Aug. 13, 1968 T. J. BUCKNER ETAL 3,396,851

SUPPORT BRACKET

Filed June 10, 1966

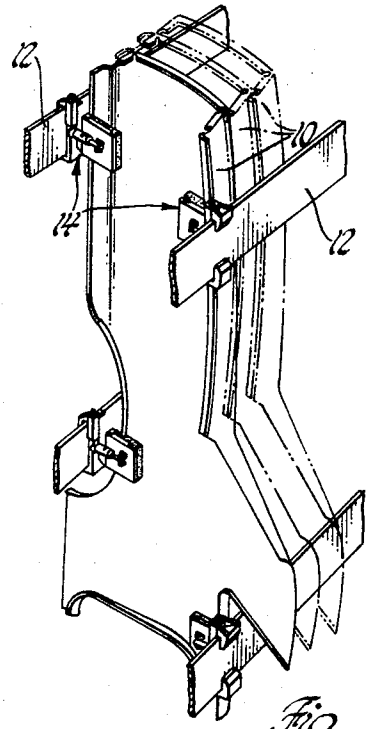


Fig. 1

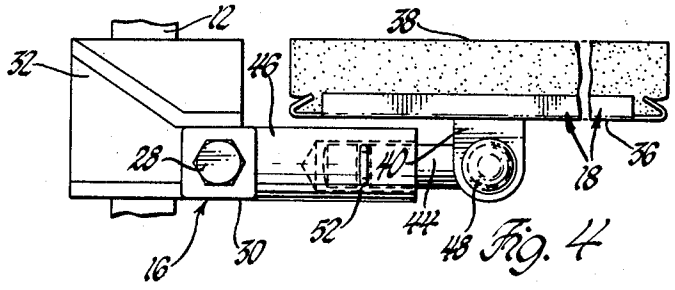


Fig. 4

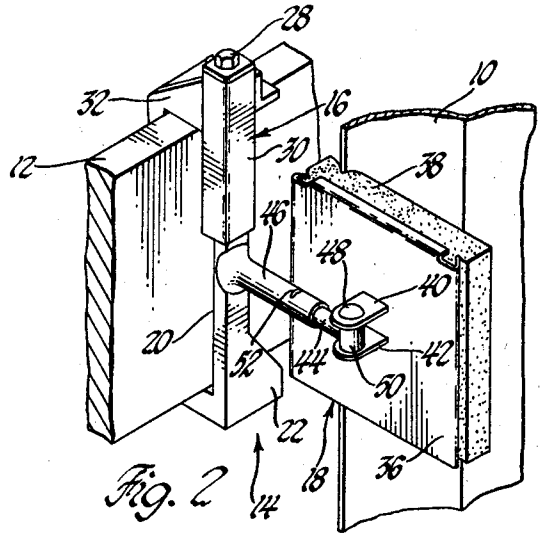


Fig. 2

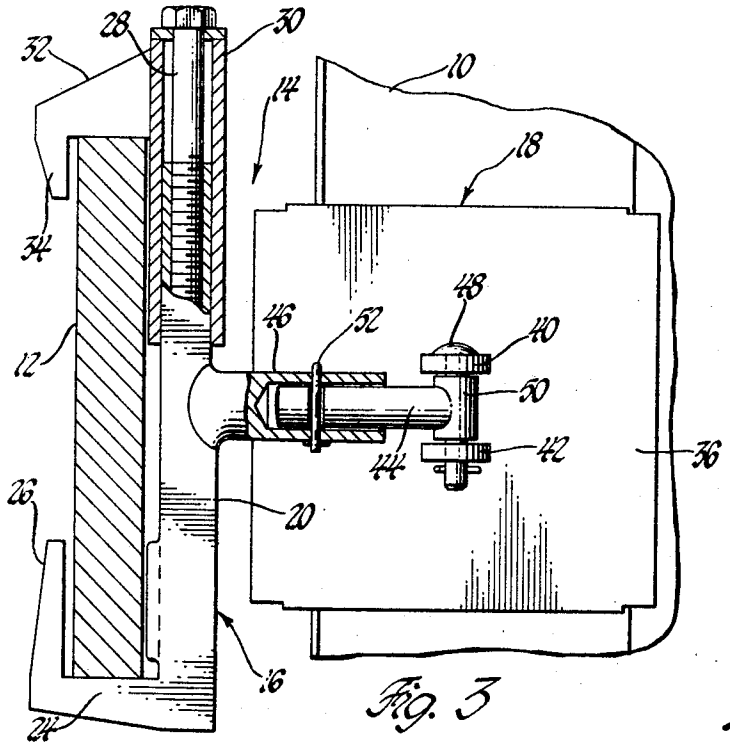


Fig. 3

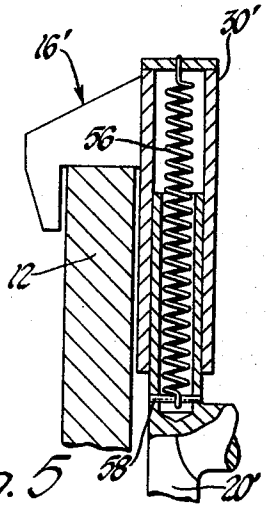


Fig. 5

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SUPPORT BRACKET

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ABSTRACT OF THE DISCLOSURE

A support bracket for holding in place in an upright position a plurality of horizontally stacked sheet metal panels in a transportable container wherein the panels are stacked between horizontal bars. The support bracket includes a clamping portion for attachment to the horizontal bars and a contact portion universally pivotally connected to the clamping portion for supporting contact with the sides of the sheet metal panels.

This invention concerns a support bracket for holding in place and restraining from movement a plurality of stacked sheet metal panels located in a transportable container.

Various vehicle body panels, such as fenders, roofs, deck lids, and the like, are frequently manufactured in different localities around the country. As a result, the panels must be transported by trucks or railroad freight cars from the manufacturing facilties to the final assembly plants. During such transportation, the panels must be suitably supported so as to prevent damage to them and one form of support container used for this purpose consists of a rack type holder having vertical corner bars and a plurality of horizontal bars secured to the corner bars at vertically adjustable positions. In cases where cross bars are provided between the corner bars and the panels occupy the full container, they may hold each other against longitudinal shifting due to movement of the vehicle; however, in most cases, it has been found that additional support means must be provided to assure that no damage occurs to the panels.

The present invention provides such additional support in the form of a support bracket that includes means which facilitate its attachment to and detachment from the associated horizontal support bar. The bracket is characterized by having a universally adjustable contact portion having a resilient surface that provides firm engagement with the panels located between the support bars.

Accordingly, it is an object of the present invention to provide a support bracket that cooperates with the usual support bars of a shipping container for restraining from movement sheet metal panels or other cargo of various shapes.

Another object of the present invention is to provide a support bracket that can be adjusted in position along the length of a lateral support bar used with shipping containers so that stacked sheet metal panels can be held from movement along the longitudinal axis of the container.

A further object of this invention is to provide a support bracket that can be readily attached and detached from the support bars of a transportable sheet metal container and has a universally adjustable contact surface that provides firm engagement with the supported panel irrespective of its outer contour.

A still further object of this invention is the provision of a support bracket for a sheet metal panel retainer that is characterized by having a manually operable clamping means for facilitating the attachment of the bracket to the support bars of the container.

Other objects and advantages of the present invention will be made apparent from the following detailed description when taken with the accompanying drawings in which:

FIGURE 1 is a perspective view illustrating a plurality of the support brackets made in accordance with the invention and associated with a panel retainer having lateral support bars;

FIGURE 2 is an enlarged perspective view of one of the brackets illustrated in FIGURE 1;

FIGURE 3 is an enlarged elevation view of one of the support brackets shown in FIGURE 2;

FIGURE 4 is a plan view of the support bracket shown in FIGURE 3, and

FIGURE 5 illustrates a modified clamping means that can be used with the support bracket of FIGURES 2 through 4.

Referring no wto FIGURE 1 of the drawings, a plurality of identical sheet metal body panels **10** are shown supported between horizontally extending lateral support bars **12** which are located in appropriate vertically spaced positions to abut and thereby retain the panels in an upright position. As seen in FIGURE 3, each support bar **12** is rectangular in cross section and includes a pair of parallel side walls interconnected by upper and lower edges. The opposite ends of each of the lateral support bars **12** (not shown) form a part of a transportable container having vertically extending corner bars or posts to which the ends of the lateral support bars are attached. One example of this type of container can be seen in Ferguson 2,264,264 which is assigned to the assignee of this invention.

In order to restrain the body panels **10** from movement along the longitudinal axis of the support bars **12**, a plurality of identical anti-sway brackets **14** are provided, each of which is clamped to the associated support bar and extends inwardly for engagement with a portion of a body panel. FIGURES 3 and 4 of the drawings illustrate one of the support brackets **14** in detail and, as can be seen in these figures, the support bracket comprises a two-piece clamping portion **16** which is securable to the support bar **12** and a pad portion **18** which is adapted to engage the body panel **10**. More specifically and as best seen in FIGURES 2 and 3, one part of the clamping portion **16** includes a leg **20** that is rectangular in cross section with the lower end flaring into a wider base section **22** that is integrally formed with a laterally extending section **24** which leads to an upstanding arm **26** so as to form a U-shaped pocket for accommodating the lower end of the bar **12**. The upper end of the leg **20** is bored and tapped so as to receive the threaded portion of a bolt **28** associated with the movable gripping part of the clamping portion **16**. The gripping part comprises a rectangular hollow body **30** that telescopes onto the leg **20** and has a laterally outwardly extending section **32** integrally joined with a depending arm **34** so as to form a U-shaped pocket for the upper end of the bar **12**. Thus, when the clamping portion **16** is assembled, as shown in FIGURE 2, tightening of the bolt **28** causes both parts of the clamping portion **16** to grip the opposite ends of the support bar **12** and retain the bracket **14** in a fixed position along the length thereof.

The pad portion **18** has a flat base **36** formed from a generally square sheet metal stamping with the sides thereof crimped inwardly so as to grip and retain a contact pad **38** which can be made from a resilient material such as rubber. The sheet metal base **36** has the rear thereof fixed with a pair of trunnions **40** and **42** which pivotally supports a shaft **44** which in turn is received within a tubular member **46** welded to the leg **20** of the clamping portion **16**. As seen in FIGURE 2, a pin **48** passes through the trunnions **40**, **42** and a hub portion **50** of the shaft **44** for supporting the pad portion **18** for movement about a vertical axis while the shaft **44** is re-

tained for rotation about a horizontal axis within the tubular member **46** by a U-shaped wire **52** located in an annular groove **54** formed in the shaft **44**. It will be noted that the wire **52** is retained by suitable apertures in the tubular member **46** so that axial movement of the shaft **44** relative to the member **46** is precluded. Thus, universal adjustment of the pad portion **18** is provided so that irregular surfaces of the body panels can be firmly engaged.

In assembling the support bracket **14** onto a support bar **12**, the bolt **28** is unscrewed from the leg **20** sufficiently so that the upper gripping part can extend over the bar. The bracket **14** then is adjusted along the length of the bar until it contacts and firmly engages the end body panel **10** whereupon the bolt **28** can be tightened for retaining the bracket **14** in place and holding the panels from any movement in a longitudinal direction. As shown in FIGURE 1, the particular shape of the panel **10** will usually dictate the number of support bars **12** and accordingly support brackets that are to be used. In this case, there are 4 identical brackets **14** engaging the leading edge of the end panel **10** and it will be understood that a similar number can be placed at the opposite end of the series of stacked panels so that movement along the length of the support bars is completely prevented.

A modified form of the clamping portion is shown in FIGURE 5 and identified by the numeral **16'**. In this case, instead of using a threaded fastener such as the bolt **28**, a coil spring **56** is provided which is attached to the upper end of the hollow body **30'** and to a cross pin **58** rigidly secured to the leg **20'**. The spring **56** provides a clamping portion which can be quickly attached and detached from one of the support bars **12** by simply raising the upper gripping part. It will be noted that in this case the support bracket **14** would be retained in position on the support bar **12** by the twisting force acting on the contact portion which is located outboard of the points of attachment to the support bar. In other words, as seen in FIGURE 2, the force acting against the pad **38** will cause a force moment about the longitudinal axis of the leg **20** so as to cock the clamping means onto the support bar **12** and frictionally retain it in position. It should be apparent that a similar action can occur with the bracket shown in FIGURES 1 through 4 and therefore the bolt **28** only has to be tightened sufficiently to place the sections **24** and **32** in engagement with the upper and lower ends of the support bar **12** in order to realize a locking of the support bracket **14** onto the support bar in the manner described above.

Various changes and modifications can be made in this construction without departing from the spirit of the invention. Such changes and modifications are contemplated by the inventors and they do not wish to be limited except by the scope of the appended claim.

We claim:

1. In combination, a plurality of lateral support bars for confining sheet metal panels, each of said support bars having a pair of laterally spaced side walls and upper and lower edges, a plurality of anti-sway brackets mounted on said support bars for holding said panels from movement along an axis substantially parallel to the longitudinal axis of the support bars, each of the brackets comprising, a clamping portion for attachment to one of said support bars, a panel contact portion, a resilient pad supported by the contact portion for engaging a panel, said clamping portion including a pair of telescoping members, each of the telescoping members comprising an elongated leg, a laterally extending section rigid with said leg and terminating with an arm located opposite to the leg and substantially parallel thereto so as to form a U-shaped pocket for accommodating one edge of the support bar, means universally pivotally connecting the contact portion to the clamping portion, said means including a tubular member rigidly connected to the leg of one of said telescoping members intermediate the ends thereof, a shaft member having one end connected to the contact portion by means which provide pivotal movement of the contact portion about an axis substantially normal to the longitudinal axis of the shaft member, the other end of the shaft member being located in the tubular member, means for restraining relative axial movement between the tubular member and the shaft member and allowing relative rotation of said members about their longitudinal axis only, said contact portion being located to one side of the support bar and engaging a panel in a manner so that a force acts about the longitudinal axis of the clamping portion to cock the latter about said axis and cause the side walls of the support bar to be frictionally engaged by the legs and arms of the clamping portion to prevent movement of the bracket along the longitudinal axis of the support bracket.

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