June 2, 1964 J. J. MARTIN 3,135,528

FOLDING KING PIN

Filed Jan. 5, 1961 2 Sheets-Sheet 1

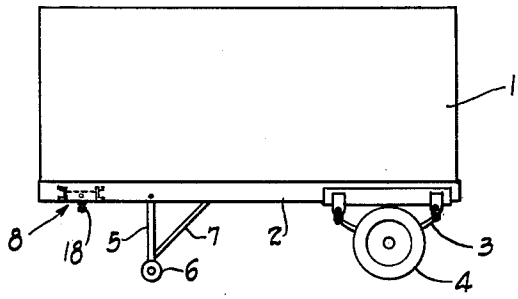


Fig. 1

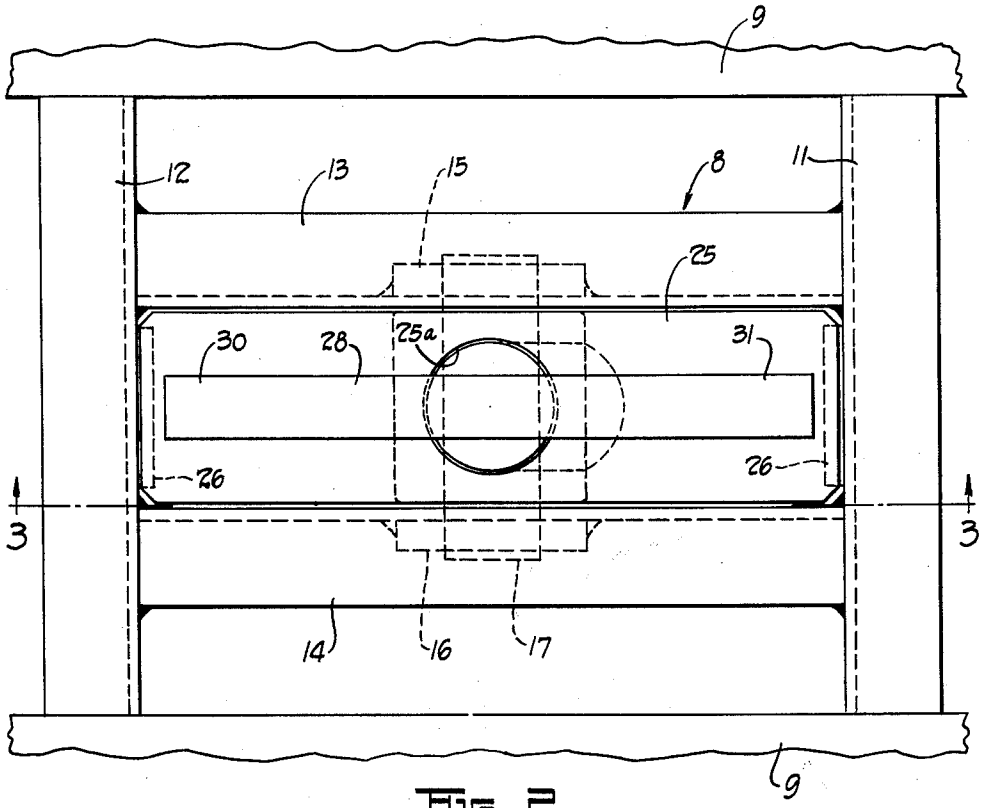


Fig. 2

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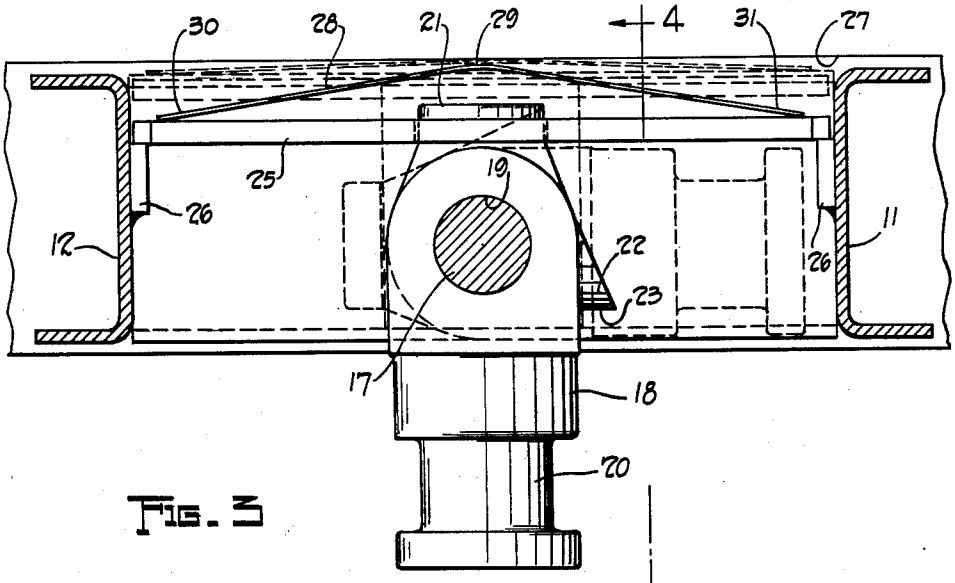


Fig. 3

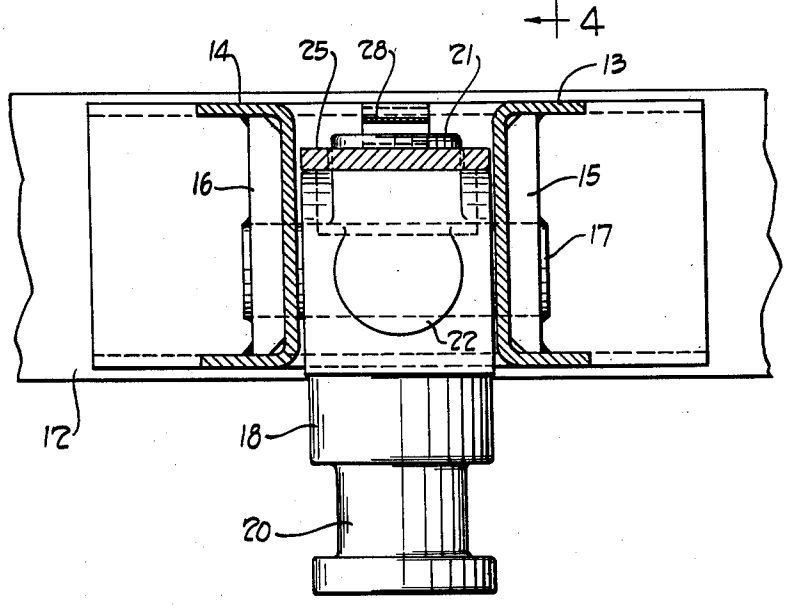


Fig. 4

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3,135,528

FOLDING KING PIN

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This invention relates to trailer body construction, and primarily to certain features thereof which will facilitate the use of the body as a container.

In the art to which this invention is directed, a trailer body is arranged with the provisions of this invention, so as to be a substantially rectangular smooth sided container and have no objectionable protuberances extending therefrom, this being primarily concerned with the under surface of the body which becomes a supporting surface of one kind or another when the wheels and usual supporting means therefor are removed therefrom or otherwise arranged to be positioned out of the way for the purposes set forth.

In prior container body constructions, it has been customary to provide means to remove the wheel supports, whether the same be of tandem or other nature, as by providing for sliding or removable bogies, with the landing gear being foldable into position or removable as the case may be so that the under surface of the body is substantially flat. In order to accomplish this to the best end, however, it has been necessary to remove the king pin or otherwise move the same out of position with usually involved mechanism being required, or dismantling of certain of the mechanism being the necessary method of accomplishing this.

In the present invention, it is contemplated that the usual bogie arrangement will be provided so that the wheels or bogies may be removed from the container, the landing gear may be folded or otherwise removed, and in this instance the king pin which normally extends below the bottom surface of the body, will be folded so as to present a smooth unobstructed area, all accomplished by simple means.

It is therefore a principal object of this invention to provide a king pin construction which will facilitate the folding of the king pin into a recess or other position out of extended operating position, and provide novel means for maintaining the same in such position during the course of use.

Another object of this invention is to provide a novel formation of king pin mounting means so that the king pin may be moved into operative position and maintained therein by simple means, such means being easily manipulatable to facilitate the movement of the king pin into inoperative position and resulting in the maintaining of said king pin in said inoperative position until again required.

Yet another object of this invention is to provide a king pin which will be sufficiently rigid and strong and yet foldable in a transverse direction to move into a pocket in the bottom of the body, so as to be available when required and simply moved into and out of operative and inoperative positions with novel means for maintaining the same in the said positions, all as required in accordance with the circumstances under which the trailer body or container is to be used.

Other and further objects of the invention will be understood from a consideration of the specification appended hereto and shown in the drawings wherein:

FIGURE 1 is a somewhat diagrammatic view of a trailer body or container body with common supporting means therefor and indicating the position of the king pin whereby the body is attached to a tractor or the like.

FIGURE 2 is a plan view of the king pin mounting including certain of the structural instrumentalities therefor.

FIGURE 3 is a sectional view taken about on the line 3—3 of FIGURE 2 looking in the direction of the arrows, indicating the king pin in operative position in solid lines and in inoperative position in dotted lines therein.

FIGURE 4 is a sectional view, somewhat fragmentary, taken about on the line 4—4 of FIGURE 3 looking in the direction of the arrows.

Referring now to the drawings, and particularly initially FIGURE 1, there is shown a container generally designated **1**, supported on a chassis or frame which may be integral and usually will be with the container and designated **2**, a bogie unit designated **3** including the wheels **4** for supporting the same, said bogie **3** being removable in any preferred manner in accordance with known practice.

The landing gear unit **5** is shown as including the usual small wheel at the lower end thereof and designated **6** with suitable bracing means **7**, this landing gear being operative in a manner to fold up into the frame portion **2** of the container **1** when desired.

Generally indicated at **8**, is the pin unit which will be further discussed in detail and which comprises the essential part of this invention, reference being had to the other figures in the drawings for detail construction thereof.

Referring to FIGURE 2 first of all, the unit **8** being the king pin unit hereof, includes certain mounting means, involving the transverse frame members such as **9** and **10**, with certain longitudinal members **11** and **12** extending therebetween and being fastened thereto in any preferred manner, said members **11** and **12** being indicated in FIGURE 3 in section.

Extending between the members **11** and **12**, are further structural members **13** and **14**, which are suitably fastened at their ends to the members **11** and **12** and provide at their central portions the bearing portions **15** and **16** respectively, these bearing portions being in turn fastened to the transverse members **13** and **14** in any preferred manner.

The bearing portions **15** and **16** are arranged to support a heavy pivot pin **17**, which may be rotatively fixed with regard to said bearing sections **15** and **16**, and thus provide a suitable support for the king pin generally designated **18**, the king pin **18** being provided with a central bore **19** mounted on the pin **17**.

The king pin **18** is equipped with the usual reduced section **20** at its lower most extremity, and is generally cylindrical in conformation, terminating at its upper extremity in a somewhat reduced head constituting a lock section **21**, this being circular in plan and constituting a portion of the pivot and lock instrumentalities now being described in detail.

A latch portion **22** is formed on the king pin about as indicated in FIGURE 3 and constitutes a sort of odd shaped protuberance, with the shoulder **23** thereon for purposes which will be explained subsequently.

As will be noted from the drawing of FIGURE 2, the members **11**, **12**, **13** and **14**, form a sort of pocket and as indicated in FIGURE 3 in the upper portion of this pocket is positioned a movable plate **25** generally rectangular in plan and having a central circular opening **25***a* therein.

The plate **25** is supported on retaining bars such as **26**, there being one of these provided at each end of the plate **25** and arranged about as shown in FIGURE 3.

Since the platforms or floor of the container extends above the pocket described, it will form the uppermost closure therefor indicated by the surface **27** and between the surface **27** which is the lower most surface or under surface of the floor of the container, and the plate **25**

there is interposed a leaf spring 28 formed about as indicated in FIGURE 3 the central portion of which at 29 bears against the under surface 27 and the ends 30 and 31 contact the plate 25, whereby the plate 25 is maintained in its position on the bars 26.

With the foregoing explanation of the parts which comprise the king pin construction, an explanation of the operation of the king pin will be provided and includes the positioning of the plate 25 as indicated in FIGURE 3 with the central opening 25*a* therein, engaging the lock section 21 of the king pin 18. It will be thus apparent that the king pin will be maintained in its vertical position, with the lower most lock section 20 thereof extending below the lower most plane of the frame and thus adapted to engage a suitable fifth wheel of generally conventional construction and well known and thus not further indicated herein.

It will be of course understood that by reason of the king pin's pivotal axis being arranged longitudinally, transverse swinging of the king pin will be the only possible position to move the same and in order to accomplish this, the plate 25 is raised by manual manipulation thereof until the opening 25*a* therein, is disengaged from the lock section 21.

Thereafter the king pin 18 may be swung or pivoted into the dotted line position indicated in FIGURE 3. During the course of such movement when the lock section 21 has moved sufficiently far as to be out of possible engagement with the opening 25*a*, the plate may thereafter be released.

Subsequently, when the portion 22 has moved into the dotted line position of FIGURE 3, it will engage the opening 25*a* by the shoulder 23 of the latch portion 22 whereby the king pin will be maintained in its inoperative folded position.

When it is desired to again position the king pin for operative connection with a fifth wheel or the like, the

latch plate 25 may be raised until the latch portion 22 of the king pin 18 is disengaged therefrom and the king pin thereafter swung into the full line operative position of FIGURES 3 and 4.

It will thus be clearly understood that a novel king pin arrangement has been provided which petmits a king pin to be moved into a recess or pocket and thus provide a lower surface of the container or trailer body free of any obstructions so that the said container or body may be positioned upon any other flat surface or any corresponding container.

I claim:

1. In trailer construction of the class described, in combination, a trailer body, and fifth wheel connecting means carried thereby, said means comprising a king pin and pivot and positive lock instrumentalities therefor, the bottom of said body being provided with a fifth wheel engaging section, the king pin being mounted to pivot into position to extend below the surface of said section, the lock instrumentalities maintain said king pin in said position, said instrumentalities including a lock section formed on the upper end of the king pin and a plate having an opening to receive said section therein, and said section and plate are separable to facilitate transverse pivotal movement of said king pin out of said position.

2. The combination as claimed in claim 1, wherein spring means are provided to yieldably retain said plate in position.

References Cited in the file of this patent

UNITED STATES PATENTS

2,106,258	Seyferth	June 25, 1938
2,494,799	Duvall et al.	Jan 17, 1950
2,831,704	Tenenbaum et al.	Apr. 22, 1958
2,981,555	Abolins	Apr. 25, 1961