

Dec. 18, 1962

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3,069,199

COVER FOR THE BEDS OF PICK-UP TRUCKS

Filed Sept. 4, 1959

3 Sheets-Sheet 1

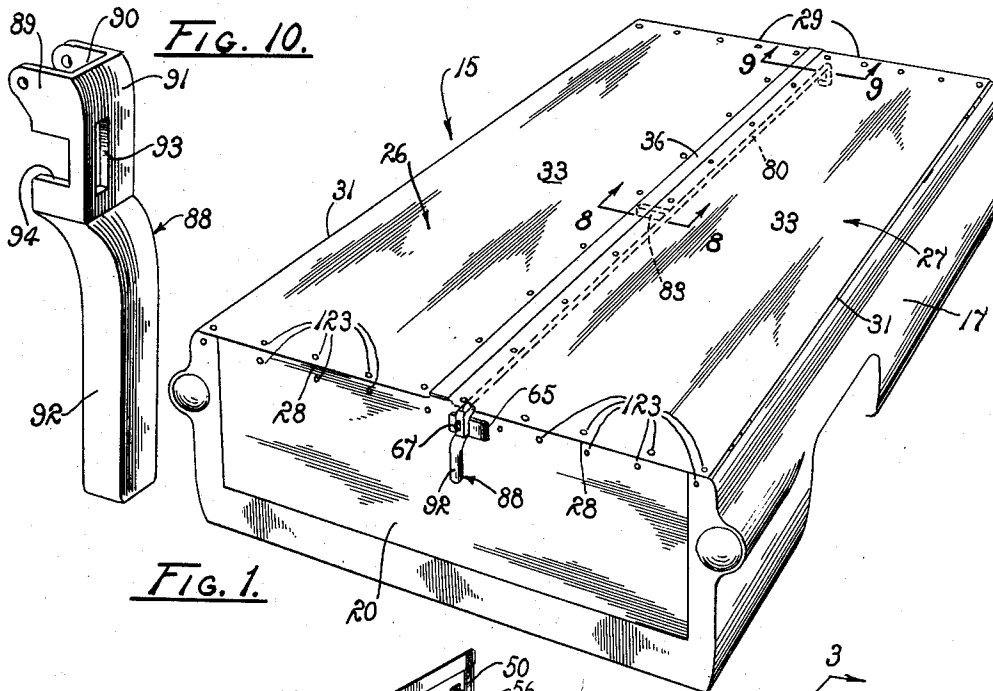


FIG. 1.

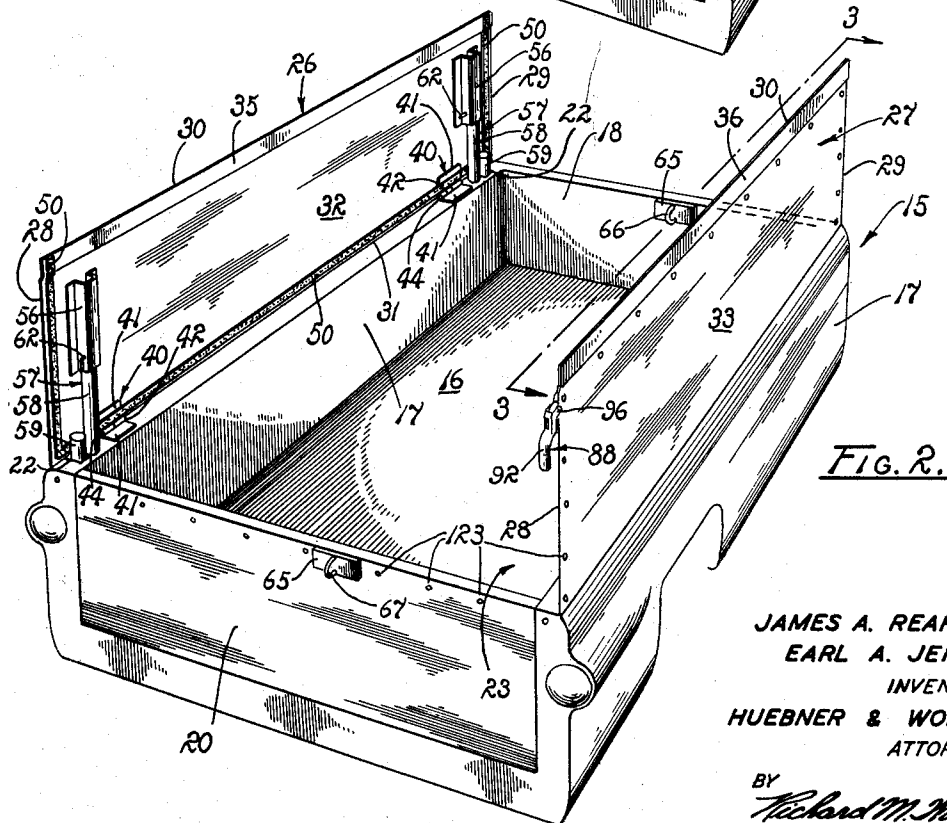


FIG. 2.

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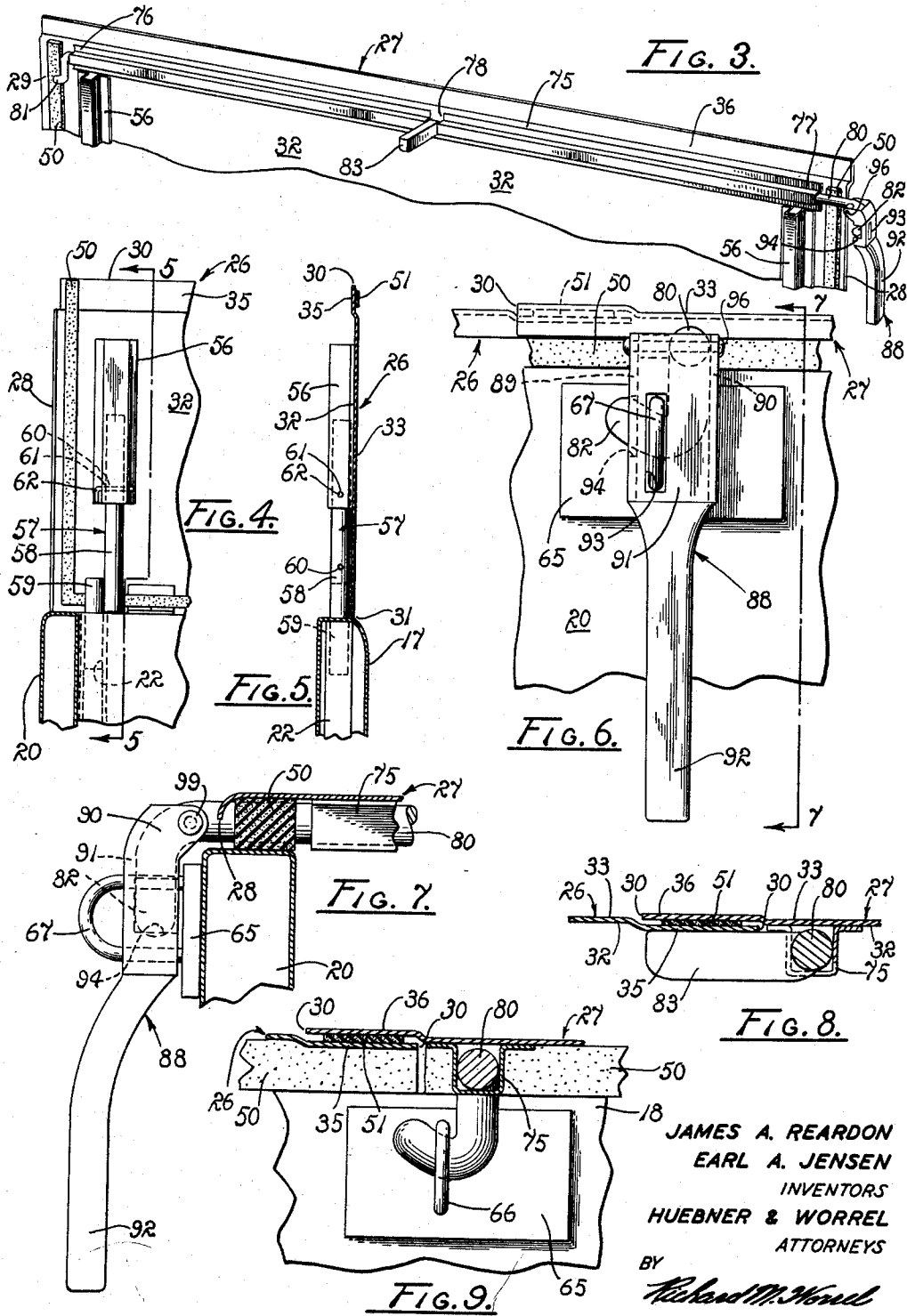
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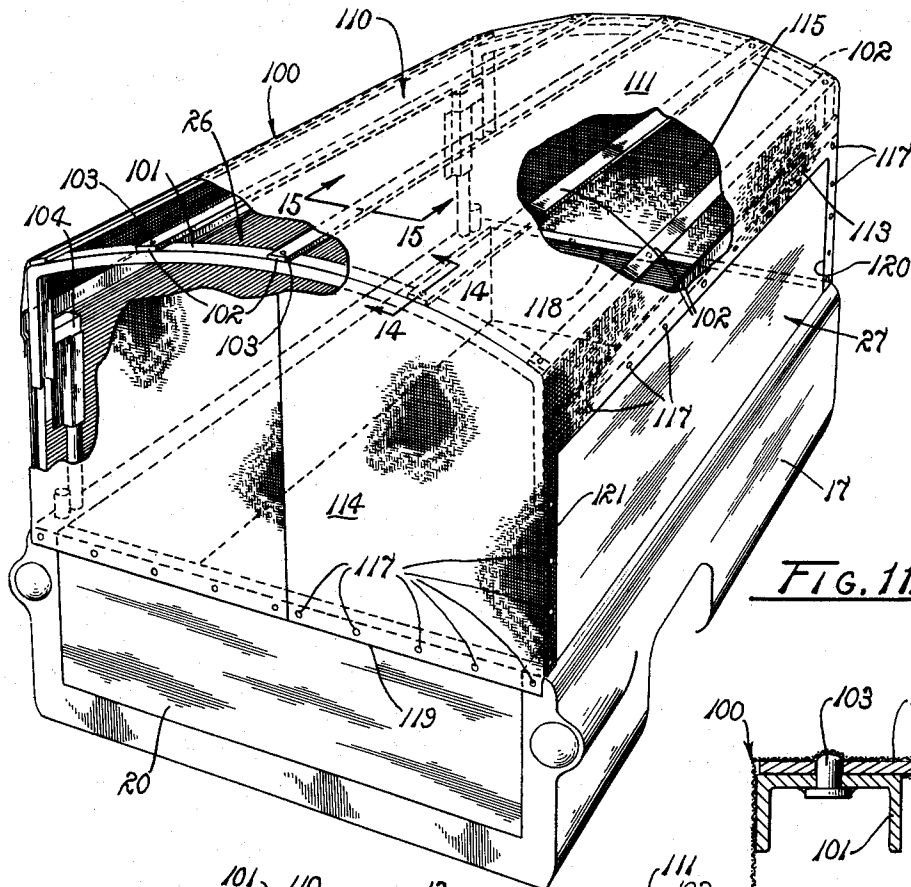
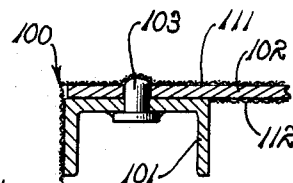
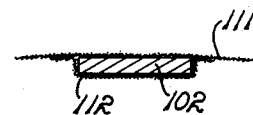
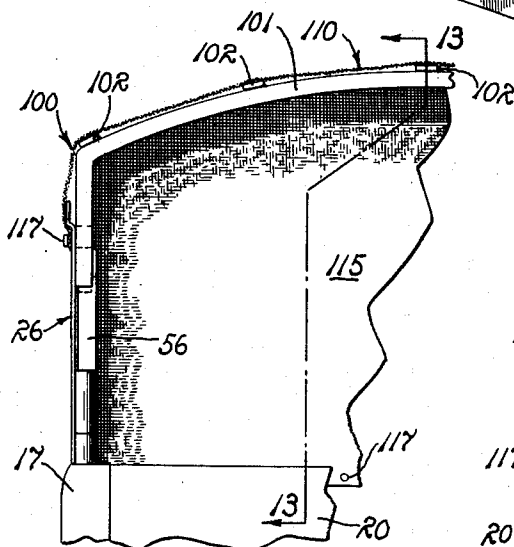
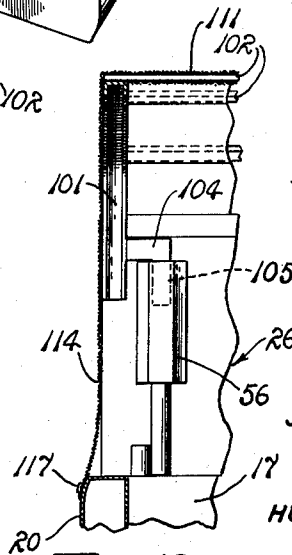
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COVER FOR THE BEDS OF PICK-UP TRUCKS

Filed Sept. 4, 1959

3 Sheets-Sheet 3



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3,069,199

COVER FOR THE BEDS OF PICK-UP TRUCKS

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Filed Sept. 4, 1959, Ser. No. 838,333

9 Claims. (Cl. 296—100)

The present invention relates to a cover for the beds of pick-up type vehicles and more particularly to such a cover including apparatus for dependably holding the cover selectively in open and closed positions.

A conventional pick-up truck includes a bed having a horizontal floor, a pair of side walls upstanding from the bottom wall in spaced parallel relation to each other, a forward wall adjacent to the cab similarly upwardly extended from the bottom wall and interconnecting the side walls, and a rear wall or tail gate, usually hinged to the bottom wall and movable between an upper closed position extended between the side walls and a lower loading and unloading position. The upstanding and bottom walls of the vehicle thus define a receptacle utilized for conveying loads. However, conventional pick-up trucks do not conventionally provide a cover for this receptacle so that the latter is usually open and exposed to the atmosphere.

Of course, it has been known to cover articles placed in the receptacle by means of blankets, canvas, or the like. Such flexible, temporary covering devices are usually somewhat difficult to apply and retain in position and are limited in their ability to protect the contents of the receptacle. Most of the time, the contents of the receptacle are exposed to the atmosphere and thus are not protected from dust, rain, or the like. Still further, such covering means as a canvas offer little or no protection against pilferage of the receptacle.

Accordingly, it is an object of the present invention to provide an improved cover for the beds of pick-up trucks.

Another object is to provide such a cover which can be dependably held in open position for loading or unloading the vehicle or for carrying loads which extend above the height of the conventional walls of the receptacle.

Another object is to provide such a pick-up cover which can be locked in closed position.

Another object is to provide a cover which establishes a weather-tight seal with the walls of the receptacle when the cover is in closed position.

Another object is to minimize damage to, or loss of, the load carried in a pick-up vehicle incident to exposure to the atmosphere or to pilferage.

These, together with other objects, will become more fully apparent upon reference to the following description and accompanying drawings.

In the drawings:

FIG. 1 is a perspective view of the body or bed of a pick-up truck and including a cover embodying the principle of the present invention and shown in closed position.

FIG. 2 is a view similar to FIG. 1 but showing the cover of the subject invention in open position.

FIG. 3 is a fragmentary, somewhat enlarged, perspective view of a portion of one of the cover panels of the subject cover as viewed from line 3—3 of FIG. 2.

FIG. 4 is a somewhat enlarged, fragmentary, side elevation of a portion of the vehicle body and one of the cover panels showing the manner in which the cover panels are held in open position.

FIG. 5 is a transverse section taken on line 5—5 of FIG. 4.

FIG. 6 is a somewhat enlarged, fragmentary, rear elevation of a portion of the vehicle body and cover of the

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present invention showing, in particular, the manner in which the cover panels are latched in closed position.

FIG. 7 is a transverse section taken on line 7—7 of FIG. 6.

FIG. 8 is a somewhat enlarged, transverse section taken on line 8—8 of FIG. 1.

FIG. 9 is a somewhat enlarged, transverse section taken on line 9—9 of FIG. 1.

FIG. 10 is an enlarged perspective view of a hasp as employed in the subject invention.

FIG. 11 is a perspective view of the truck bed similar to that shown in FIG. 2 but with a canopy attached to the cover panels and the vehicle body all in accordance with the present invention.

FIG. 12 is a somewhat enlarged, fragmentary rear elevation of the vehicle and canopy of FIG. 11.

FIG. 13 is a longitudinal vertical section taken on line 13—13 of FIG. 12.

FIG. 14 is a somewhat enlarged, fragmentary section taken on line 14—14 of FIG. 11.

FIG. 15 is a somewhat enlarged, fragmentary cross section taken on line 15—15 of FIG. 11.

Referring more particularly to the accompanying drawings, a pick-up vehicle body or bed is generally indicated by numeral 15 in FIGS. 1 and 2. This body provides a horizontal bottom wall or floor 16, side walls 17 rigidly upwardly extended from the bottom wall in spaced parallel relation to each other, a front wall 18 rigidly interconnecting the side walls and likewise upwardly extended from the bottom wall, and a rear wall or tail gate 20 pivotally connected to the bottom wall for movement between open and closed positions in a well-known manner. The side walls have front and rear sockets 22 located adjacent to the front and rear walls and opening upwardly in the upper edge of the body. It is thus evident that the body provides an open top receptacle 23 adapted to receive a load to be conveyed by the vehicle.

The subject invention provides first and second rectangular cover panels 26 and 27, respectively, each having a rear edge 28, a front edge 29, an inner edge 30, and outer edge 31, and opposite upper and lower surfaces 32 and 33. The first panel has a flange 35 off-set toward the lower surface thereof. The second panel also has an off-set flange 36 but this flange is off-set toward the upper surface of the panel. These flanges are thus off-set in opposite directions and by approximately the same amount.

Hinges 40 include plates 41 connected to the upper edge of the side wall 17 adjacent to the sockets 22, plates connected to the lower surfaces 32 of the cover panels 26 and 27 adjacent to the outer edges 31 thereof, and sleeves 42 rigidly connected to the plates in alignment with each other. Hinge pins 44 are releasably extended through the aligned sleeves of the plates thereby to mount the panels for pivotal movement about longitudinally extended, horizontal axes between open positions upwardly extended from their respectively associated side walls 17 and in spaced substantially parallel relation to each other, as viewed in FIG. 2, and closed positions in a substantially common plane and with the off-set flange 36 of the second panel overlying the off-set flange 35 of the first panel, as viewed in FIG. 1. It is to be noted that the forward hinges are located rearwardly adjacent to the forward sockets 22 and that the rear hinges are located in forwardly adjacent spaced relation to the rear sockets, as best seen in FIG. 2. The pins are releasable from the sleeves and thereby afford a convenient manner for attaching or removing the cover panels.

A lower sealing strip 50 of resiliently flexible and compressible material, such as rubber, preferably extends

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along the outer edge 31 and the rear and front edges 28 and 29 of the panels and on the lower surfaces 32 thereof, as best seen in FIG. 2. The strips along the outer edges extend over the hinge plates 41 on the panels. An elongated upper sealing strip 51 is secured to the upper surface 33 of the first cover panel 26 and against the flange 35 thereof.

Elongated stake channels 56 are secured, as by welding, to the lower surfaces 32 of the panels 26 and 27 in adjacent spaced, parallel relation to the front and rear edges 29 and 28 of the panels. These channels thus extend transversely of the panels and have opposite inner and outer open ends. Stakes 57 include upper portions 58 slidably received in the channels and lower portions 59 rigidly connected in off-set relation to the upper portions. The upper portions of the stakes have axially spaced, transversely extended upper and lower bores 60 therein registrable with transverse openings 61 in the channels. The stakes are movable between lower cover holding positions wherein the upper bores in the stakes are in registration with the openings of the channels, and upper retracted positions with the upper portions of the stakes substantially entirely withdrawn within the channels and with the lower bores in the stakes in registration with the openings in the channels. Pins 62 are provided for insertion through the registering openings and bores in the holding or retracted positions of the stakes. When the cover panels are in their closed positions, the stakes are normally held in retracted positions in the channels 56. When the covers are opened into individual coplanar relationship with their respective side wall 16, the stakes are moved toward their holding positions and the lower portions thereof fitted downwardly into the sockets 22 in the side walls of the body 15. The off-set in the stakes is provided to avoid interference between the channels and the stakes on the cover panels and parts of the body of certain pick-up vehicles. Alternatively, where the problem of interference does not exist a straight stake may be employed.

Brackets 65 are rigidly connected to the rearwardly disposed surfaces of the front and rear walls 18 and 20 of the body 15. A forward staple 66 is connected to the forward bracket and a rear staple 67 is connected and extends rearwardly from a rear bracket. These staples are disposed in a common vertical plane extended longitudinally of the body in spaced parallel relation between the side walls 17.

An elongated carrier channel 75 is rigidly connected to the lower surface 32 of the second cover panel 27 in adjacent spaced, substantially parallel relation to the inner edge 30 thereof and as best seen in FIG. 3. The channel is located immediately adjacent to the flange 36 and provides opposite forward and rearward ends 76 and 77 and an intermediate notch 78.

An elongated torsion rod 80 is rotatably received within the carrier channel 75 and includes front and rear, J-shaped hooks 81 and 82 transversely extended from the rod at the forward and rearward ends 76 and 77, respectively, of the channel. Whereas the front hook is located inwardly adjacent to the front edge 29 of the cover panel, the rear hook is in rearwardly spaced relation to the rear edge 28 of the panel. An intermediate lever 83 is rigidly connected to the rod 80 intermediate the hooks and is extended transversely radially from the rod through the notch 78 in the channel 75.

A hasp 88, as best shown in FIGS. 3, 6, 7 and 10, includes a pair of spaced parallel flanges 89 and 90 rigidly interconnected by means of a web 91, and a handle 92 extended from the flanges and the web. The web has a slot 93 therein, and one of the flanges 89 has a lateral notch 94 therein. The hasp is pivotally connected to the rear hook 82 of the torsion rod 80 so that the hook is adapted to fit between the flanges 89 and 90 and extend laterally outwardly from the hasp through the notch 94.

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A pin 96 extends through the flanges and the rod so that the hasp is pivotal with respect to the rod about an axis extended transversely of the rod between a rod-rotating position in obtuse angular relation with the rod, and a locking position with the hook fully received between the flanges and extended outwardly through the notch.

With particular reference to FIGS. 11 through 15, a canopy 100 is illustrated for use on the vehicle body 15. This canopy includes front and rear, longitudinally spaced, transversely extended rigid arch bars 101 having opposite downwardly extended end portions in alignment on opposite sides of the canopy. Elongated, longitudinally extended, transversely spaced, rigid support bars 102 rigidly interconnect the arch bars. Pins 103 connect opposite ends of the support bars to the arch bars. These bars constitute a canopy frame. The distance between the arch bars is substantially equal to the length of the vehicle body providing the receptacle 23 and the transverse distance between opposite end portions of each arch bar is substantially equal to the distance between the panels 26 and 27 when they are in their open positions. Angulated brackets 104 provide mounting portions rigidly connected to the opposite end portions of the arch bars and extended inwardly of the canopy from said opposite end portions. Each of the brackets also has a downwardly extended stud 105 spaced inwardly from its respectively adjacent arch bar by a distance approximately equal to the spacing of the channels 56 inwardly from their respectively adjacent rear and front edges 28 and 29 of the panels.

A flexible sheathing 110, preferably of waterproof or other weather resistant material, such as canvas, is stretched over the arch and support bars 101 and 102. The sheathing includes a top section 111 overlaying the support bars. A plurality of elongated, longitudinally extended, transversely spaced strips 112 of the same material as the sheathing are sewn, or otherwise secured, to and underneath the top section and provide pockets receiving the support bars. In this manner, the top section of the sheathing is connected to the support bars. The sheathing also has opposite downwardly extended side flaps 113, a pair of separable rear flaps 114, and a front flap 115. The front and rear flaps extend downwardly from the front and rear arch bars 111 and are in generally opposed relation to each other. It is to be understood that the sheathing is preferably custom made to fit in the described manner over the arch and support bars.

A plurality of snap fasteners 117 are connected to the sheathing 110 along the lower front and rear edges 118 and 119 and along the upstanding front and rear side edges 120 and 121. Corresponding fastener elements 123 are provided along the outer upper edge of the tail gate 20, the upper surfaces 32 of the panels 26 and 27 and adjacent to their respective inner edges 30, and also along the front and rear edges 29 and 28 of the panels on upper surfaces thereof.

Operation

The operation of the described embodiment of the subject invention is believed to be readily apparent and is briefly summarized at this point.

In order to attach the cover panels 26 and 27 to the body 15, the panels are positioned on the upper edges of the side wall 17 so that the sleeves 42 of the hinges 40 are in alignment. Thereupon the pins 44 are inserted into the sleeves whereby the panels are mounted for pivotal movement between closed and open positions. In their open positions, the pins 62 are released to permit the stakes 57 to be extended into their holding positions with the lower portions 59 thereof fitted into the sockets 22. In this condition, the cover panels 26 and 27 constitute upward extensions of the side walls and thereby increase the carrying capacity of the body.

Also, with the cover panels 26 and 27 in open posi-

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tions, the vehicle body 15 is readily converted into a temporary sleeping quarter, shelter, or the like. On the other hand it may simply be desired to cover contents in the receptacle 23. Thus, the canopy 100 is placed over the receptacle 23 and the studs 105 slidably fitted downwardly into the upwardly disposed openings of the channels 56. It is to be observed that the stakes 57 only occupy the lower halves of their respective channels when their lower end portions 59 are fitted in the sockets 22 of the vehicle body thereby readily accommodating the studs. When the canopy is mounted in this manner, the opposite end portions of the arch bars 101 fit against the lower surfaces 32 of the panels 26 and 27. Therefore, in addition to the stakes, the arch bars hold the panels in transversely spaced relation. However, utilization of both the stakes and the canopy serve to impart maximum rigidity to the panels in their open positions. The side, rear and front flaps 113, 114 and 115 hang downwardly in overlapping relation to the panels, the tail gate 20, and the front wall 18, respectively. The snap fasteners 117 on the sheathing 110 are then releasably connected to the fastener elements 123 on the body thereby dependably connecting the sheathing in substantially weather-tight relation to the body. Access is readily had to the receptacle by detaching the snap fasteners and the fastener elements holding the rear flaps down, as will be apparent. The canopy serves to provide a sheltered room on the bed for housing perishable produce, easily damaged articles, human occupants, and the like.

After removal of the canopy, the cover panels 26 and 27 are released for movement into their closed positions by releasing the pins 62 and retracting the stakes 57 upwardly into the stake channels 56 whereupon the pins 62 are again inserted through the openings 61 and the lower bores 60. This task is simply and quickly accomplished. The first panel 26 is pivoted downwardly and rested on the upper edges of the front side and rear walls 18, 17, and 20. The second cover panel 27 is then pivoted downwardly so that the off-set flange 36 overlies the flange 35. With the panels closed, the sealing strips 50 engage the front, side and rear walls and provide a weather-tight seal between these walls and the panels. Further, the off-set flange 36 engages the sealing strip 51 to provide a weather-tight seal between the overlapped inner edges 31 of the panels. The receptacle 23 is thus completely enclosed and sealed so as to exclude rain, snow, dust and the like.

To latch or lock the cover, the hasp 88 is pivoted upwardly into its rotating position and the torsion rod 80 thereby rotated by means of the hasp in a clockwise direction, as viewed in FIG. 6. Because of the relationship between the forward and rearward staples 66 and 67 and the torsion rod, this rotation moves the front and rear hooks 81 and 82 into their respectively associated forwardly rearward staples, as best illustrated in FIGS. 6 and 9. It will be evident that this latches the cover panels in closed position. Rotation of the rod also rotates the lever 83 and presses the same upwardly against the flange 35 on the first panel 26. In this manner, the upper sealing strip 51 is sandwiched and compressed between the flanges thereby to provide an even better seal between the inner edges 31 of the panels. The hasp is then pivoted into its locking position with the rear staple 67 extended through the slot 93. A lock, not shown, may be connected to the rearward staple 67 thereby to lock the cover panels in closed position.

It will be evident from the foregoing that a cover has been provided for a pick-up type vehicle which protects the contents conveyed by the vehicle from the damaging effects of the elements and from pilferage or unauthorized tampering. The invention is concerned primarily with convenient means for holding cover panels in open position and for dependably securing the panels in closed positions. When the panels are closed, a weather-tight seal is established between the panels and the body there-

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by to offer additional protection to the contents in the receptacle. When the panels are in their open positions, they increase the carrying capacity of the vehicle and enable the vehicle to be converted into a camping unit or the like.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices and apparatus.

Having described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a vehicle body including upstanding spaced side walls and front and rear walls circumscribing a receptacle, a cover for the body comprising first and second cover panels having upper and lower surfaces and inner edges and being pivotally connected to the side walls for movement between open positions upwardly extended from the side walls and closed positions in a substantially common plane covering the receptacle with the second panel marginally overlapping the first panel adjacent to their respective inner edges, an elongated torsion rod having a longitudinal axis, means rotatably mounting the rod on the lower surface of the second panel in laterally spaced relation to the inner edge of the panel and with its axis extended transversely of and between said front and rear walls, and interengaging means on the rod and on the front and rear walls of the body for releasable interconnection incident to rotation of the rod for releasably holding the cover panels in closed positions as a result of said marginal overlapping and interconnection of the interengaging means, and a lever secured to the rod intermediate the front and rear walls engageable with the first panel for urging the first panel against the second panel when said interengaging means are interconnected.

2. In a vehicle body including upstanding spaced side walls and front and rear walls circumscribing a receptacle, a cover for the body comprising first and second cover panels having upper and lower surfaces and being pivotally connected to the side walls for movement between open positions upwardly extended from the side walls and closed positions in a substantially common plane covering the receptacle with the second panel marginally overlapping the first panel, front and rear staples mounted on the front and rear walls, respectively, an elongated channel mounted on the lower surface of the second panel in laterally spaced substantially parallel relation to the first panel in said closed positions, an elongated torsion rod having a longitudinal axis and rotatably received in the channel for rotation about the axis of the rod between latching and releasing positions, the rod having front and rear hooks releasably extendable through the staples incident to rotation of the rod into latching position when the panels are in closed positions, and a lever secured to the rod between the hooks engageable with the first panel to urge the first panel against the second panel whereby said hooks, staples and lever releasably hold the panels in closed positions.

3. The apparatus of claim 2 including a U-shaped hasp including a web rigidly interconnecting a pair of spaced parallel flanges, the web having a slot therein and one of the flanges providing a notch, the flanges being pivotally connected to the rod adjacent to the rear hook for movement of the hasp about an axis extended transversely of the rod between a rod rotating position in obtuse angular relation to the rod to enable rotation of the rod by the hasp, and a latching position with the rear hook fitted between the flanges and extended laterally outwardly through the notch and with the rear staple extended through the slot in the web.

4. In a vehicle body including upstanding spaced side

walls and front and rear walls circumscribing a receptacle defined thereby, a cover for the body comprising first and second cover panels having upper and lower surfaces and inner edges and being pivotally connected to the side walls for movement between open positions upwardly extended from the side walls and closed positions in a substantially common plane covering the receptacle with the second panel marginally overlapping the first panel adjacent to their respective inner edges, an elongated torsion rod having a longitudinal axis, means rotatably mounting the rod on the lower surface of the second panel in laterally spaced relation to the inner edge of the panel and with its axis extended transversely of said front and rear walls, interengaging means on the rod and on the front and rear walls of the body adapted for releasable interconnection incident to rotation of the rod for releasably holding the cover panels in closed positions as a result of said marginal overlapping and interconnection of the interengaging means, and a lever secured to the rod between the front and rear walls and being engageable with the first panel for urging the first panel against the second panel when said interengaging means are interconnected, said lever being disengaged from the first panel when said interengaging means are disconnected to enable separation of the panels.

5. In a support including wall means circumscribing an opening, a cover for the opening comprising first and second cover panels having opposite inner and outer surfaces and opposite end edges, means mounting the cover panels on the wall means for movement between open positions outwardly extended from the wall means and closed positions in a substantially common plane covering said opening with the second panel marginally overlapping the first panel, front and rear staples mounted on the wall means relatively adjacent to the opposite end edges of the panels in said closed positions, an elongated torsion rod having a longitudinal axis, means borne by the second panel rotatably mounting the rod on the inner surface of the second panel, with its longitudinal axis substantially parallel to the axis of pivotal movement of the second panel, for rotation about said longitudinal axis between latching and releasing positions, the rod having opposite end hooks releasably extendable through the staples incident to rotation of the rod into latching position when the panels are in closed positions, and a lever secured to the rod between the hooks engageable with the first panel for urging the first panel against the second panel whereby said hooks, staples and lever releasably latch the panels in closed positions.

6. In a vehicle body including upstanding spaced side walls and front and rear walls circumscribing and defining a receptacle, a cover for the body comprising first and second cover panels having upper and lower surfaces and pivotally connected to the side walls for movement between open positions upwardly extended from the side walls and closed positions in a substantially common plane covering the receptacle with the second panel marginally overlapping the first panel, front and rear staples mounted on the front and rear walls, respectively, an elongated torsion rod having a longitudinal axis, means rotatably mounting the rod on the lower surface of the second panel, with its longitudinal axis in laterally spaced, substantially parallel relation to the axes of pivotal movement of the cover panels, for rotation of the rod about the axis of the rod between latching and releasing posi-

tions, the rod having front and rear hooks releasably extendable through the staples incident to rotation of the rod into latching position when the panels are in closed positions, and a lever secured to the rod between the hooks engageable with the first panel to urge the first panel against the second panel whereby said hooks, staples and lever releasably hold the panels in closed positions.

7. In a support including opposite end walls and side walls circumscribing a compartment, a closure for the compartment comprising a pair of panels each having opposite side edges, means pivotally mounting a side edge of each panel on a side wall of the support for pivotal movement between open and closed positions, the panels having extended edges which marginally overlap when the panels are in closed positions, an elongated rod, means rotatably mounting the rod longitudinally adjacent to the overlapped edges of the panels, said rod having opposite end hooks, hook engaging means adapted to receive and to release the hooks of the rod when the panels are in closed positions incident to opposite rotation of the rod, one of said mounting means and said receiving means being mounted on the end walls of the support and the other on the panel which overlaps the other when said panels are in closed positions, and a lever secured to the rod intermediate the hooks engageable with the panel which is overlapped when the panels are in closed positions for urging the panels together when the rod is rotated to engage the hooks in the receiving means.

8. In a support including wall means circumscribing an opening, a cover for the opening comprising a pair of cover panels having opposite edges, means mounting the cover panels on the wall means for movement between open positions outwardly extended from the wall means and closed positions in a substantially common plane covering said opening with one panel having an edge marginally overlapping an edge of the other panel, an elongated torsion rod, means rotatably mounting the rod on the panel which marginally overlaps the other panel when the panels are in closed positions and in laterally adjacent substantially parallel spaced relation to the marginal edge of the overlapped panel, interengaging means on the rod and on the wall means adapted for releasable interconnection when the panels are closed incident to rotation of the rod for releasably holding the cover panels in closed overlapping position, and a lever secured to the rod in spaced relation to the wall means engageable with the overlapped panel for urging the panels together when said interengaging means are interconnected, said lever being disengaged from the overlapped panel when said interengaging means are disconnected to enable separation of the panels.

9. The cover of claim 8 in which the interengaging means comprise a hook on an end of the rod and a staple mounted on the wall means in a position releasably to receive said hook.

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