May 1, 1951 C. W. BOND 2,551,239

COVER FOR OPEN TOP TRAILERS

Original Filed Aug. 5, 1946 2 Sheets-Sheet 1

Fig. 1.

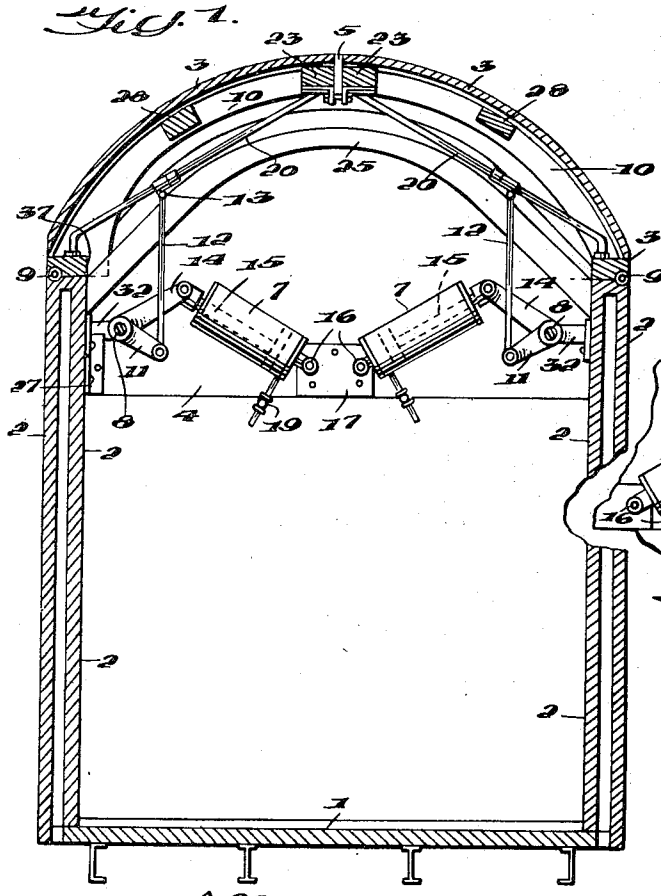


Fig. 2.

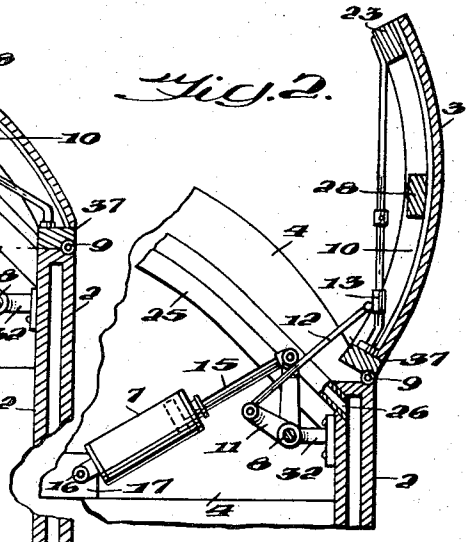


Fig. 3.

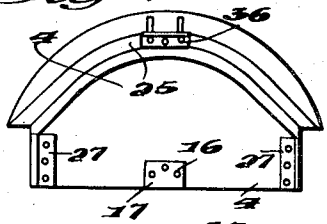


Fig. 5.

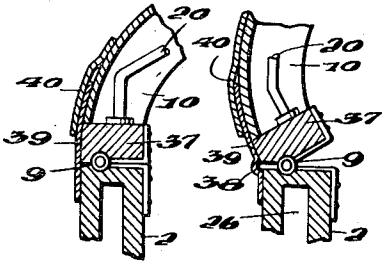


Fig. 6.

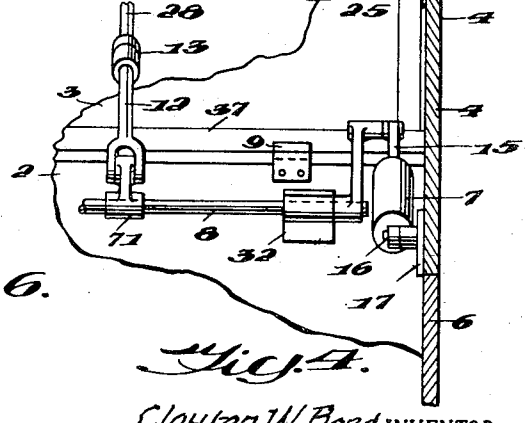


Fig. 4.

Clayton W. Bond INVENTOR.

BY W. S. Austin

Attorney

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Fig. 7.

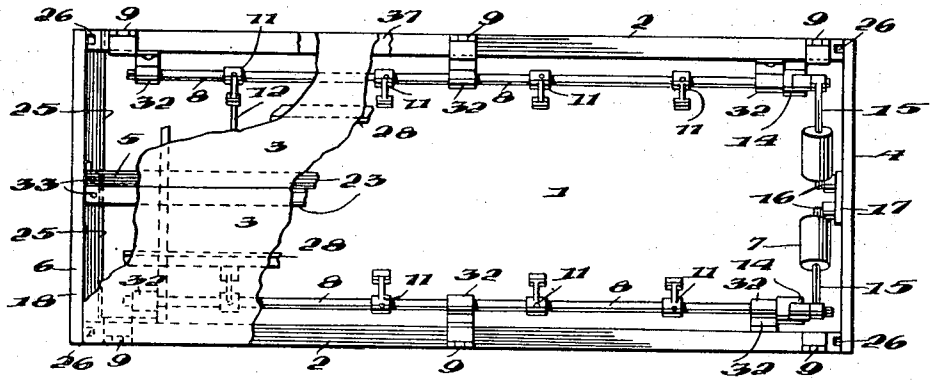
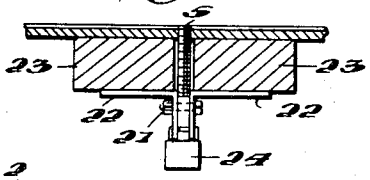


Fig. 8.



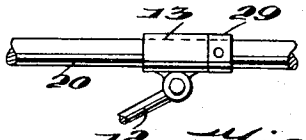


Fig. 9.

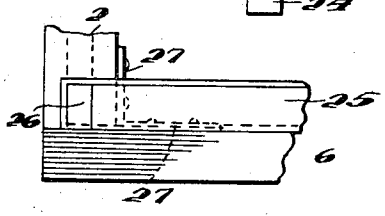
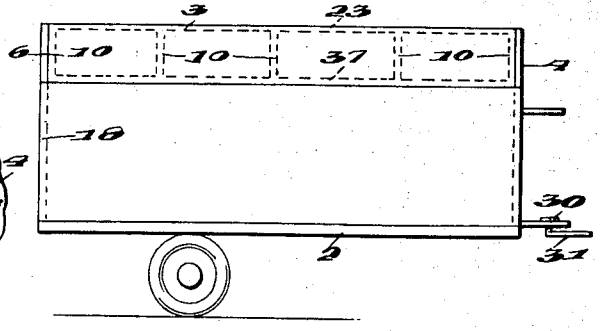


Fig. 10.

Fig. 12.



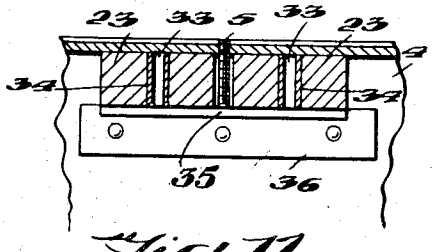


Fig. 11.

Clayton W. Bond INVENTOR.

BY M. S. Armstrong

Attorney

Patented May 1, 1951

2,551,239

UNITED STATES PATENT OFFICE

2,551,239

COVER FOR OPEN TOP TRAILERS

Clayton W. Bond, La Porte, Ind.

Substituted for abandoned application Serial No. 688,396, August 5, 1946. This application June 19, 1950, Serial No. 168,875

3 Claims. (Cl. 296—137)

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My invention relates to improvements in open top trailers and it more especially consists of the structure described in the specification and pointed out in the annexed claims.

The purpose of my invention is to provide a merchandising trailer that has a hinged top divided into two sections for instant opening and closing; that will permit the rapid loading and unloading of the contents through the open top; that effects great savings in the transfer of goods over the ordinary custom of loading and unloading through the rear end of the vehicle only; and that provides an easy and efficient means for raising and lowering the two-section hinged top through the assistance of hydraulic cylinders or other means and interconnected operating mechanism.

With these and related objects in view, I illustrate in the accompanying drawing such an instance of adaptation as will disclose the broad underlying principle of the invention without limiting myself to the specific details shown thereon and described herein.

This is a substitute for my application Serial No. 688,396, filed August 5, 1946, now abandoned.

Fig. 1 is a transverse elevation partly in section looking toward the forward end of the trailer, showing the operating mechanism with the curved top closed.

Fig. 2 is a fragmentary elevation of one half of the top in its raised position.

Fig. 3 is a reduced size elevation of the closure at the front end on which the operating mechanism is located.

Fig. 4 is a longitudinal elevation in section of a part of the front end of the trailer.

Fig. 5 is a detached sectional elevation of a hinge with the partially shown top in its closed position.

Fig. 6 is a view similar to Fig. 5 showing the hinge open and the rain cover between the side wall and the hinged portion.

Fig. 7 is a longitudinal top plan view with parts broken away.

Fig. 8 is an enlarged section of the sealing, clamping and locking means throughout the length of the trailer.

Fig. 9 is an elevation of a chord member.

Fig. 10 is a plan view of end drainage.

Fig. 11 is an elevation of the stabilizing pins at each end of the trailer.

Fig. 12 is a side elevation of the complete trailer.

In practicing my invention, I may use any form of equivalent structure that the exigencies of

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varying conditions may demand without departing from the broad spirit of the invention.

A trailer that is equipped with my invention may include the usual chassis. It has an enclosing body provided with a floor 1 on which the two side walls 2 rest. On the top of each side wall there is hinged a half-cover 3.

At the front end of the sides of the body there is a permanent wall 4 (Figs. 1 and 4) on which the hydraulic operating cylinders 7 are secured. These cylinders are supplied in any conventional manner to produce pressure (not shown), and an operating valve 19 may be placed where most convenient and easily accessible.

There is a lengthwise shaft 8 below the hinges 9 along both side walls. It extends from end to end of the side walls on which each shaft has bearings. Each curved cover has a plurality of curved ribs 10 and a curved cover 3 made of plywood or any other desired material. At different points along the length of each shaft there are cranks 11 to which arms or links 12 are pivoted.

At the front end 4 of each shaft there is an operating crank 14 which is attached by a connecting rod 15 to a cylinder 7. The cylinders are pivoted at 16 so as to avoid the use of a pivoted connecting rod (Figs. 1 and 2). However, the pivoting of the cylinders is not a limitation. The pivoting is on a plate 17, fastened on the end member 4.

My invention avoids the use of expensive tarpaulins that ordinarily cover open top trailers to protect the goods from snow and rain.

My invention is specially adapted to the handling of general merchandise in intra and interstate traffic and it is not comparable with sanitary covers usually used for wagons; or roofs as covers of vehicles; or protection covers for trucks nor with hitched-on small trailers used for the transportation of the tools, etc., required by groups of operatives at points distant from headquarters.

The operating mechanism meets all the requirements of efficient engineering and practical use.

In the operation of the curved top portions 3, I may have a separate valve 19 for each hydraulic cylinder 7 to operate the lengthwise shafts 8 separately or one valve for operating both cylinders at the same time. In addition, I may also use a single cylinder to actuate both shafts simultaneously from a pressure source (not shown).

There are chord members 20 (Fig. 1) corresponding to the number of cranks 11 on the shafts

8. Links 12 from such cranks connect them to the chord members 20 to which the links 12 are slidably attached by being pivoted to a sleeve 13 (Fig. 9).

The water seal 5 includes a screw threaded clamp 21 for holding the parts 3 together.

At the upper meeting edges of each half of the roof there are lengthwise members 23 that extend throughout the entire length of the trailer roof. At the hinged edges of each section 3 there are similar lengthwise members 37, and also 28 (Figs. 1, 2, 5, and 6). The members 23 are held in close engagement with the packing 5 by reason of secured angular members 22, and the clamping screws 21 at desired points within the length of said members. One or more padlocks 24 may be fastened to the parts 22.

At each trailer end the parts 4 and 6 are provided with a drainage channel 25 (Figs. 3 and 10). These channels empty into vertical openings 26 formed within the sidewalls 2. These openings extend through the floor of the vehicle and afford complete drainage. To hold the parts 4 and 6 permanently in place corner-brackets 27 (Fig. 10) are provided.

There are a number of chord members 20 secured to members 23 and 37 for each half of the roof. On these members there are slides 13 pivotedly attached to links 12 and cranks 11 which together are moved to raise and lower the two halves of the roof when actuated by the shafts 8. If desired stops 29 may limit the endwise movements of the slides 13. The floor of the trailer may be extended forward at 30. From this a hitch 31 will connect it to an automobile for pulling the trailer.

The main lengthwise shafts 8 have bearings 32 that are secured to the side walls of the trailer. There is a crank 14 at the front end of each shaft. In order that the two hinged halves of the trailer roof may be stabilized, a bracket 36 is provided (Fig. 11). This has a flanged portion 35 from which pins 33 project upward. These pins pass through tubular inserts 34 that are driven into holes formed in the members 23. The pins 33 serve as dowels to guide the meeting edges of the covers into engagement so as to hold the two halves securely closed at the front end 4 and the rear end 6 of the trailer body.

In order to seal the joint between the curved portions 3 and the sidewalls 2 a narrow width flexible sheeting 39 is used (Figs. 5 and 6) to cover the joint throughout the length of the member 37 and the sidewalls 2. The cover 40 laps over the portion 39 to cause rain water to flow over the flexible strip 39 without entering the hinged joint 9. When the curved halves are raised as shown in Figs. 2 and 6 the flexible part 39 is slightly bulged out at 38 without injury.

The loading and unloading of the trailer is usually done rapidly through the opening formed between the raised portions 3. If desired the closure 6 at the rear end of the trailer may have its lower portion 18 hinged to the floor so that the closure 6 may be opened as required.

What I claim is:

1. An open top trailer which comprises a chassis, a body on the chassis having a removable rear end, a fixed front end with attached sides, a curved-half-top hinged at the upper edge of each side of the body, a separate lengthwise shaft for each half portion of the top, bearings for the shafts located near the top edge of each side of the body, a crank at the front end of each shaft, means for operating said cranks independently of each other to raise and lower the two halves of the roof independently of each other, a plurality of separate cranks on said shafts in addition to the crank at the front end of each shaft, a plurality of chord members supported on and beneath each half of the cover, a slidable member on each chord, pivoted connecting links extending from the said plurality of separate cranks to the sliding members on the chords for raising and lowering the curved roof members, and waterseal linings covering the meeting edges of the curved tops and the adjacent upper edges of the sides of the body.

2. An open top trailer which comprises a chassis, a body on the chassis said body having a removable rear end, a closed front end, sides, and an open top, a pair of curved top closures hinged to the upper edges of the sides, an operating shaft on the inside surface of each side of the body near its top edge, bearings for each shaft at its ends, means for actuating the shafts independently of each other, a chord member secured to the under side of each top closure, sleeves slidable on said chord members, closure operating cranks on the respective shafts, connecting links pivoted to the said cranks and the sleeves on the chords, and waterseal covering on the outside of the hinged edges of the tops throughout their length.

3. A lengthwise curved top closure formed of two separate parts, a body having an open top portion, which supports the curved top closure on a supporting chassis, lengthwise shafts positioned beneath the lower edges of the curved tops on the inside of the body, hinges between the upper edges of the body and the lower edges of the curved closures, closure operating cranks on the shafts, chord members secured on the underside of each half of the covered top, sliding sleeves on the chord members, links pivoted to the cranks and to the sliding sleeves on the chord members, and separate means for operating the shafts to open and close the curved tops independently of each other.

CLAYTON W. BOND.

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The following references are of record in the file of this patent:

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