truck by bolts, screws, or other suitable means.

Figures 5, 6 and 7 show an alternate form of similar brackets by which the Kirsch track may be mounted at varying heights to accommodate variations in the lengths of the curtain, which bracket is formed of a short anglebar having a vertical member which may be fastened to the wall of the truck by screws, bolts or other suitable means. No claim is made for any particular form of screw or bolt. The vertical part of the bracket has a horizontal portion united thereto at a right angle which is provided with slots in which the side members of the Kirsch track may be inserted while the top of the Kirsch track is held parallel to the horizontal member of the bracket. The track may be mounted below the bracket as in Figure 5 or on a level with the bracket as in Figure 6 or the bracket may be reversed and the track mounted at the top of the bracket as shown in Figure 7, thus affording a limited vertical adjustability of the curtains to accommodate varying lengths thereof.

Slidably mounted within this track upon said rails are carriers 4 preferably of nylon or similar plastic having central openings in the top thereof, with bores 5 extending downwardly in which hooks or ring bolts 6 are mounted. The shanks of said hooks have mounted thereon small compression springs 7 which are held in place by washers 8 at the top of the shanks secured by swaging of the shanks as in Figure 8. The hooks upon the lower ends of the shanks are passed through the eyelets in the top of one leaf of each pleat of the curtains A and B, and four or more such eyelets and hooks as needed will be used for each section of the curtain when a two-section curtain is used.

At the inner edge of each curtain a flat bar 9 of iron or steel is secured in place by stitching 10 or other suitable means, preferably about half an inch wide, one-quarter or one-eighth of an inch thick and extending for the full height of the curtain.

At the innermost eyelet 11 of each curtain, the curtain is supported by a terminal carrier as shown in Figure 2 which is slidable upon one side rail of the track and has a pair of wheels 14 arranged to run under and along the lower edge of the rail. Each of these carriers includes a flat plate 12 of metal having an opening 12.1 in the lower edge thereof in which a hanger 15 may be mounted to hold the inner edge of the curtain and the upper end of the bar 9 thereto.

The track is an inverted channel with its lower edges

flanged inwardly to form rails upon which the carriers for the curtains may run or slide.

Blocks or lugs 13 of nylon are united to the metal plates of each carrier to travel along and upon one of the rails. A pair of spaced wheels 14 of nylon or other suitable material are journaled or rotatably mounted upon each of the metal plates to run along the under side of its rail. A hook or link 15 is suspended from each metal plate between the wheels with its lower end engaging the innermost eyelet 11 of its corresponding curtain. This form of carrier with two spaced wheels is effective to prevent tilting or binding of the carrier and insures easy movement and stable position of the carrier and curtain at all times.

The rails of the Kirsch track are spaced far enough apart and the terminal carriers are thin enough and so spaced that they can pass each other freely when the curtains are being closed or opened and thus allow the curtains to overlap substantially at the middle of the truck. I prefer to have them overlap for a space of about eight or nine inches as that will be enough to prevent air currents between them, but the extent of the overlap may be varied without departing from the spirit of my invention.

In order to facilitate the closing of the curtains, I provide resilient cables 17 and a track or bar 18 as shown in my co-pending application Serial No. 386,788, filed October 19, 1950, now Patent 2,748,851, issued June 5, 1956, but have improved same by adding a divider 19 which will prevent the links or hooks 20 which secure the lower ends of the curtains to one cable from contacting the links or hooks upon the other cable as the curtains pass in being closed. The bar 18 is a transverse anglebar and may be secured to the walls of the compartment just below the lower edge of the curtains or to the floor by supports or by any suitable means. The crossbar 19a may be of wood or metal mounted in the compartment parallel to the anglebar 18. The divider 19 is a thin, flat bar of metal or other suitable material standing on edge. One end of it may be united to a cross-timber 19a by bolts, screws, or other means and its main portion may be united to the horizontal portion of the anglebar 18 by soldering or welding or by pins or bolts 21 as illustrated in connection with the divider 19.1 in Figure 10.

The tension springs shown as attached to one of the cables in Figure 10, are covered in the co-pending application above referred to and not specifically claimed in this application.

The pleated form of my curtains and the projecting ribs formed by the stitching adds greatly to the strength of my curtains and promotes the safety of the driver by providing a barrier against forward projection of the contents of the compartment in case of a collision and has already proven effective in preventing injury to him in such an instance.

The eyelets 16, as clearly shown in Figure 12, to which or in which the hooks 15 are inserted, are preferably located only upon alternate pleats and close to the stitched portion of the eyeletted leaf and its adjoining leaf which is without an eyelet. When so arranged, the leaf intermediate two of the eyeletted leaves is supported by the eyeletted leaves. The short stitched sections adjacent the eyelet will be mounted at the inner side of the curtains so that only the very short projection of the threaded portion will extend inwardly thereby allowing the cases or cartons in the truck to be piled close to the curtains while the outer portions of the leaves which will be three or four times as long as the short portions mentioned, will extend freely forwardly into the space

occupied by the driver and will not contact nor interfere with the cases or cartons being carried by the truck.

Passage of air currents between the top of the curtains and the upper track is prevented by valances 23 of material similar to the curtains secured to or passing over the crossbar 1 or the upper track 2 and hanging down a few inches lower than the curtain top.

The curtains and valances are preferably treated with means to render them fireproof and impervious to air or water.

For convenience, I refer to the innermost carriers for the top of the curtain as the middle or "wheeled carriers" and to all the other upper carriers as "lateral carriers." I refer to the hooked studs or posts mounted in the upper carriers as "hooks." I refer to the parts forming a pleat as a "leaf" or "leaves." The pulleys running under and along and linked to the lower edge of the curtain and along the cables, I refer to as the "lower links" or "pulleyed hangers." I also refer to the inwardly extending flanges formed at the edges of the channel of the Kirsch track as the "rails." I refer to the folds of the material where folded to form the pleats as their "junctions" and to the bar or strip which separates the cables and lower ends of the curtains as a "divider" or "separator."

In making the upper carriers I prefer to form the body of nylon as that has proven of great strength and durability.

Various modifications may be made in the form, materials and arrangements of various parts without departing from the spirit of my invention as expressed in the claim and I do not limit my claim to the precise forms shown in the drawings.

I claim:

35 An adjustable closure for the refrigeration compartment of a milk truck including a pair of spaced parallel tracks rigidly mounted in the upper part of the compartment, a plurality of manually slidable carriers mounted on each of said tracks each having a supporting hook depending therefrom, a pair of separate pleated curtains of strong, fibrous material, one member of each pleat being suspended by an adjacent supporting hook, said curtains each having been folded into a series of wide pleats along the whole height of the curtain and the adjacent members of each pleat firmly stitched together vertically close to their folds whereby they will naturally resume the pleated position for their full length when contracted but may be drawn into wide-open position when extended all of said supporting hooks being spaced close to corresponding edges of their respective pleats whereby when the curtains open, the pleats will project uniformly in one direction about three-quarters of their width and will project approximately one-quarter of their width in the opposite direction.

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