

[54] **CARGO BEAM**

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[56] **References Cited**

UNITED STATES PATENTS

1,548,053	8/1925	Mead	105/369 B X
2,608,420	8/1952	Eck	105/369 B X
2,676,822	4/1954	Modrey	287/20.5 SL
2,988,135	6/1961	Caminiti	211/105.6 X
3,110,506	11/1963	O'Brien	105/369 B X

3,570,412 3/1971 Holman, Jr. 105/369 B

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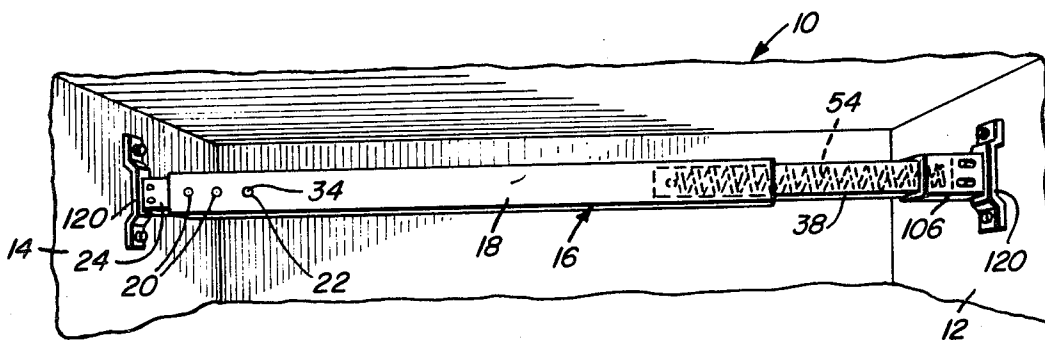
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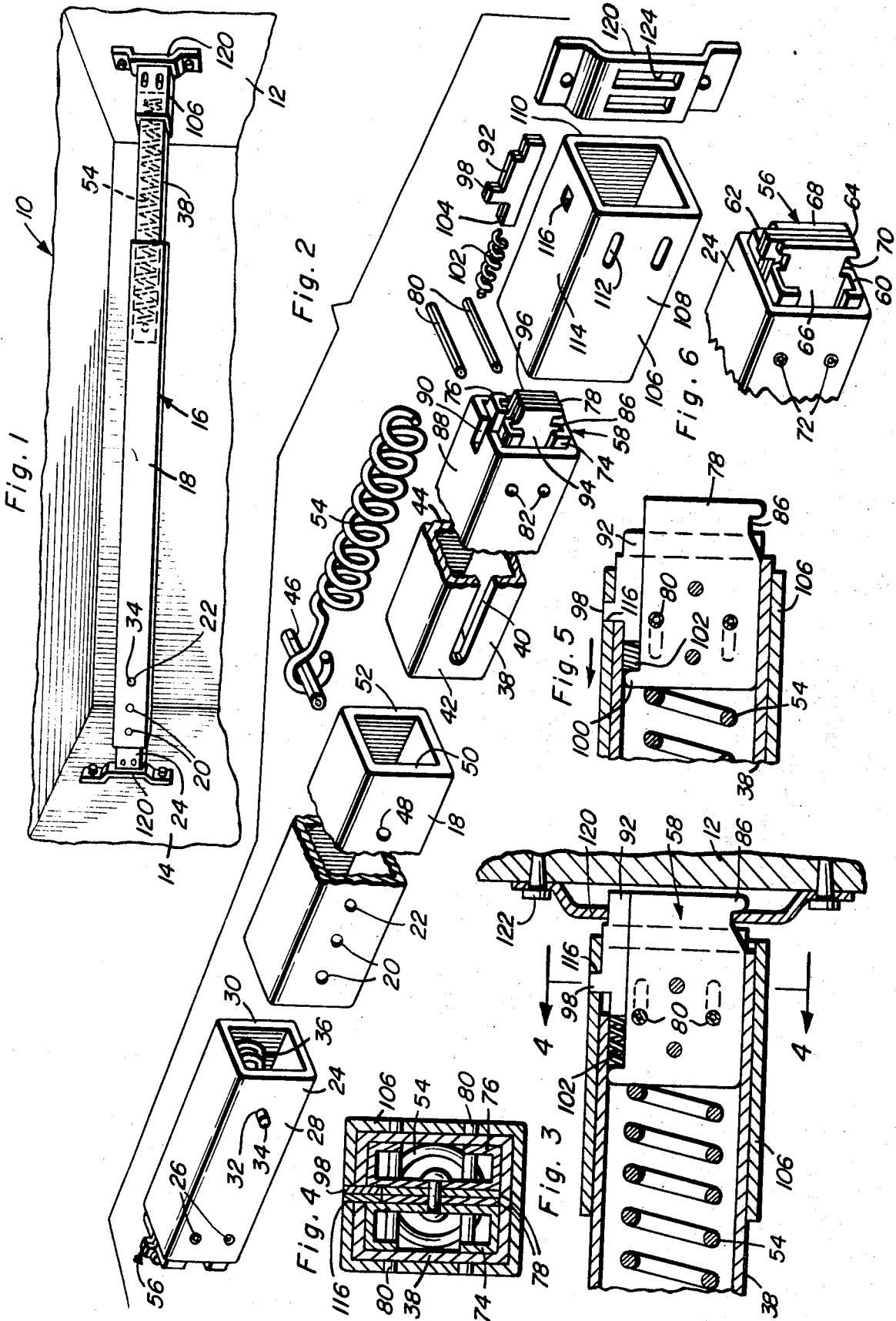
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ABSTRACT

An adjustable length shoring beam including an elongated center section, a first end section supported from and lengthwise adjustable and retractable relative to one end of the center section and a second end section supported from and lengthwise freely shiftable relative to the other end of the center section between maximum and minimum extended positions. Spring structure is provided for biasing the second end section toward its fully extended position and the opposite ends of the shoring beam comprising the remote ends of the end sections include structure for releasable anchored engagement with wall supported anchor structure.

6 Claims, 6 Drawing Figures





CARGO BEAM

The cargo beam of the instant invention has been primarily designed to provide a structure by which a partial load within a load receptacle such as a truck body may be shored against shifting relative to the truck body. In addition, a plurality of the shoring beams may be utilized to divide a load within a truck body or the like and a plurality of sets of the shoring beams may be utilized to form supporting joists for vertically spaced decking structures extending between opposing walls of a truck body or the like.

The cargo beam is constructed in a manner whereby it may be readily released from anchored position with a minimum of effort. In addition, the anchoring structure at the opposite ends of the beams enables the beams to be readily secured in position or released from operative position while the beams are disposed in overhead position necessitating that a workman either placing the beams in position or removing the beams manipulate the latter with his arms stretched over his head.

The main object of this invention is to provide a shoring beam for utilization within a load receptacle and which may be utilized to shore a load against shifting within the receptacle.

Another object of this invention, in accordance with the immediately preceding object, is to provide a beam construction that may also be utilized in groups so as to establish a divider between adjacent loads within the same load receptacle.

Another important object of this invention is to provide a beam construction which may be utilized in sets to define decking joists or beams in order to divide the interior of a load receptacle into a plurality of vertically spaced load receiving compartments.

Still another object of this invention is to provide a beam construction in accordance with the preceding objects including opposite end anchor structure enabling the beams to be readily placed in position as well as released from operative position.

A final object of this invention to be specifically enumerated herein is to provide a cargo beam in accordance with the preceding objects which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

FIG. 1 is a fragmentary perspective view of the interior of a load receptacle with a single cargo beam of the instant invention supported between opposing walls of the load receptacle;

FIG. 2 is a fragmentary exploded perspective view of the cargo beam;

FIG. 3 is an enlarged fragmentary longitudinal vertical sectional view taken substantially upon a plane passing through the longitudinal center of the right end of the beam illustrated in FIG. 1;

FIG. 4 is a transverse vertical sectional view taken substantially upon the plane indicated by the section line 4-4 of FIG. 3;

FIG. 5 is a fragmentary longitudinal vertical sectional view similar to FIG. 3 but illustrating a latch abutment of the associated end of the beam in a retracted position; and

FIG. 6 is a fragmentary perspective view of the end of the beam remote from the end thereof illustrated in FIGS. 3 through 5.

Referring now more specifically to the drawings, the numeral 10 generally designates a load receptacle including opposite side walls 12 and 14. A cargo beam of the instant invention is referred to in general by the reference numeral 16 and is illustrated in FIG. 1 of the drawings as extending between and anchored to the side walls 12 and 14.

The beam 16 includes a hollow elongated tubular center section 18. The section 18 is substantially rectangular in cross-sectional shape and includes a first pair of apertures 20 formed in one end thereof at points spaced longitudinally therealong. In addition, the same end of the center section 18 includes at least one additional aperture 22.

Telescoped within the apertured end of the center section 18 is a first tubular end section 24. The section 24 is also generally rectangular in cross-sectional shape and has a pair of apertures 26 formed in each of the opposite side walls 28 and 30 of the end section 24 with the apertures 26 in the side walls 28 and 30 being registered with each other. Also, the side wall 28 has a third aperture 32 formed therein.

An elongated detent member 34 has one end thereof slidably received through the aperture 32 and the other end thereof is disposed within the end section 24 and includes a diametric enlargement for engagement with the inner surface of the side wall 28. In addition, a coil spring 36 is telescoped about the inner end of the detent member 34 between the abutment and the inner surface of the side wall 30. Therefore, the compression spring 36 yieldingly biases the detent member 34 toward a position projecting outwardly through the aperture 32.

The end section 24 is telescoped within the adjacent end of the center section 18 and the aperture 32 is selectively registrable with the apertures 20 and 22 and accordingly, the detent member 34 may be extended through one of the last mentioned apertures such as the aperture 22 in FIG. 1 whereby the end section 24 may be secured in adjusted extended position relative to the center section 18.

The cargo beam 16 additionally includes a second end section 38 which is tubular and rectangular in cross section. The end section 38 has one end thereof telescoped within the end of the center section 18 remote from the end section 24 and the second end section 38 includes longitudinal slots 40 formed in its opposite side walls 42 and 44. An anchor pin 46 is secured through aligned apertures 48 formed in the side walls 50 and 52 of the end of the center section 18 remote from the first end section 24 and one end of a compression spring 54 is anchored to the pin 46.

The remote ends of the end sections 24 and 38 include terminal ends generally referred to by the reference numerals 56 and 58, respectively. The terminal end 56 includes a pair of oppositely opening channel members 60 and 62 disposed in spaced back-to-back relation and having a plurality of plates 64 disposed between the bight portions 66 and 68 of the channel members 60 and 62. The bight portions 66 and 68 as

well as the plates 64 include extended end portions which define a downwardly opening hook 70 and the terminal end 56 is secured within the free end of the first extension 24 by means of split pins 72 secured through the side walls 28 and 30 and the bight portions 66 and 68 as well as the plates 64. On the other hand, the terminal end 58 includes a similar pair of channel members 74 and 76 as well as a plurality of plates 78 disposed therebetween and the terminal end 58 is secured in the free end of the second end section 38 by means of split pins 80 secured through the terminal end 58 as well as aligned apertures 82 formed in the opposite side walls 42 and 44 of the end section 38. The terminal end 58 also defines a downwardly opening hook 86. Also, the top wall 88 of the second end section 38 includes an endwise outwardly opening longitudinal slot 90 formed in the free end portion of the end section 38 and a double plate abutment slide 92 is slidably disposed within the slot 90 and the space defined between the upper extremities of the bight portions 94 and 96 of the channel members 74 and 76. The abutment slide plates include upwardly projecting tongues 98 which project upwardly through the slot 90 and the inner end of the terminal end 58 includes an upper abutment 100. A compression spring 102 rests upon the upper edges of the plates 78 between the bight portions 94 and 96 and is disposed between the abutment 100 and the end 104 of the abutment slide 92.

An abutment operator sleeve of rectangular tubular configuration is referred to by the reference numeral 106 and is telescoped over the free end of the terminal end 58. The opposite side walls 108 and 110 of the sleeve 106 are provided with registered slots 112 through which the remote ends of the split pins 80 are slidably received. Thus, the sleeve 106 is mounted on the second end section 38 for limited shifting therealong. Also, the top wall 114 of the sleeve 106 includes an opening 116 through which the tongue 98 is received. Thus, reciprocation of the sleeve 106 on the end section 38 will cause the abutment slide 92 to be shifted between the limit positions thereof illustrated in FIGS. 3 and 5 of the drawings.

It will be noted that when the abutment slide 92 is in the extended position thereof illustrated in FIG. 3 of the drawings that the outer end of the abutment slide overlies the upper edge portions of the outer end portions of the plates 78. However, when the abutment slide 92 is in the retracted position thereof illustrated in FIG. 5 of the drawing, the upper edge portions of the outer ends of the plates 78 are uncovered.

In operation, a pair of slotted brackets 120 are secured to the side walls 12 and 14 in any convenient manner such as by fasteners 122. The brackets 120 include vertically extending slots 124 and the hooked ends of the terminal ends 56 and 58 are engageable in selected slots 124. When it is desired to install one of the cargo beams 16, the terminal end 56 thereof has its hook 70 first engaged with the corresponding slotted bracket 120 with the other end of the cargo beam 16 inclined downwardly. Then, as the other end of the cargo beam 16 is swung upwardly, the hook 70 will be anchored through the corresponding slot 124. Thereafter, the terminal end 58 is engaged with its corresponding slotted bracket by first shifting the sleeve 106 to the position thereof illustrated in FIG. 5 of the drawings so as to enable the hook 86 to be inserted through the corresponding slot 24 and thereafter the slide 106 is re-

leased so as to be turned to the position thereof illustrated in FIG. 3 with the abutment slide 92 snugly received in the upper end of the slot 124 with which the hook 86 is engaged. This of course will prevent the hook 86 from being shifted upwardly out of engagement with the lower end of the associated slot 24 and thereby the cargo beam will be securely anchored between the side walls 12 and 14.

As previously hereinbefore set forth, the cargo beam 16 may be used singly or in groups to shore a load within the receptacle 10, to divide a load within the receptacle 10 and to define support beams for vertically spaced decking within the receptacle 10.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. In combination with a structure including opposing walls provided with anchor members secured thereto in opposing relation and defining flange portions generally paralleling and spaced slightly outwardly from said walls and having aligned openings formed therein, an adjustable length member for use in shoring a partial load within said structure, said adjustable length member including an elongated tubular center section, a first elongated tubular end section telescopically guidedly supported from and lengthwise adjustably extendable and retractable relative to one end of said center section, a second elongated tubular end section telescopically guidedly supported from and lengthwise freely shiftable relative to the other end of said center section between maximum and minimum extended positions, means connected between said center and second end sections biasing the latter toward its maximum extended position, laterally opening hook means projecting endwise outwardly from and carried by the remote ends of said end sections removably endwise projected through said openings and laterally displaced into engagement with the edge portions of said flange portions defining the boundaries of said openings toward which said hooks open, an elongated abutment slide supported from one of said end sections for lengthwise shifting relative to said one end section longitudinally of said one end section into and out of position disposed along the side of the corresponding hook means remote from the side outwardly of which said corresponding hook means opens, said abutment slide, when out of said position, being shifted relative to said one end section toward the other end section and when in said position closely opposing the side of the corresponding opening remote from the side of said opening engaged by said corresponding hook means to prevent sufficient movement of the corresponding hook means away from the corresponding flange edge portion to enable lengthwise shifting of said one end section to withdraw the corresponding hook means from the corresponding opening, the outer ends of said hook means being only slightly spaced from said walls when said hook means are engaged with said flange edge portions.

2. The combination of claim 1 wherein said remote end of said one end section includes a sleeve telescoped

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thereover and longitudinally shiftable relative thereto, said sleeve and abutment slide including coacting means anchoring said abutment member to said sleeve for reciprocation therewith.

3. The combination of claim 2 wherein said sleeve and remote end of said one end section include coacting means establishing limits of reciprocation of said sleeve on said one end section.

4. The combination of claim 3 including spring means operatively connected between said remote end of said one end section and said abutment slide yield-

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ingly biasing said abutment slide toward an endwise outwardly extended position relative to said one end section.

5. The combination of claim 1 wherein said end sections are telescoped within the corresponding ends of said center section.

6. The combination of claim 5 wherein said center and end sections are generally rectangular in cross-sectional shape.

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