July 10, 1962 L. T. FULLER 3,043,116

REFRIGERATOR

Filed July 26, 1961 2 Sheets-Sheet 1

Fig. 1

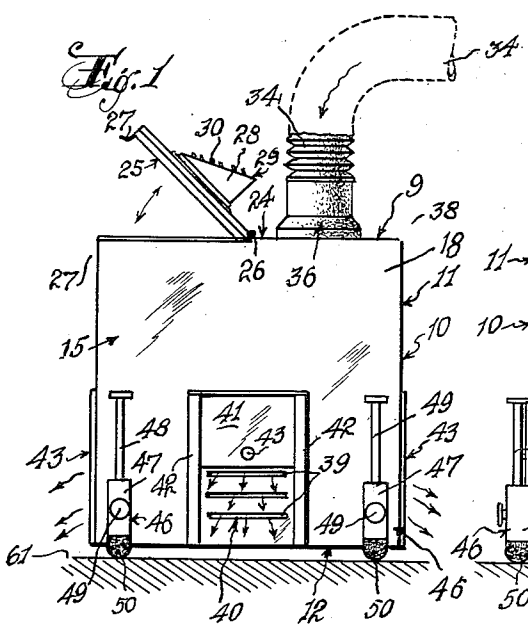


Fig. 2

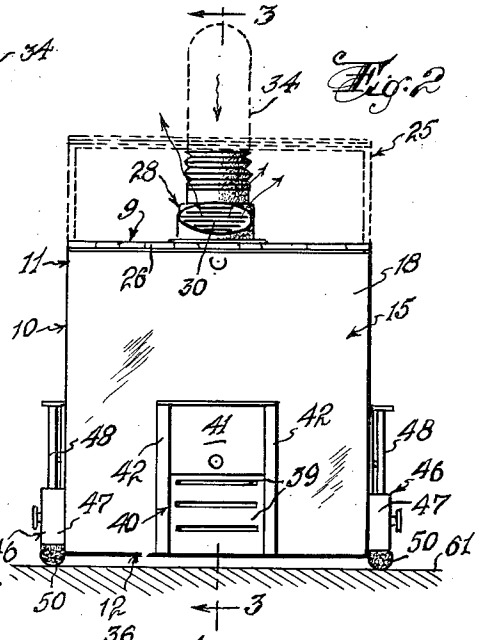
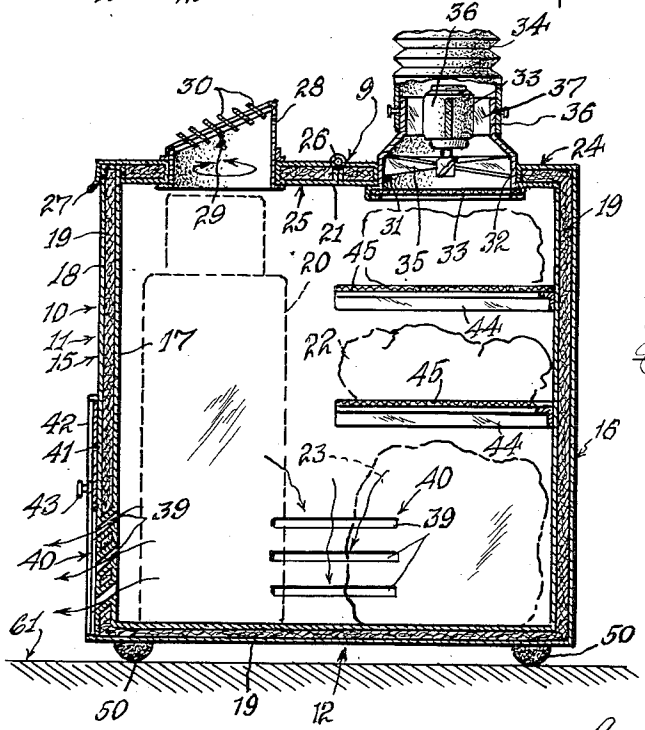


Fig. 3



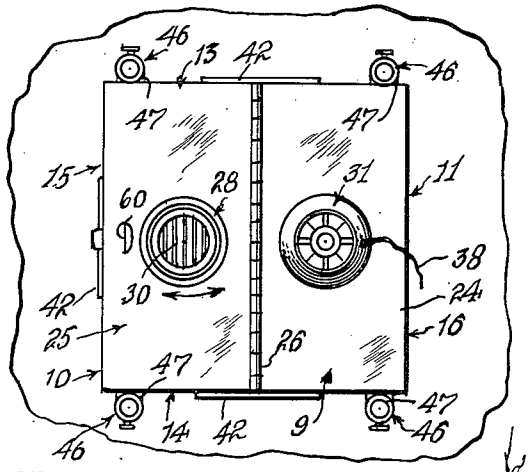
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Fig. 4



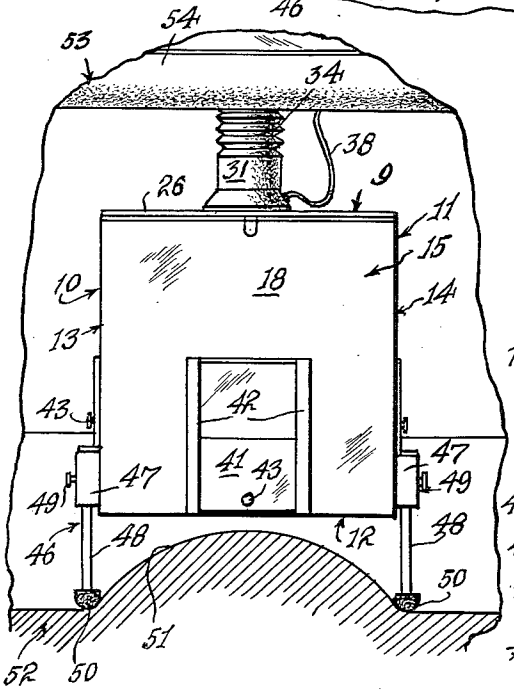


Fig. 5

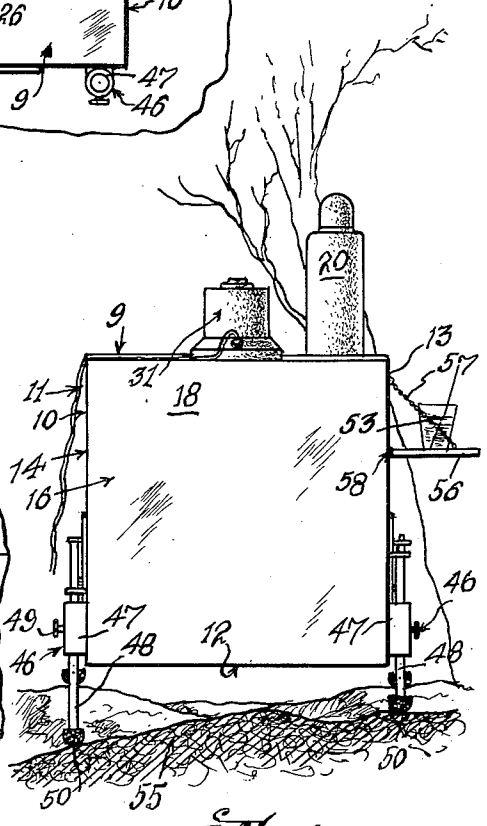


Fig. 6

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REFRIGERATOR

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1 Claim. (Cl. 62—244)

The present invention relates to a refrigerator, and more particularly to a refrigerator for use with a vehicle such as an automobile.

An object of the present invention is to provide a refrigerator which consists of a unit that is adapted to be arranged in a convenient location such as in an automobile or other vehicle whereby cool air that is generated by a vehicle air conditioner can be used for maintaining the interior of the refrigerator of the present invention at a desired cool temperature in order to permit various types of articles such as foodstuffs, beverages or the like to be maintained cool until the same are to be consumed or utilized.

Another object is to provide a refrigerator for a car, truck or the like, and wherein the refrigerator is adapted to be used in conjunction with a conventional vehicle air conditioner, the refrigerator including a flexible tube or duct that is adapted to be connected to any source of supply of cool air such as the vehicle air conditioner whereby the cool air can be conveyed to the interior of the refrigerator or housing so that foods, drinks or the like can be maintained at a desired low temperature, and wherein the present invention also includes adjustable leg assemblies which permit the unit to be readily supported or mounted in different locations such as in the front portion of a vehicle, and wherein there is provided louvers for insuring that the cold air flowing through the refrigerator will be directed into the desired or proper manner or direction.

Further objects and advantages are to provide improved elements and arrangements thereof in a device of the character described that is economical to produce, durable in form, and condusive to the most economical use of materials and uniformity of members formed therefrom.

Still further objects and advantages will become apparent in the subsequent description in the specification.

In the drawings:

FIGURE 1 is a side elevational view of the refrigerator of the present invention, showing the movable section of the top in opened position.

FIGURE 2 is a view taken at right angles to the view shown in FIGURE 1.

FIGURE 3 is an enlarged sectional view taken on the line 3—3 of FIGURE 2.

FIGURE 4 is a top plan view of the refrigerator of the present invention.

FIGURE 5 is a front elevational view illustrating the refrigerator positioned on a vehicle or car floor and showing the humy of the car floor relative to the leg assemblies and showing the relative position of the parts such as the dash board of the vehicle.

FIGURE 6 is a view illustrating a modification and looking at the opposite end from that shown in FIGURE 5, and showing a different use of the refrigerator, as for example showing the refrigerator being used outdoors and showing the adjustable leg assemblies permit the refrigerator to be supported above irregular ground surfaces or the like.

Referring in detail to the drawings, the numeral 10 indicates a refrigerator which is shown to comprise a hollow housing that is indicated generally by the numeral 11, and the housing 11 includes horizontally disposed spaced parallel top and bottom portions 9 and 12, and the housing 11 further includes vertically disposed spaced parallel side wall members 13 and 14 as well as spaced

parallel vertically disposed end or front and back wall members 15 and 16. The housing 11 includes inner and outer spaced apart casings 17 and 18 which have insulation 19 therebetween, FIGURE 3. In FIGURE 3 the numeral 20 indicates in broken lines an article being kept cool within the housing 11, and the article 20 may be a vacuum bottle or the like. Other articles such as the articles 21, 22 and 23 may be conveniently supported in the housing 11 and such articles 21, 22 and 23 may consist of foodstuffs, beverages or the like.

As shown in the drawings the top portion 9 includes a horizontally disposed stationary section 24 as well as a movable hingedly mounted section 25, and the section 25 is hingedly supported as at 26, and the section 25 is adapted to be latched or held in closed position as for example by means of a catch or latch 27, FIGURE 3. The numeral 28 indicates a generally rounded sleeve or rotary element which is rotatably connected to the movable section 25, and the upper portion of the sleeve 28 is inclined as indicated by the numeral 29, and a plurality of spaced parallel slats or louvers 30 are mounted in the upper inclined portion of the rotary element 28, for a purpose to be later described.

Connected to the stationary section 24 of the top portion 9 is a support member 31, and the support member 31 includes a lower portion 32 of increased diameter or size which has a filter 33 contiguous thereto so that air entering the housing 11 will be cleaned and will have any foreign matter removed therefrom before entering the housing. The support member 31 further includes an upper end portion 33 of reduced diameter, and the numeral 34 indicates a flexible tube or conduit which is connected to the end portion 33, and the tube 34 is adapted to be connected to a suitable source of supply of cold or cool air, and for example the tube 34 can be connected to a conventional vehicle air conditioner whereby cool air can be conveyed from such an air conditioner and into the interior of the housing 11 in order to maintain the articles 20, 21, 22 and 23 or the like in a desired cooled atmosphere or temperature.

A fan 35 may be arranged in the lower portion of the support member 31, and the fan 35 is adapted to be driven by a motor 36 which is adapted to be supported by means of a bracket 37, and the motor 36 may be electrically connected to a suitable source of electrical energy such as the vehicle battery by means of an electrical wire or conductor 38, FIGURE 4.

Certain of the wall members of the housing are adapted to be provided with spaced apart inclined slots 39 which define louvered sections 40, and movable or adjustable doors or closures 41 are mounted for movement into and out of opened and closed relation with respect to the slots or louvered sections of the housing. The closure 41 is adapted to be maintained in its proper aligned position by means of guide members 42, and a knob or handle 43 is provided for manually moving the closure 41.

The numerals 44 indicate horizontally disposed brackets or shelf supports which are suitably affixed within the housing 11, and shelves or trays 45 are adapted to be supported on the brackets 44, and the shelves 45 are adapted to be made of reticulated or wire mesh material in order to insure that the cool air can circulate therethrough with a minimum amount of interference.

The refrigerator of the present invention further includes a plurality of independently adjustable leg assemblies which are each indicated generally by the numeral 46, and each of the leg assemblies 46 includes a mounting member 47 that is secured to or formed integral with a lower corner portion of the housing 11. The numeral 48 indicates a leg which is adjustably connected to each mounting member 47, and the legs 48

are vertically disposed and the legs **48** may be held stationary in their adjusted positions by means of screw members or set screws **49**. Base pieces **50** are affixed to the lower ends of the legs **48**. In FIGURE 5 the refrigerator is shown in position above the usual hump **51** of a vehicle floor **52** which may form part of a conventional vehicle such as an automobile **53**, and the numeral **54** indicates the dashboard of the vehicle.

Referring to FIGURE 6 of the drawings there is illustrated a modification wherein the refrigerator is shown being used in a different environment, and as for example the refrigerator can be used outdoors by hunters, campers or the like, and the numeral **55** in FIGURE 6 indicates a portion of a ground surface which may have an irregular contour and due to the provision of the independently adjustable leg assemblies **46**, the refrigerator housing can be leveled by independently adjusting the legs to the proper height or length. The numeral **56** indicates a door or panel which may be hingedly connected to the housing by means of a hinge **58**, and the panel **56** may be supported by holding members such as chains **57** whereby various types of articles such as a glass **59** can be conveniently supported on the member **56** when the member **56** is in a horizontal position. When the member **56** is not being used or when it is not needed, it can be folded up to a vertical position contiguous to the housing so that the parts will occupy a minimum amount of space for storage or shipment.

In FIGURE 6 the flexible hose **34** may be omitted and the unit may be used for causing air to circulate through the housing in a desired manner to permit the circulating air to help maintain the articles in the housing at a desired temperature or humidity.

As shown in FIGURE 4, the movable top section **25** may be provided with a hand grip **60** which can be conveniently gripped as for example when the top section **25** is to be swung upwardly on its hinge **26** in order to permit access to the interior of the housing so that articles can be removed or replaced therein.

FIGURES 1, 2, 3 and 4 show the refrigerator being supported on a generally flat surface which is indicated by the numeral **61**, and such a flat surface **61** may be a suitable part of a vehicle such as an automobile floor or the like. As shown in FIGURE 5 the adjustable leg assemblies **46** permit the refrigerator to be used over irregular surfaces such as the hump shaped portion **51** of a vehicle floor **52**.

It will be seen that with the parts arranged as shown in the drawings, that various types of articles such as foodstuffs, beverages, or the like can be conveniently maintained at a desired cool temperature, and for example the refrigerator **10** may be arranged in a suitable part of a vehicle such as an automobile, and the flexible tube **34** can be connected to the outlet of a conventional vehicle air conditioner. Thus, cold air from the air conditioner will flow through the tube **34** and this air will be filtered by the member **33** so that clean cool air will enter the interior of the housing **11** whereby articles such as the articles **20**, **21**, **22** and **23** can be kept cool for a desired period of time. The air will circulate through the housing and leave through the slots or openings such as the openings **39** and the air can also leave through the element **28**. If desired, certain of the closures **41** can be moved downwardly to closed position in order to close off one or more sets of the louvered sections **40** so that the air can be caused to circulate through different areas or portions of the refrigerator housing as desired or required. Also, these closures **41** may be moved to a partially open or partially closed position in order to provide a further means for controlling the cooling in the refrigerator. Any suitable types of articles can be supported in the refrigerator housing, and for example a vacuum bottle such as the vacuum bottle **20** containing beverages can be arranged inside the housing, or else foodstuffs, beverages or the like in suitable containers or the like can be supported in various parts of the housing. The articles can be supported on the shelves **45** which are adapted to be made of foraminous material in order to permit air to circulate therethrough so that the most efficient circulation and cooling action can take place. The motor **36** is adapted to be connected to a suitable source of electrical energy by means of the wires **38**, and the motor **36** is adapted to rotate the fan **35** which can be used to facilitate the movement of air through the refrigerator.

The element **28** may be rotated so that the inclined portion **29** is at a desired angle so that for example maximum benefit can be taken of wind blowing in a certain direction in order to use such outside wind to most efficiently aid in outflow of air from the interior of the housing **11**. In certain instances the motor **36** and fan **35** may be omitted. The refrigerator may be supported on a flat surface such as the flat surface **61** which may be part of a vehicle floor or the like. Or, the refrigerator can be supported over a vehicle raised portion or hump **51** as shown in FIGURE 5, or else the unit may be used outdoors on irregular surfaces such as the surface **55** which may be ground surface in the vicinity of a wooded area, lawn or the like. Due to the provision of the leg assemblies **46** which can each be adjusted independently of the other, the housing can be maintained level. To adjust the leg assemblies **46** it is only necessary to unloosen the member such as the screw member **49** and the leg **48** can be moved to a desired position in order to cause the base piece **50** to engage a raised or lowered surface and then the screw member **49** can then be tightened in order to maintain the legs **48** stationary in their adjusted positions.

The arrangement shown in FIGURE 6 is such that the flexible tube **34** can be omitted so that cool air in the vicinity of a wooded area for example can be circulated through the interior of the housing to help maintain the interior of the housing in a desired temperature or humidity. Or, an elongated flexible tube **34** can be used with the arrangement of FIGURE 6 whereby cool air can be conveyed from a remotely positioned air conditioner of a vehicle, household air conditioner or the like so that with the refrigerator positioned outdoors the articles therein can be kept cool. The top of the housing **11** can be used as a convenient support for various articles such as the vacuum bottle **20**, as shown in FIGURE 6.

While the present invention has been described specifically for use as a refrigerator, it is to be understood that the same can be used for other purposes, as for example the device can be used for maintaining articles warm and in such use, the tube **34** can be connected to a suitable source of warm air such as a heater or the like as for example when the device is being used during winter months or during such times that it is desired to maintain various articles in a heated or warmed condition.

The device is adapted to be made compact and of a rugged construction so that it can be conveniently used and transported in a vehicle or the like, and any suitable material can be used for fabricating the various parts, and such parts can be made in different shapes or contours or sizes as desired or required.

Due to the provision of the rotary element **28** with the louvers **30** therein and the inclined upper section or portion **29**, the element **28** can be rotated or positioned at a desired location whereby the air can be directed outwardly in any direction desired after it has passed through the box or housing. The section **25** may be raised in order to facilitate the removal or replacement of foodstuffs or other articles from the interior of the housing. The blower or fan **35** can be used in such instances where the present invention is connected to an under-dash model air conditioner in order to help insure that sufficient cold air will be blown through the housing. In some instances

the blower is not needed. A unit such as the present invention can be installed as optional equipment during the initial manufacture of the automobile or other vehicle, or else it can be readily installed in existing vehicles as a convenient accessory. Different types of mounting means may be necessary or utilized in order to adapt the unit to different locations or vehicles. The device may be made light in weight and of a rugged and compact construction so that it will be portable, and as shown in FIGURE 5 the device can be used so that its legs straddle the hump 51 in the floor board whereby the base pieces 50 will rest solidly on the floor 52.

Although the invention described is fully capable of achieving the objects and providing the advantages hereinbefore mentioned, it is to be understood that it is merely illustrative of the presently preferred embodiment of the invention and that it is not to be limited to the details of construction herein described other than as defined in the appended claim.

What is claimed is:

In combination with a vehicle having an air conditioning unit, a refrigerator comprising a hollow housing mounted in said vehicle, said housing including spaced parallel horizontally disposed top and bottom portions, said housing further including spaced parallel vertically disposed side wall members and spaced parallel vertically disposed end wall members, said housing including inner

and outer spaced apart casings having insulation therebetween, the top portion of said housing including a stationary section and a hingedly mounted movable section, a support member connected to said stationary section and said support member having a filter arranged adjacent the lower end thereof, said support member including a reduced diameter upper end portion, a flexible tube having one end connected to said reduced diameter upper end portion, the other end of said tube being connected to said air conditioning unit, a motor driven fan mounted in said support member above said filter, a sleeve rotatably connected to said movable section of said top portion and said sleeve including an inclined upper portion, a plurality of spaced parallel louvers mounted in the upper portion of said sleeve, certain of said wall members having spaced parallel downwardly inclined slots therein which define louvered sections, movable closures mounted for movement into and out of opened and closed relation with respect to said louvered sections, brackets mounted in said housing, and reticulated shelves supported on said brackets.

References Cited in the file of this patent

UNITED STATES PATENTS

2,796,822	Nikolajevic	June 25, 1957
2,998,714	Bonzer	Sept. 5, 1961