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ADJUSTABLE BARRIERS FOR VEHICLE INTERIORS

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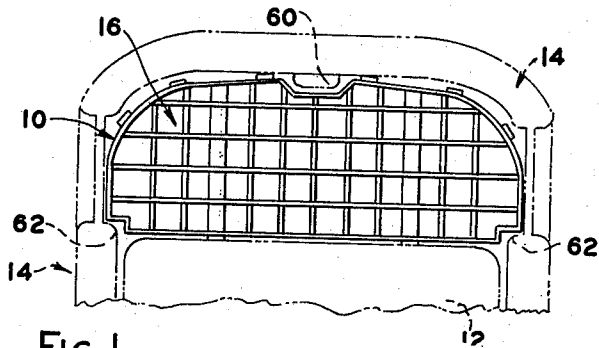


FIG. 1.

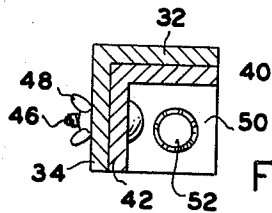


FIG. 4.

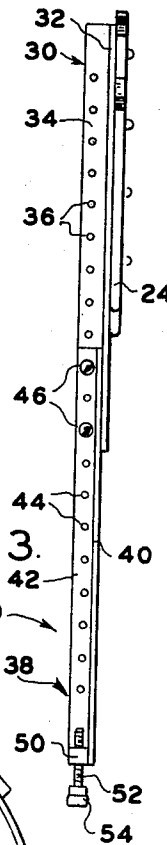


FIG. 3.

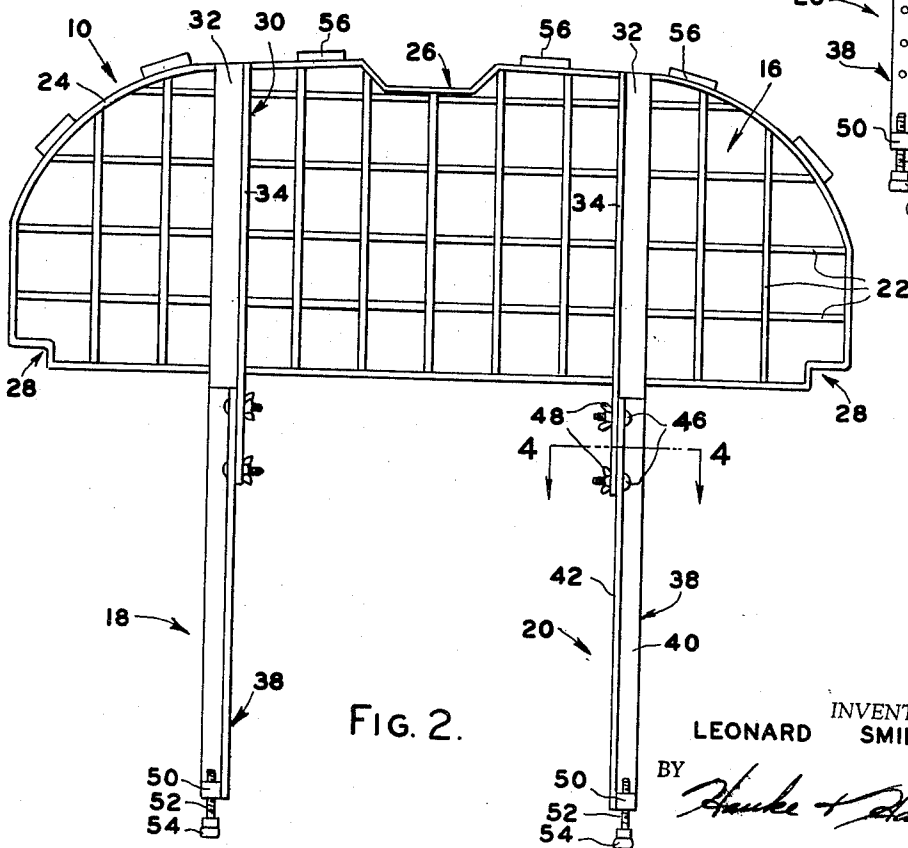


FIG. 2.

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ADJUSTABLE BARRIERS FOR VEHICLE INTERIORS

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8 Claims. (Cl. 296-24)

This invention relates generally to partitions or barriers for automotive vehicles and the like. More particularly, it has reference to an adjustable barrier adapted to be removably mounted in an automobile either as a partition separating contiguous parts of the vehicle interior, or as a barrier preventing children or animals from leaving the vehicle through an open window.

In conventional automotive vehicles, both of the "station wagon" and other varieties, it is frequently desirable to partition the interior of the vehicle into two separate sections. This is the case, for example, where it is necessary to keep animals or children segregated in the rear of the vehicle in order to prevent interruption with the vehicle's operation. It may similarly be necessary to keep the animals or children in the front portion of the vehicle with the driver where they can conveniently be watched.

A similar problem encountered in the "station wagon" type of vehicle is that of preventing the animals or children from leaving the vehicle through the open rear window. In the use of these vehicles, the rear window is frequently opened for purposes of ventilation or for other reasons. When small children or animals are transported in the rear of the vehicle, it is quite possible for them to jump, fall or be thrown out through the open rear window and seriously injured. Similarly, the rear of the vehicle may be loaded with loose packages or objects which might be lost through the open window.

In response to this need for both a barrier and a partition for the interior of automotive vehicles, a device has heretofore been provided in which an elongated screen or grill is fixed to a pair of spaced transverse legs which may be adjusted to brace the device between the floor and ceiling of the vehicle interior. The legs are each constructed of a tubular member welded to the screen and an elongated bolt engaging threads along the interior of the lower end of the tubular member. Adjustment of the height of the structure is accomplished by screwing the bolts in or out of the tubular members.

When the height of the device must be altered substantially, such as might occur if the device is being moved from one vehicle to another, or is being shifted from a position across the open rear window of a station wagon to a position separating the interior of the vehicle into two compartments, the bolts must be advanced or retracted a considerable distance along the length of the tubular members. As a result, this adjusting process is extremely tedious and time-consuming to the user.

It is therefore an object of the present invention to provide a device of this kind in which major variations in the height of the device may be accomplished quickly and easily.

A further object is to provide such a device which is of light weight, is strong, and can be easily and economically fabricated of readily available structural parts.

Other objects and advantages will be more readily apparent from the following detailed description of a preferred embodiment of the invention. The description makes reference to the drawing in which:

FIG. 1 is a fragmentary elevational view of the barrier of the present invention mounted immediately behind the seat in a conventional automotive vehicle, the structure of the automobile being shown in phantom lines;

FIG. 2 is a rear elevational view of the barrier of FIG. 1;

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FIG. 3 is a side elevational view of the barrier of FIG. 1; and

FIG. 4 is a cross-sectional view taken along the lines 4-4 of FIG. 2.

Referring to the drawing in detail, FIG. 1 shows the present device, generally indicated at 10, mounted rearwardly of the front seat 12 in an automobile 14. The present device generally comprises a screen 16 fixed to a pair of parallel spaced-apart vertical legs 18 and 20.

As shown in FIGS. 2 and 3, the screen 16 comprises a plurality of horizontal and vertical strips 22 of metal, plastic or other suitable material arranged in the form of a uniform grid. This grid or screen is elongated in shape and has a narrow outer strip 24 extending about its periphery. The strips 22 are slotted in a manner well known in the art so as to fit together in a uniform fashion and form a flat planar surface on each side of the screen. The outer strip 24 provides additional rigidity to the inner-connecting strips 22. The screen 16 includes a depression 26 along its upper arcuate edge, and a notch or indentation 28 at each of its lower corners.

Each leg 18 and 20 includes an upper angle member 30 having a leg 32 which is welded to the outer strip 24 at the upper and lower edges of the screen 16 along one face thereof. The outstanding leg 34 of the angle member 30 projects away from the screen 16 and is provided with a series of uniformly spaced holes 36. The angle member 30 extends several inches below the lower edge of the screen 16.

A lower angle member 38 is adjustably connected to the lower end of each upper angle member 30. The lower member 38 is adapted to lie within the angle member 30 in the manner indicated in FIG. 4. As can be seen, the member 38 includes a first leg 40 of smaller width than the abutting leg 32, and an outstanding leg 42 of smaller width than the abutting leg 34. The outstanding leg 42 includes a plurality of holes 44 of the same size and spacing as the holes 36 in the upper member 30.

Conventional threaded bolts 46 are each adapted to pass through any pair of aligned holes 36 and 44. Wing nuts 48 retain the bolts rigidly in place and thereby fix the upper and lower angle members 30 and 38 together. Although a pair of such bolts 46 are provided at each of the legs 18 and 20, it can be seen that several more bolts might be employed, if desired. Even when merely a pair of such bolts are provided, pivoting one angle member with respect to the other will be prevented if a wing nut 48 should become loose. Additional bolts would serve to further strengthen the connection between the angle members.

At the lower end of each lower angle member 38, a nut 50 is welded to the legs 40 and 42. A fine adjustment screw 52 is mounted in the nut 50 and is provided with a resilient rubber cap 54 at its lower end.

A plurality of short pieces of rubber padding 56 are provided along the outer surface of the outer strip 24 at the upper edge of the screen 16.

To install the present device as a barrier between the front and back seats of an automobile, as shown in FIG. 1, the wing nuts 48 and the bolts 46 are removed and the lower angle members 38 slid upwardly along the upper angle members 30. The entire device is placed against the rear face of the front seat 12, screen 16 raised until its upper edge abuts the interior surface of the vehicle roof, and the lower angle members 38 are then moved vertically slightly to align the holes 36 and 44 on the upper and lower angle members, and the bolts 46 inserted and fixed in place with the nuts 48. The fine adjustment screw 52 is then rotated until the entire device is rigidly braced between the floor and the ceiling of the vehicle.

The depression 26 in the screen 16 is adapted to permit the screen to avoid the dome light 60 in the vehicle if this

is necessary. The notches 28 at the corners of the screen 16 fit over the window frames 62 encountered at each end of the screen. These various contours of the screen enable it to be conveniently mounted in most conventional automotive passenger vehicles as shown in FIG. 1. The rubber padding 56 and the caps 54 allow the structure to be rigidly mounted in place without marring the floor or ceiling of the vehicle interior.

If the device is to be moved to another location, the fine adjustment screw 52 is loosened, the nuts 48 and bolts 46 removed, and the entire structure transferred to its new location where it is again assembled in the same manner as set forth above.

When the device is to be used as a barrier for the rear window in a station wagon, it is mounted in front of the window in the same fashion as described above.

It can be seen that the versatility and convenience of the present device may be increased by providing additional holes 36 and 44 and spacing them closer together. The closer these holes are to each other, the less adjustment of screws 52 will be necessary.

It will be apparent to those skilled in the art to which this invention pertains that various changes and modifications may be made therein without departing from the spirit of the invention or the scope of the appended claims.

Having thus described my invention, I claim:

1. In combination with a vehicle having an interior floor and a ceiling, a barrier assembly comprising

(a) a barrier having an upper substantially horizontally extending portion and at least one vertical leg assembly fixed to said barrier to extend downwardly from said barrier,

(b) said leg assembly comprising a first elongated leg member fixed to said barrier, a second elongated leg member movable axially along said first leg member, and means for locking said first leg member at any one of a plurality of predetermined axial positions whereby the axial length of said leg assembly may be varied, and

(c) said leg assembly further comprising a fine adjustment screw means carried at the free end of said second leg member to adjust the length of said second leg member and to engage said vehicle floor and to urge said upper portion of said barrier against said ceiling of said vehicle to thereby rigidly mount said barrier assembly within said vehicle.

2. The combination as defined in claim 1 and wherein said upper portion of said barrier is provided with a depression adapted to accommodate a dome light or the like carried in said ceiling of said vehicle.

3. The combination as defined in claim 1 and wherein said barrier is provided with notches along its lower corners adapted to accommodate window frames and the like.

4. The combination as defined in claim 1 and in which said upper portion of said barrier includes spaced resilient members adapted to engage said ceiling of said vehicle.

5. In combination with a vehicle having an interior floor and a ceiling, a barrier assembly comprising

(a) a barrier having an upper substantially horizontally

extending portion and at least one vertical leg assembly fixed to said barrier to extend downwardly from said barrier,

(b) said leg assembly comprising a first vertical angle member having a pair of vertically elongated leg portions, said first angle member being fixed to said barrier and having one end terminating substantially coincidental with said upper portion of said barrier and an opposite end extending downwardly from said barrier,

(c) one of said leg portions of said first angle member being provided with a plurality of vertically spaced holes,

(d) said leg assembly further comprising a second vertical angle member movable along said first angle member and having a pair of vertically elongated leg portions adapted to respectively engage the leg portions of said first angle member,

(e) one of said leg portions of said second angle member being provided with holes at a spacing identical to that of said first mentioned holes,

(f) said leg portion of said first angle member provided with aid holes engaging said leg portion of said second angle member provided with said holes,

(g) bolt means adapted to be mounted through coinciding holes in said angle member to fix them rigidly together at any one of a plurality of predetermined axial positions whereby an axial position of said leg assembly can be provided which will correspond approximately with the vertical dimension intermediate said floor and said ceiling of said vehicle, and

(h) a fine adjustment screw means mounted at the lower end of said second angle member and adapted to adjust the length of said second angle member whereby upon adjustment of said fine adjustment screw means said barrier will be moved upwardly to bring said upper portion in engagement with said ceiling to rigidly mount said barrier assembly between said floor and said ceiling of said vehicle.

6. The combination as defined in claim 5 and wherein said upper portion of said barrier is provided with a depression adapted to accommodate a dome light or the like carried in said ceiling of said vehicle.

7. The combination as defined in claim 5 and in which said upper portion of said barrier includes spaced resilient members adapted to engage said ceiling of said vehicle.

8. The combination as defined in claim 5 and in which said upper portion of said barrier includes spaced resilient members adapted to engage said ceiling of said vehicle.

References Cited by the Examiner

UNITED STATES PATENTS

2,494,980	1/50	Zuckerman	280—150
2,776,811	1/57	Shaffer	248—354
2,997,331	8/61	Kudner	296—24
3,044,800	7/62	Wicker	296—24 X
3,044,821	7/62	Wicker	296—24

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