

# Tab E

June 16, 2009

1 Q Is there anything in this document that you see that  
2 says the references attached are Prior Art?

3 A No.

4 Q Okay.

5 Is the Patent in this lawsuit the only Patent that  
6 you have ever been a named/inventor for?

7 A Yes.

8 Q Okay.

9 Were you aware that a Patent -- by its very  
10 nature -- is affected with a public interest?

11 A Would you rephrase that?

12 I don't understand the question.

13 Q Has anyone ever told you that before?

14 A No. Not to my knowledge.

15 Q Have you ever read that before?

16 A No.

17 Q Have you read -- or has anyone explained to you -- the  
18 duty of candor and good faith that an inventor has to  
19 the Patent Office?

20 A No.

21 Q Did you ever hear of something called "Rule 56"?

22 A No.

23 Q Okay.

24 Were you aware that, quote: "Each individual  
25 associated with the filing and Prosecution of a Patent

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1 Application has a duty of candor and good faith in  
2 dealing with the Office; which includes a duty to  
3 disclose to the Office all information known to that  
4 individual to be material to Patentability, ..." end  
5 quote.  
6 A In regards to that phrase, I'm aware of that, yes.  
7 Q How were you aware of that?  
8 A It was discussed early on when we were originally  
9 filing for the Patent that, you know, we had to -- you  
10 know, give any information that we could of any Prior  
11 Art.  
12 Q And what did you understand that to encompass?  
13 A Anything that we seen that was related to what we were  
14 trying to do.  
15 Q Did you do that?  
16 A I believe so.  
17 Q So, you did some sort of an investigation to find Prior  
18 Art?  
19 A Well, I personally didn't.  
20 But I know that we had Attorneys that did that,  
21 yes.  
22 Q Okay.  
23 Did you, yourself, gather up any information about  
24 Prior Art you were aware of?  
25 A Just one document.

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- 1 Q What was that?
- 2 A It was a Glendale Patent, Titanium product.
- 3 Q Mm-mm.
- 4 A I can't -- I can't specifically name the inventor, but
- 5 we were aware of that Patent for sure.
- 6 Q You personally were aware of that Patent?
- 7 A Yes, sir.
- 8 Q How is it that Patent first came to your attention?
- 9 A There was a -- you know, we were doing a product study,
- 10 marketing study, trying to find out what kind of a
- 11 product would sell in the market.
- 12 And there was a need for some way to deal with
- 13 short/bed trucks:
- 14 Current product out there historically without
- 15 spending a lot of money on a hitch that would move in
- 16 the bed of the truck, would interfere with the back of
- 17 the cab of the truck on a short/bed truck and bust the
- 18 window or do truck/damage.
- 19 Q Those same problems did not exist for long/bed pick-up
- 20 trucks, did they?
- 21 A Not to the extent.
- 22 Q You said you were doing the "study."
- 23 When did you begin that study?
- 24 A When we were forming our Company in November of '03.
- 25 Q Okay.

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1 "Shadow Cruiser", no.

2 Q Well, the top-view of a Shadow Cruiser trailer, at that  
3 point in time, had that inclined angle, didn't it?

4 A I don't have any recollection of that.

5 I don't know that, no.

6 Q But you did see Shadow Cruisers at the time.

7 Right?

8 A I'm aware of Shadow Cruiser Company.

9 I'm not saying that I've seen that particular item  
10 on a travel -- on a Shadow Cruiser or any travel  
11 trailer.

12 Q You've never seen a travel trailer where the top-view  
13 like that had inclined front-walls?

14 A Well, you say "never."

15 I've seen new travel trailers that have a "V" nose  
16 to them.

17 Q Okay.

18 What is --

19 A Bumper/pull travel trailers.

20 Q Okay.

21 And when's the first time that you saw a travel  
22 trailer with an inclined front-wall, whether it be "V"  
23 nose or anything approximating it?

24 A Well, during discovery, our Attorneys showed us a  
25 Patent of a travel trailer that had inclined front-end

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1           come up with any frame they wanted to suit their  
2           product's needs?

3    A       Yes.  It would be.

4    Q       Okay.

5           And would the same be true of fifth-wheel trailer  
6           frames?

7    A       Yeah.  I think so.

8    Q       Okay.

9           Looking back at Exhibit 18 for a minute, if you  
10           would.

11   A       (Indicating).

12   Q       Is there any indication there of travel trailer frame  
13           information being provided to the Patent Office?

14   A       Not that I could interpret from what's on this page.

15   Q       Okay.

16           So you, yourself, didn't gather up any information  
17           about travel trailer frame Prior Art to give that to  
18           someone to give to the Patent Office?

19   A       Well, again, as I mentioned earlier, I consider "travel  
20           trailers" and "fifth-wheels" completely different.

21   Q       Okay.

22   A       Two different products.

23           But did I go out and collect drawings of  
24           fifth-wheel frames and provide them to the Patent  
25           Office?

1 I did not.

2 Q And you didn't collect travel trailer frames either,  
3 did you?

4 A No.

5 Q Okay.

6 Let's turn to Exhibit 1 for a minute, please.  
7 On the last page of Exhibit 1?

8 MR. DAVID P. IRMSCHER: The stack is over  
9 there, I think, isn't it?

10 MR. RYAN M. FOUNTAIN:

11 Q Yeah.

12 It should be at the very bottom of the stack.

13 A (Indicating).

14 Q Let's go to the last page of that, please.

15 A (indicating).

16 Q Lower right-hand portion, column 8.

17 A (Indicating).

18 Q You recognize Exhibit 1, don't you?

19 A Yes (Indicating).

20 Q That's the Patent in this lawsuit, isn't it?

21 A Correct.

22 Q Okay.

23 Going -- going to the lower right-hand portion,  
24 there's a section -- on the last page that says, "What  
25 is claimed is..."

1 A Am I supposed to look through this stuff here, too?

2 Q If you think it might be in those.

3 A I don't know what they are.

4 Q Then take a look, please.

5 A (Indicating).

6 (PAUSE IN THE PROCEEDINGS.)

7 THE WITNESS:

8 A No.

9 MR. RYAN M. FOUNTAIN:

10 Q Okay.

11 Earlier when the deposition began, we were talking  
12 about Exhibit 18, and the gathering of information  
13 about Prior Art to give to the Patent office.

14 Do you recall that?

15 A Yes.

16 Q Okay.

17 After the real Patent Application -- as you call  
18 it -- was filed, did there come a point in time when  
19 someone said to you "We need to gather up all the Prior  
20 Art that you are aware of, or any other information you  
21 think the Patent office should know about"?

22 A Well, it was never said to me. It was said to Scott.

23 But I know Scott worked on that project.

24 Q Okay.

25 Did Scott ever come to you and ask you for your



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1 input on that?

2 A No.

3 Q Okay.

4 A I mean, we discussed it, though.

5 I mean, he didn't come to me and ask me  
6 specifically to -- to do that project for him because  
7 frankly, I wouldn't have. It was his project. I was  
8 working on other things.

9 Q Okay.

10 You say he discussed it with you.

11 What was the substance of that discussion?

12 A Say "You have time to sit down and put together all the  
13 Prior Art that we know about?"

14 I said, "No, not really. I mean, I can share with  
15 you what I know."

16 I mean, obviously, we know of the Glendale Patent  
17 and you know -- by this point in time we'd seen -- I'm  
18 sorry. That's earlier. That's before the Provisional.

19 He had passed others in front of me. The travel  
20 trailer stuff that was going back and forth between him  
21 and our attorney at the time.

22 I mean, I'd seen that stuff.

23 And the Glendale Patent that we saw originally.

24 Q Okay.

25 So, when you had that discussion where he said,

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1           Did you see some correspondence from the Patent  
2 office?

3 A    No.

4           I saw -- when they were working on the project of  
5 Prior Art. I can't tell you exactly in the time-frame  
6 when that happened.

7           I don't know if it was for the Provisional. I  
8 don't know if it was for the regular Patent, you know.  
9 This was Scott's project and -- and I was very busy.

10          And Scott would come to me and say, "Hey, this  
11 is -- do you see this as Prior Art?"

12          I'm like, "Well, it's a travel trailer. I mean, I  
13 don't. But, you know, if they say it does, it is. I  
14 mean, I'm not an expert here. I can't tell you whether  
15 it is or it isn't."

16          And, you know, sometimes it would be "Jeez, look  
17 at this. This has got nothing to do with what we are  
18 doing."

19          There was quite a few in there that might have  
20 been -- you know, our Patent was this big when we  
21 started, and it got down to this size as we went on.

22          And, you know, some of the Crean Patents in there  
23 that are mentioned, he showed them to me because they  
24 were involving holding tanks and things like that.

25          Our Patent has nothing to do with that. So -- but

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1 load.

2 I mean, I wasn't in the room when Doug was let go.

3 I mean, I know what I know.

4 I can't speak for what was said to Doug. I wasn't  
5 in the room. But...

6 Q Now, you described some meetings that you had or --  
7 sorry -- described some discussions that you had with  
8 Scott Tuttle concerning Prior Art at various points.

9 Right?

10 A Yes.

11 Q Was Doug Lantz present at any of these meetings?

12 A Not that I'm aware of.

13 Q Was Tim Hoffman present?

14 A No.

15 Q Was Brian Brady present?

16 A No.

17 Q Do you know if Scott went to gather information about  
18 Prior Art from any of those gentleman?

19 A I don't know if he did or didn't.

20 (WHEREUPON, DOCUMENT WAS MARKED

21 FOR I.D. BY COUNSEL AS NO. 19.)

22 BY MR. RYAN M. FOUNTAIN:

23 Q Okay.

24 This is Exhibit 19 (Indicating).

25 Do you recognize that?

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1           That earlier answer included a lot of information  
2           about Prior Art.

3           Right?

4    A    In your opinion, yes.

5           You are the expert. I'm not.

6    Q    Okay.

7    A    I don't think Prior Art is a cargo trailer, in my  
8           opinion.

9    Q    Why not?

10   A    Because it's not an RV.

11   Q    Cargo --

12   A    Meaning -- neither is a horse trailer.

13           A horse trailer, in the area that we are talking  
14           about, all it has to do is hold hay in the manger.

15           It's not an RV. It's not -- it doesn't have  
16           living quarters in it.

17           Now, that's my opinion.

18   Q    Have you ever seen a cargo trailer with living quarters  
19           in it?

20   A    Yeah. Now.

21   Q    Prior to the lawsuit, had you seen a cargo trailer with  
22           living quarters?

23   A    Never with a bedroom slide.

24   Q    But with bedrooms, though.

25           Right?

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1 A Yeah.

2 But ours includes a bedroom slide. It's

3 different.

4 Q I see.

5 A And I never seen one with short bed truck clearance,

6 either.

7 Q Okay.

8 Well, let's -- let's stick with cargo trailers for

9 a minute.

10 A Okay.

11 Q You were aware that before your invention, people had

12 cargo trailers with living quarters in them.

13 Right?

14 A Yes.

15 Q And let's look at horse trailers.

16 You were aware that before your invention, people

17 had horse trailers with living quarters in them.

18 Right?

19 A Yes.

20 Q And in those instances when people had cargo trailers

21 with living quarters in them, did you consider that to

22 be an "RV"?

23 A No.

24 Q Have you ever seen a toy hauler?

25 A Mm-mm. I own one.

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- 1 Q Do you consider that to be an RV?
- 2 A Yes.
- 3 Q Well, what's the difference -- in your mind -- between  
4 a "toy hauler" and a "cargo trailer with living  
5 quarters"?
- 6 A Well, I can live in my upstairs, the upper deck in my  
7 toy hauler. That's an RV.
- 8 And I've got four foot of clearance in a cargo  
9 trailer. So all I have room for is a bed laying up.  
10 And I can't stand up in it.
- 11 Q And being able to stand up in the bed area is, in your  
12 mind, the Hallmark of an RV?
- 13 A Of a conventional fifth-wheel. It always has been.  
14 At least for 20 years it has been.
- 15 Q Would it be fair to say, though, that a cargo trailer  
16 with the living quarters is a travel trailer?
- 17 A I wouldn't say that, no.
- 18 Q It wouldn't --
- 19 A It's a cargo trailer.
- 20 Q Well, what's the difference between a "cargo trailer  
21 with the living quarters" and a "travel trailer", in  
22 your mind?
- 23 A In my mind, it's -- it's how it's used. You know, it  
24 doesn't contain metal walls. It's insulated.
- 25 I mean, I know there's -- now there's products

1 to work for us.

2 He was an employee of ours.

3 Q Okay.

4 When is the last time you talked to Eric?

5 A Probably Louisville Show.

6 Q December of last year?

7 A '08 -- December of '08.

8 Q Okay.

9 A Just in passing. Not big conversation.

10 Q Okay.

11 If you would, turn back to Exhibit 16 for a

12 minute.

13 A (Indicating).

14 Q Page seven.

15 (PAUSE IN THE PROCEEDINGS.)

16 MR. RYAN M. FOUNTAIN:

17 Q Do you consider the drawings shown there to be of a RV

18 product?

19 A Never seen one that looked like that before

20 (Indicating).

21 Q Did you ever hear of a Company called "Roadmaster"?

22 A The Roadmaster that I'm aware of is a cargo trailer

23 manufacturer.

24 Q Do you know someone named Danny Yarnel?

25 A Not that I can recall.

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1           Do you think the drawing shown on figure 7 is  
2           Prior Art?

3   A    No.

4   Q    Why not?

5   A    I believe it's a cargo trailer.

6   Q    Even though it says: "RMC 8-wide fifth-wheel with  
7           wedge nose...?"

8   A    Yeah.

9           It's -- and at the end of that statement, it could  
10          say: Cargo trailer.

11          I mean, this is your document, not mine. You can  
12          say anything you want to say.

13   Q    Okay.

14                           **(WHEREUPON, DOCUMENT WAS MARKED**  
15                           **FOR I.D. BY COUNSEL AS NO.29.)**

16                           (PAUSE IN THE PROCEEDINGS.)

17   MR. RYAN M. FOUNTAIN:

18   Q    I would like you to take a look at Exhibit 29.

19   A    (Indicating).

20   Q    Do you recognize what's shown there?

21   A    I mean, I don't recognize it for what it is, but I  
22          recognize it's a travel trailer of sorts.

23                  More likely a cargo trailer.

24                  I don't know the Patent.

25                  I don't know if reference.



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1 A Yeah.

2 Q Do you recall any others?

3 A No.

4 Q How about a Cherokee?

5 A I had a Cherokee but it wasn't "V" nose.

6 Q But have you ever seen any Cherokee "V" nose?

7 A Not that I can recall.

8 Q Okay.

9 Ever heard of an Eliminator travel trailer?

10 A Only in this document that I reviewed -- in your  
11 original Answer, that's what you call it.

12 Q You don't recall ever seeing one?

13 A I seen an Eliminator cargo trailer going by one time  
14 because I seen the word "Eliminator."

15 But I couldn't tell you what the front end looked  
16 like. It was going the other way.

17 I just recognized it because of the word  
18 "Eliminator."

19 Q Okay.

20 Prior to this lawsuit being filed, Forest River  
21 received a cease and desist letter from your attorney.

22 You are aware of that, aren't you?

23 A I believe so, yes.

24 Q Okay.

25 And, were you aware that Forest River responded to

1           that letter?

2    A       Not really.

3    Q       Did anybody --

4    A       I mean -- go ahead.

5    Q       No. Finish, please.

6    A       I had heard and timing is -- I don't -- because  
7           post-mortem or prior to the lawsuit.

8           But, I know that there was some sort of answer.

9           And I think there was some -- maybe "Eliminator"  
10          was mentioned at that time.

11          And we have Prior Art that says we can -- you  
12          know, we -- we believe the Patent is invalid. To  
13          that -- something -- something to that extent.

14    Q       Well, the correspondence from your Attorneys was back  
15          in 2007.

16          Do you recall that?

17    A       The only thing I remember was this recent issue.

18    Q       I see.

19          Well, do you recall anybody at Heartland checking  
20          out Forest River's allegation in that early  
21          correspondence that there was this Prior Art?

22    A       I don't know of any.

23    Q       You don't know of anybody who checked to see if Forest  
24          River was telling the truth?

25    A       I don't know of anybody, no.

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- 1 Q Do you know of any reason why that would not have been  
2 done?
- 3 A I think our opinions were that we had a fifth-wheel RV  
4 and a cargo trailer -- are two different things.
- 5 Q Well, how did you know Forest River was talking about a  
6 "cargo trailer" at that point in time?
- 7 A Scott was aware of what an "Eliminator" was.
- 8 Q Scott told you that at the time?
- 9 A Scott told me what an "Eliminator" was.
- 10 Q And did he tell you at the time that it was a cargo  
11 trailer?
- 12 A Yes.
- 13 I believe he'd seen it.
- 14 I don't know that for sure.
- 15 But I believe he had seen it.
- 16 Q Okay.
- 17 So you didn't look further because you said cargo  
18 trailers are different from RV's?
- 19 A Yes.
- 20 Q Cargo trailers and RV's use substantially the same  
21 trailer frame, don't they?
- 22 A I'm not in the cargo trailer business.
- 23 I can't answer that question.
- 24 Q You have no idea whether the frames are similar or not?
- 25 A Not without making assumption.

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1           it.

2                   I can't do that.

3    Q       Okay.

4                   So, in your mind then, this is not showing Prior  
5    Art.

6                   Is that right?

7    A       This isn't enough information to show Prior Art.

8    Q       You would need to see the actual trailer?

9    A       Yes.

10   Q       Ever hear of something called a Sunrise Friend trailer?

11   A       No.

12   Q       Well, when you were working at Gulf Stream, you were  
13   aware of Gulf Stream's competitors in the fifth-wheel  
14   market.

15                   Right?

16   A       Many of them, yes.

17   Q       And you were aware that Cobra Industries was a  
18   competitor in the fifth-wheel market.

19                   Right?

20   A       Cobra Industries.

21   Q       At that point in time?

22   A       Not really.

23                                   (PAUSE IN THE PROCEEDINGS.)

24   BY MR. RYAN M. FOUNTAIN:

25   Q       If this product was advertised as having an improved

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1 A I've seen the product.

2 I've seen the actual product in front of me.

3 Q But you never saw the frame?

4 A Correct.

5 Q Okay.

6 MR. RYAN M. FOUNTAIN: I don't have any other  
7 questions for you at this time.

8 Would you like to cross-examine the witness?

9 MR. DAVID P. IRMSCHER: Take a short break.

10 THE VIDEOGRAPHER: We're going off the record  
11 at 5:03 p.m.

12 (FOLLOWING A BRIEF RECESS THESE  
13 PROCEEDINGS WERE HAD:)

14 THE VIDEOGRAPHER: We are back on the record  
15 at 5:08 p.m.

16

17

**CROSS-EXAMINATION**

18 MR. DAVID P. IRMSCHER:

19 Q Mr. Rhymer, can you tell us why the five names are on  
20 the Patent as named/inventors in your understanding?

21 A Well, early on as the Company was formed, I was the  
22 inventor of the Patent.

23 However -- however, when it became time to fill  
24 out the information, it didn't seem right for just my  
25 name to be on there.

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1           So when the question was asked to me, I answered,  
2           "Well, I think we should all been on there."

3   Q       And why did -- why did you think all the names should  
4           be on there?

5   A       Because we were a start-up Company.

6           It just didn't seem fair that just my name would  
7           be on there.

8   Q       Earlier today, you were asked a number of questions  
9           about the turning standard for travel trailers.

10          Do you recall that?

11   A       Yes.

12   Q       Do you believe that was relevant to your invention?

13   A       If you are referring to the SAE standard, no.

14          We're talking travel trailers and fifth-wheels.

15   Q       And you were asked a number of questions about "V" nose  
16           cargo trailers and "V" nose horse trailers.

17          Did you consider those to be relevant to your  
18           invention?

19   A       I did not consider any horse trailers or cargo  
20           trailers -- travel trailers as Prior Art according to  
21           our fifth-wheel RV.

22                   MR. DAVID P. IRMSCHER: Thanks very much. I  
23           have no further questions.

24                   MR. RYAN M. FOUNTAIN: A couple things.

25                               RE-DIRECT EXAMINATION

1 MR. RYAN M. FOUNTAIN:

2 Q You said when the time came to fill out the  
3 information, you felt it wouldn't be right to have just  
4 you on the Patent.

5 Right?

6 A Yes.

7 Q When was that?

8 A It was when we did the -- the first document early on  
9 in -- in '04.

10 In March of the '04.

11 Our Preliminary.

12 Q The Provisional Patent Application?

13 A Provisional Patent, yeah.

14 The question was asked to me.

15 I don't recall which partner asked the question.  
16 I think they asked it because they knew I was the  
17 inventor. And I said, "Well, everybody's name can be  
18 on there."

19 I mean, as far as I'm concerned, we were all --  
20 we're Heartland.

21 Q Who asked you that question?

22 A I don't recall who asked that question.

23 Q Was it a member of Heartland?

24 A Yes. Yes.

25 It was one of the partners.

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1           It was either Scott or Brian.

2           I don't recall which.

3    Q       Okay.

4           Did you ever discuss this inventorship issue with  
5           an attorney while that Patent Application was pending?

6    A       My contact was through Scott.

7           If that's what you mean.

8    Q       Do you know if Scott discussed the inventorship issue  
9           with an attorney when the Application was pending?

10   A       Meaning having multiple names on there?

11           I don't know of anything about that.

12           I mean, I don't know that was a problem.

13   Q       Do you know of any discussion Scott had with any  
14           attorney before that Patent issued concerning who was  
15           an inventor?

16   A       Not that I am aware of.

17   Q       Okay.

18           And Mr. Irmscher asked you a moment ago about SAE  
19           standards.

20           And you said, "We're talking travel trailers and  
21           fifth-wheels."

22           Well, there are SAE standards for  
23           fifth-wheels.

24           Right?

25   A       Not for turning radius.



# Tab F



## Forest River, Inc.

55470 County Road 1, P.O. Box 3030, Elkhart, Indiana 46515-3030 • 574-389-4600 • Fax 574-296-7558

RECEIVED

JUL 14 2005

BAKER & DANIELS

July 11, 2005

Gerard T. Gallagher  
205 W. Jefferson Blvd., Ste. 250  
South Bend, IN 46601

Mr. Gallagher,

In response to your letter about this "revolutionary" design, it actually is not. Quite a few years ago there was a certain recreational vehicle product that had a similar design to the one in question. From my understanding it was used for a number of years by a local manufacturer. If you do some historical checking, I am sure you will find that this is not a "revolutionary" design.

Sincerely,

Peter J. Liegl  
President/ CEO

Cc: Ryan Fountain

"The Two Forests of Forest River... Forming Relationships with Nature"

Heartland/FR 0001032

# Tab G

**Gallagher, Gerard T.**

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**From:** Gallagher, Gerard T.  
**Sent:** Monday, July 30, 2007 4:41 PM  
**To:** 'Scott Tuttle'  
**Cc:** Brotherson, James R.  
**Subject:** RE: Published Application

HRV 0001.1

Scott,

We will cancel the rejected claims so that the allowed ones can issue as a patent. We will also file a continuation application to pursue broader claims as we discussed. I do not think any further pressure on the examiner would be helpful. Also, he has little to do with the actual issuance of the patent. It is largely in the hands of the printing office. Please let me know if you have any other questions. Thank you.

Jerry

-----Original Message-----

**From:** Scott Tuttle [mailto:scott@heartlandrvs.com]  
**Sent:** Monday, July 30, 2007 2:14 PM  
**To:** Gallagher, Gerard T.  
**Subject:** RE: Published Application  
**Importance:** High

Thanks.

I did speak with Tim and John and they agree, we should "get what we can" at this point, and fight for more. Those three points (33/34/35) talk about the three different figures (12/13/14) that showed where the corner of the frame of the fifth wheel was notched (and the three different ways that we can notch it). If we can get a patent on this alone – it will help, by forcing other manufacturers to get real creative and possibly leave conventional construction methods in an attempt to duplicate its effects.

If it is not out of line to ask, we would ask that you ask the examining attorney to do his best to help us expedite the patent on the claims that have been approved. Especially in light of the extraordinarily long time frame it took us to get even to this point – and because other RV manufacturers are in the process of trying to replicate our design as they don't believe we can get the patent – after all this time.

Thoughts? Anything would be appreciated.

Thanks.

Scott Tuttle  
VP Marketing & Dealer Services

Heartland Recreational Vehicles  
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[scott@heartlandrvs.com](mailto:scott@heartlandrvs.com)  
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**Gallagher, Gerard T.**

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**From:** Scott Tuttle [scott@heartlandrvs.com]  
**Sent:** Monday, July 30, 2007 1:31 PM  
**To:** Gallagher, Gerard T.  
**Subject:** RE: Office Action  
**Importance:** High

The images he sent you were

- 1) a horse trailer with a vertical gooseneck adapter (the long vertical thing going down to the bed of the truck) and
- 2) a travel trailer (not a 5<sup>th</sup> wheel travel trailer), which is not applicable to this patent application.

You mentioned that 35 of 38 points were approved??

Call me please. 574.370.7582 (cell)

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[www.HEARTLANDRVs.com](http://www.HEARTLANDRVs.com)



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**From:** Gallagher, Gerard T. [mailto:Gerard.Gallagher@bakerd.com]  
**Sent:** Monday, July 30, 2007 12:22 PM  
**To:** Scott Tuttle  
**Cc:** Brotherson, James R.  
**Subject:** Office Action

Scott,

I am attaching figures from the prior patent and application that the examiner relied on in rejecting Heartland's claims. Are you available to discuss the office action today? If so, please let me know what time works for you and I will call you then. I am open all afternoon. Thanks.

Jerry



US 20060038379A1

(19) **United States**

(12) **Patent Application Publication**  
**Brady et al.**

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(43) Pub. Date: **Feb. 23, 2006**

(54) **TRAVEL TRAILER HAVING IMPROVED TURNING RADIUS**

**Publication Classification**

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*B60J 5/00* (2006.01)  
(52) **U.S. Cl.** ..... **280/423.1; 296/186.1**

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(57) **ABSTRACT**

**Abstract of the Disclosure**

A travel trailer configured to be coupled to and towed by a vehicle is provided. The travel trailer has a compartment that is attached to a chassis which includes a front end and a rear end. A plurality of wheels are attached to the chassis adjacent the rear end, and a hitch assembly is attached to the chassis adjacent the front end. The compartment at the front end of the chassis forms first and second corners. A recess, directed inwardly toward the interior of the compartment, is located at each corner of the compartment. Cavities formed by each recess may receive a portion of the vehicle while the vehicle is engaged in a turn.

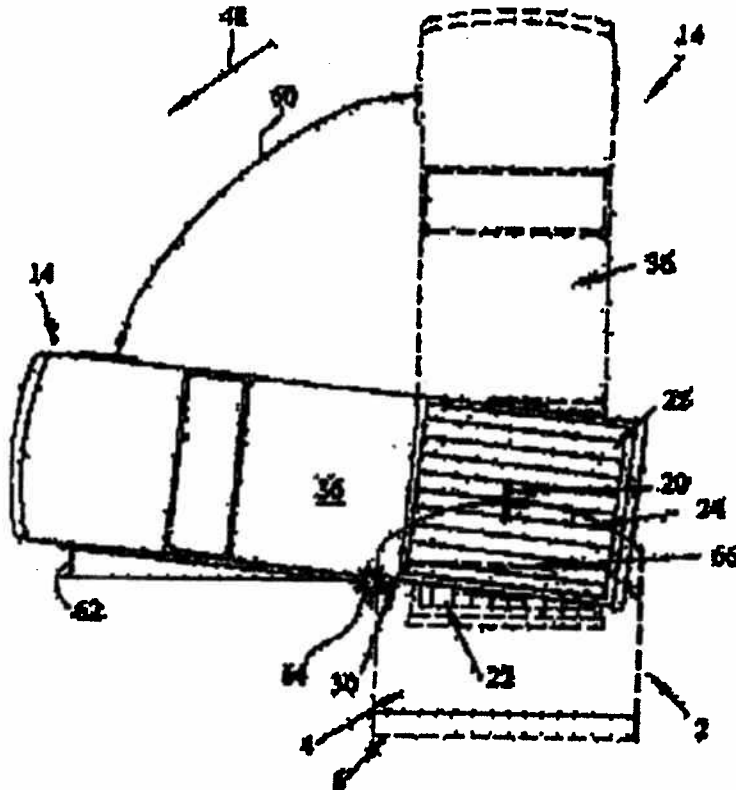
(73) Assignee: **Heartland Recreational Vehicles, LLC, Elkhart, IN (US)**

(21) Appl. No.: **11/091,070**

(22) Filed: **Mar. 28, 2005**

**Related U.S. Application Data**

(60) Provisional application No. **60/557,302**, filed on Mar. 29, 2004.



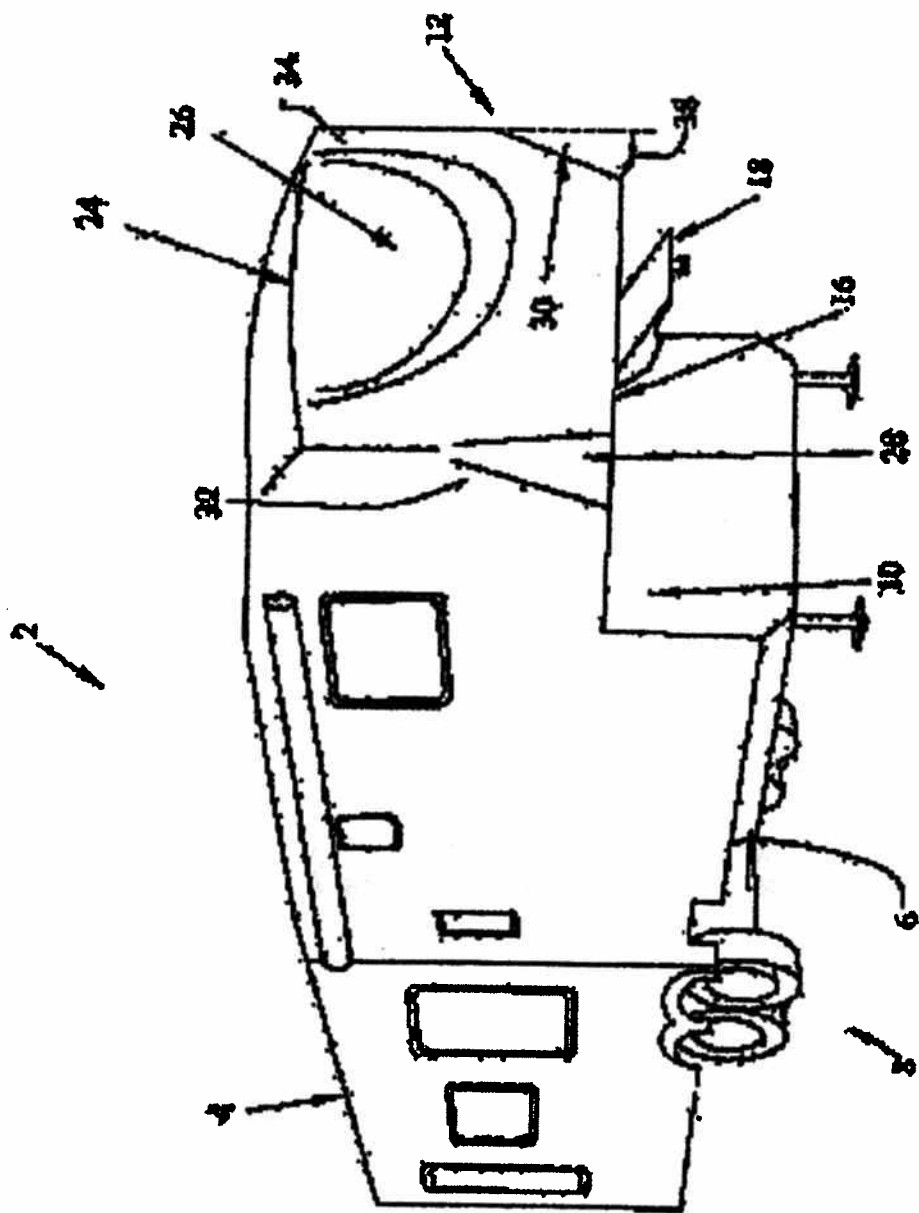
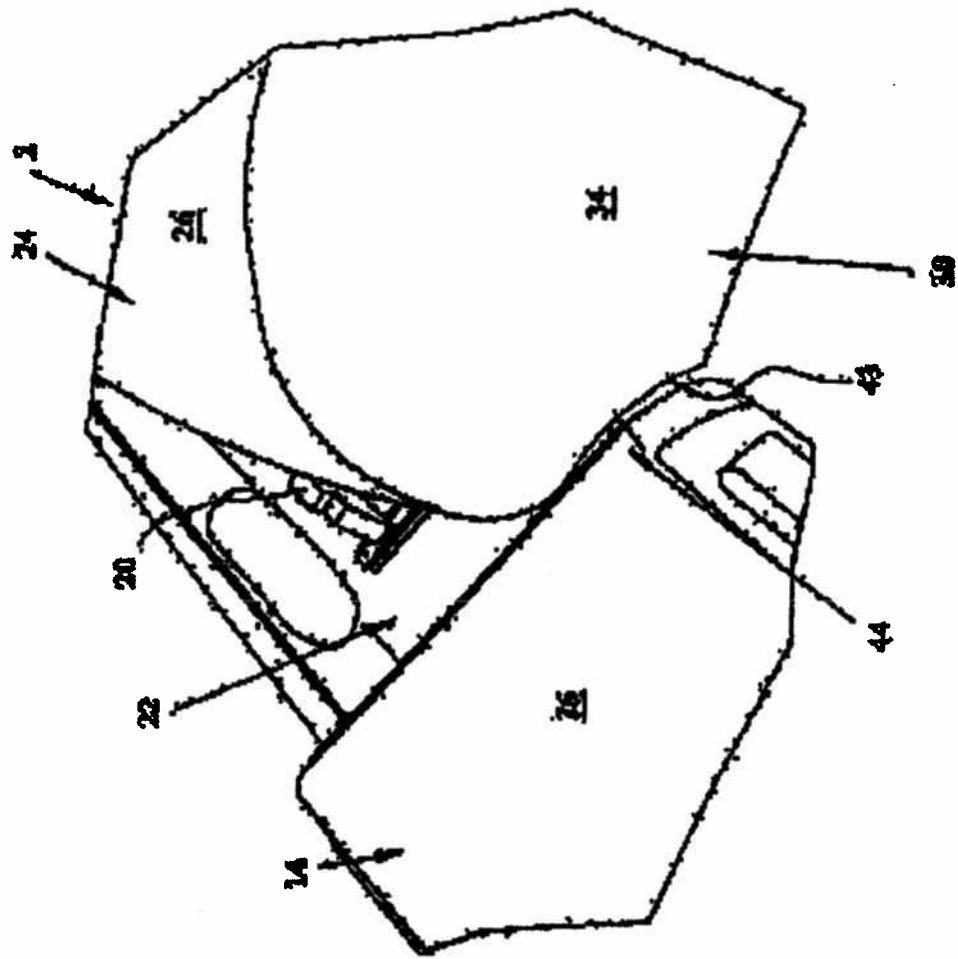


FIG. 1



**FIG. 2**



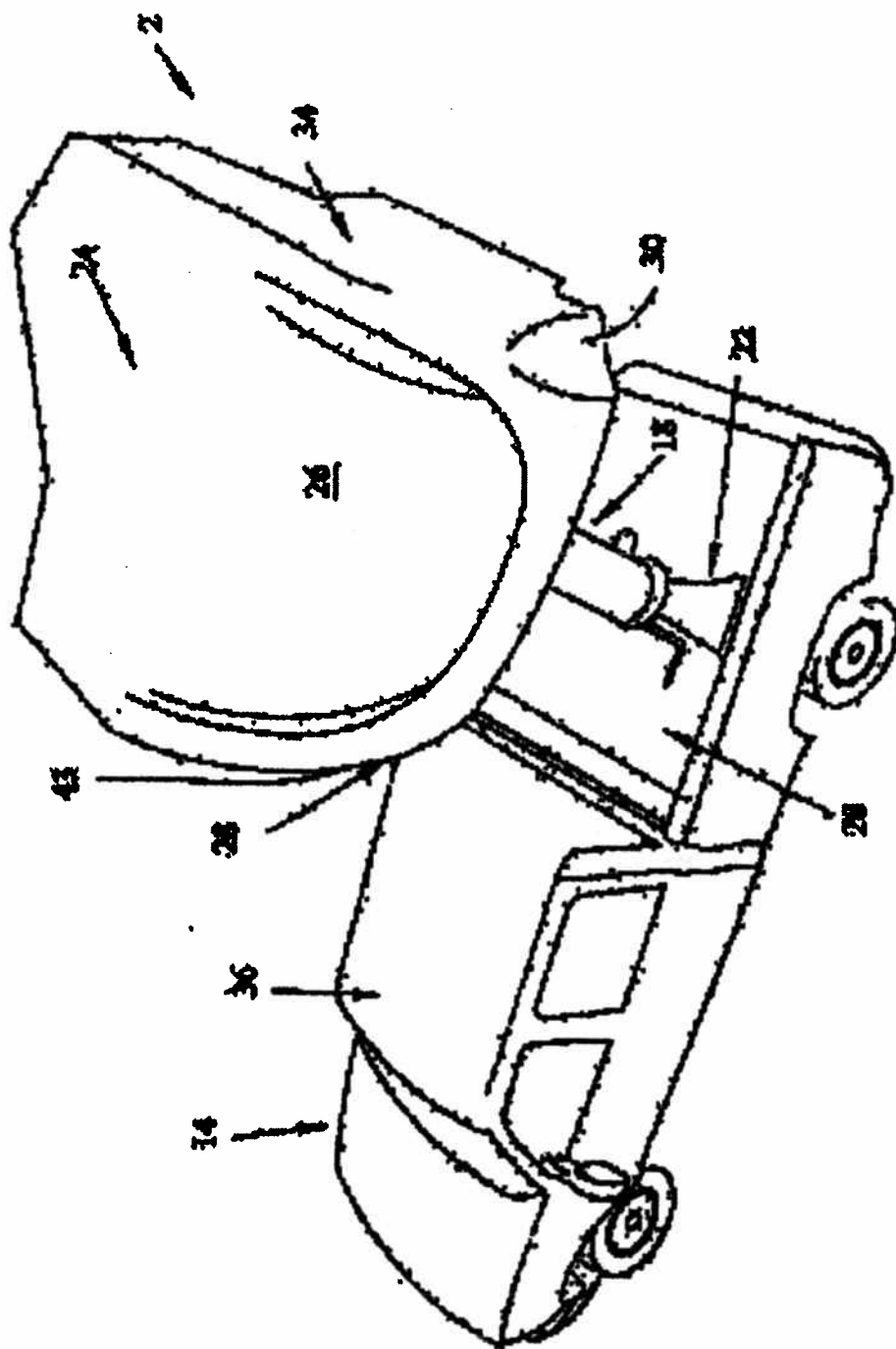
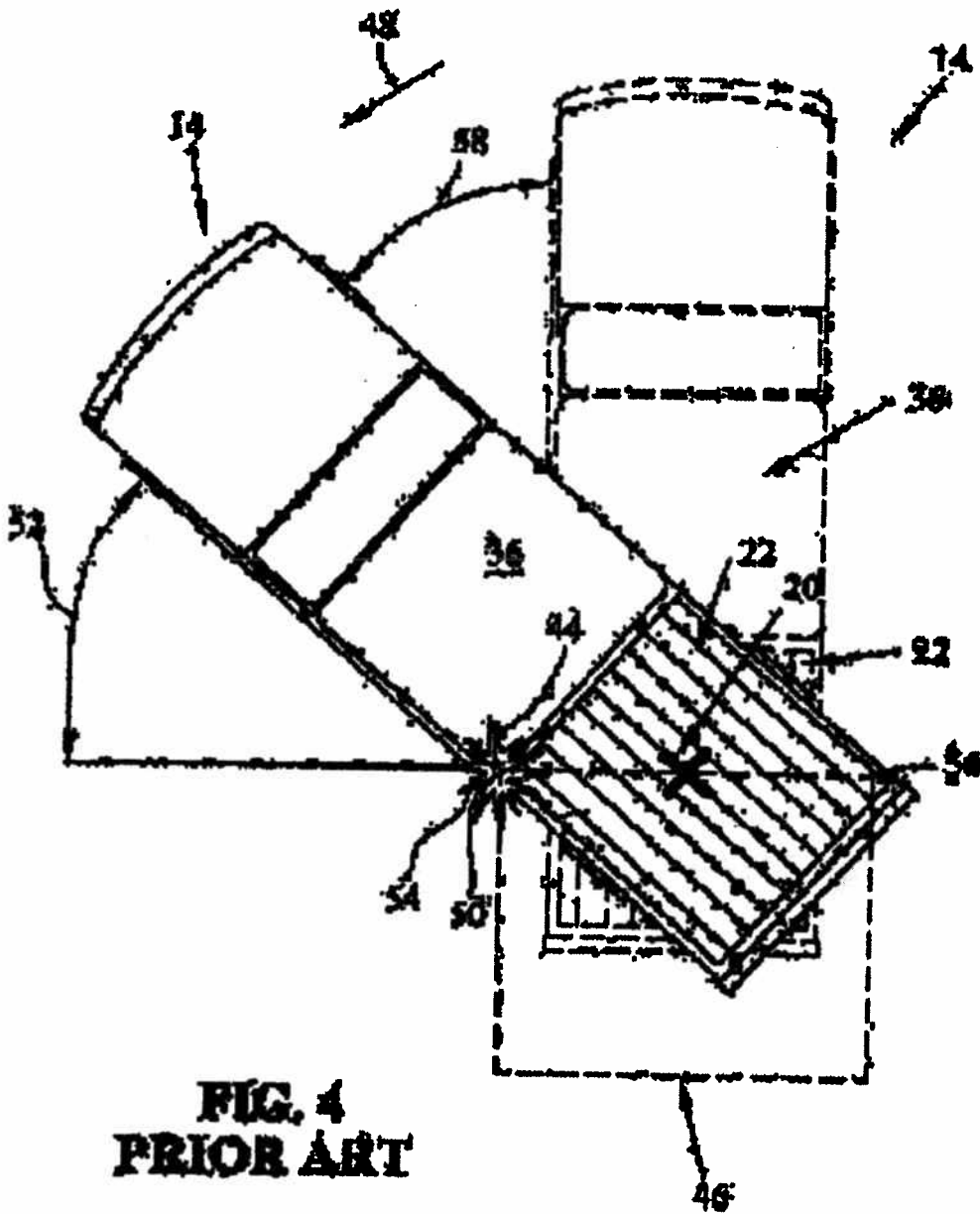
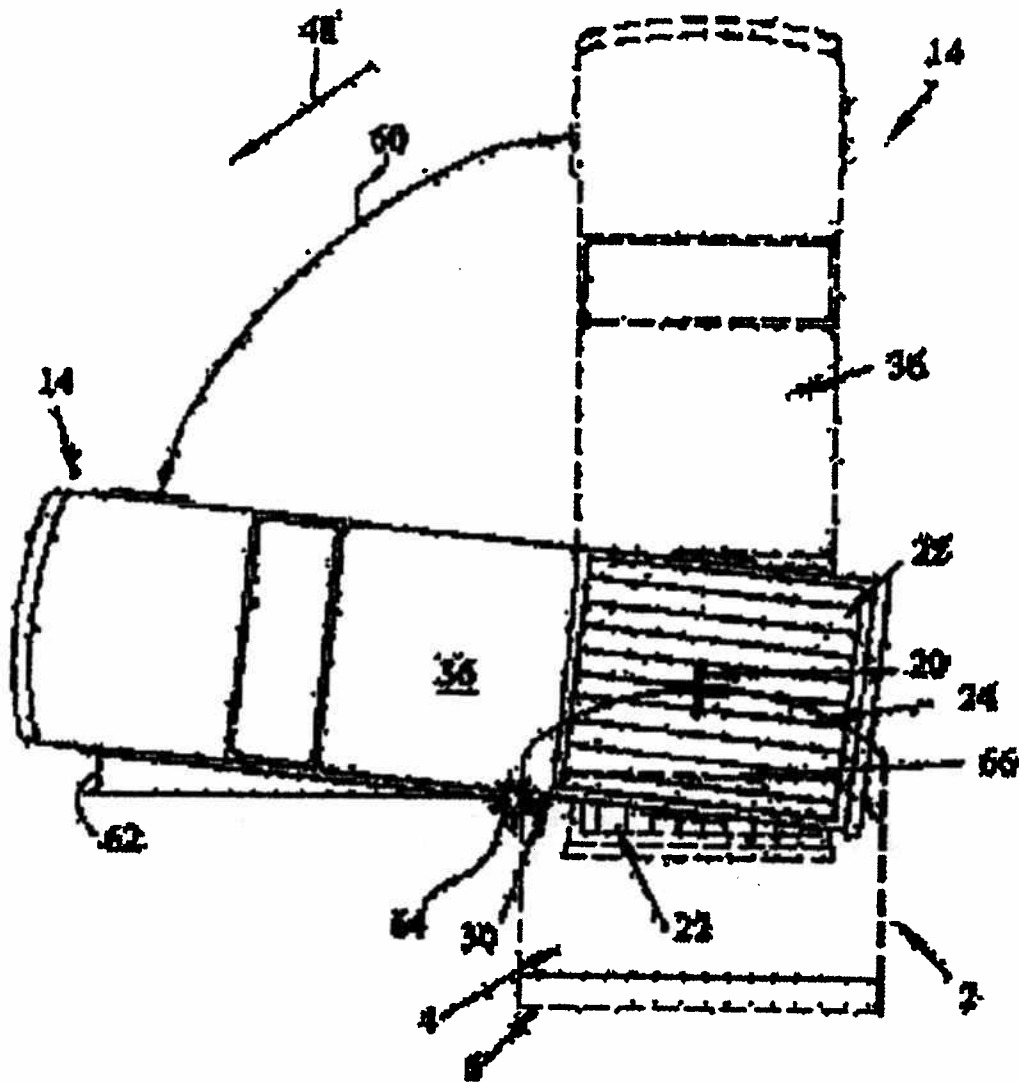


FIG. 3





**FIG. 5**

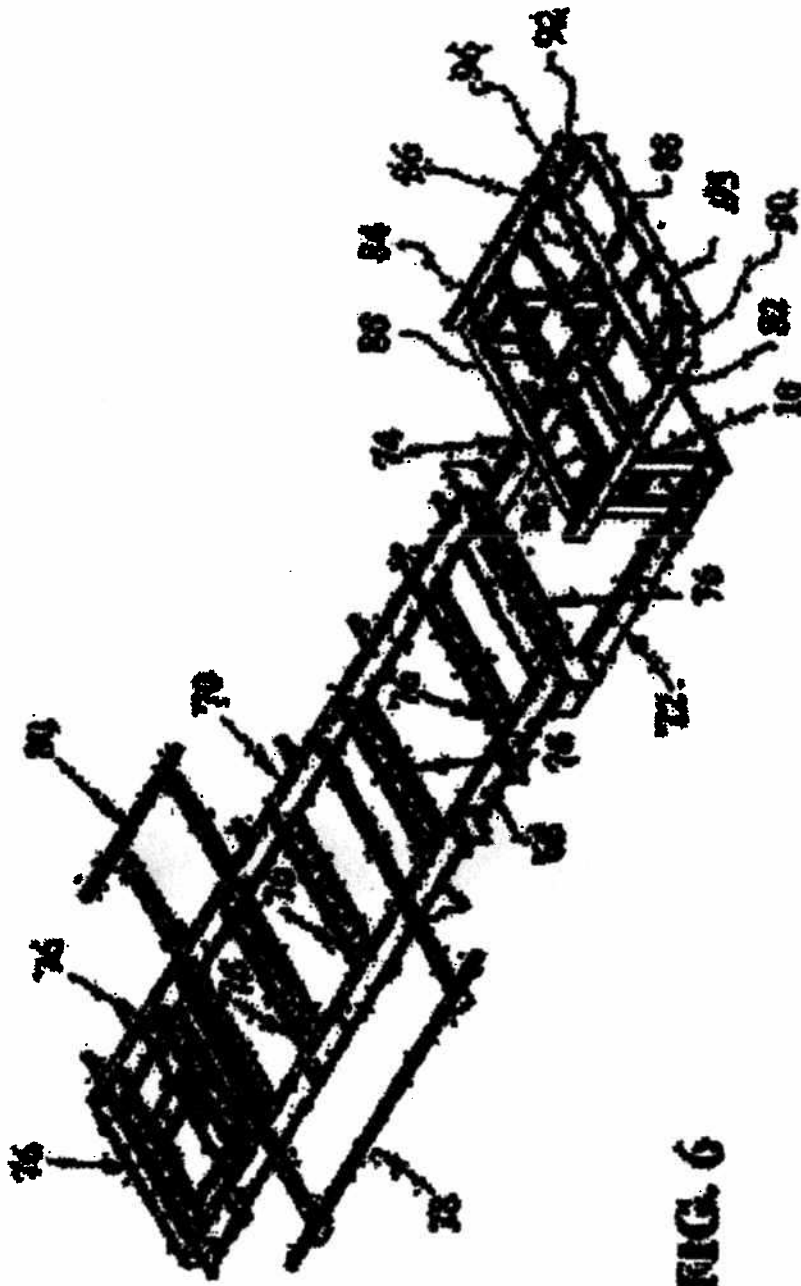


FIG. 6

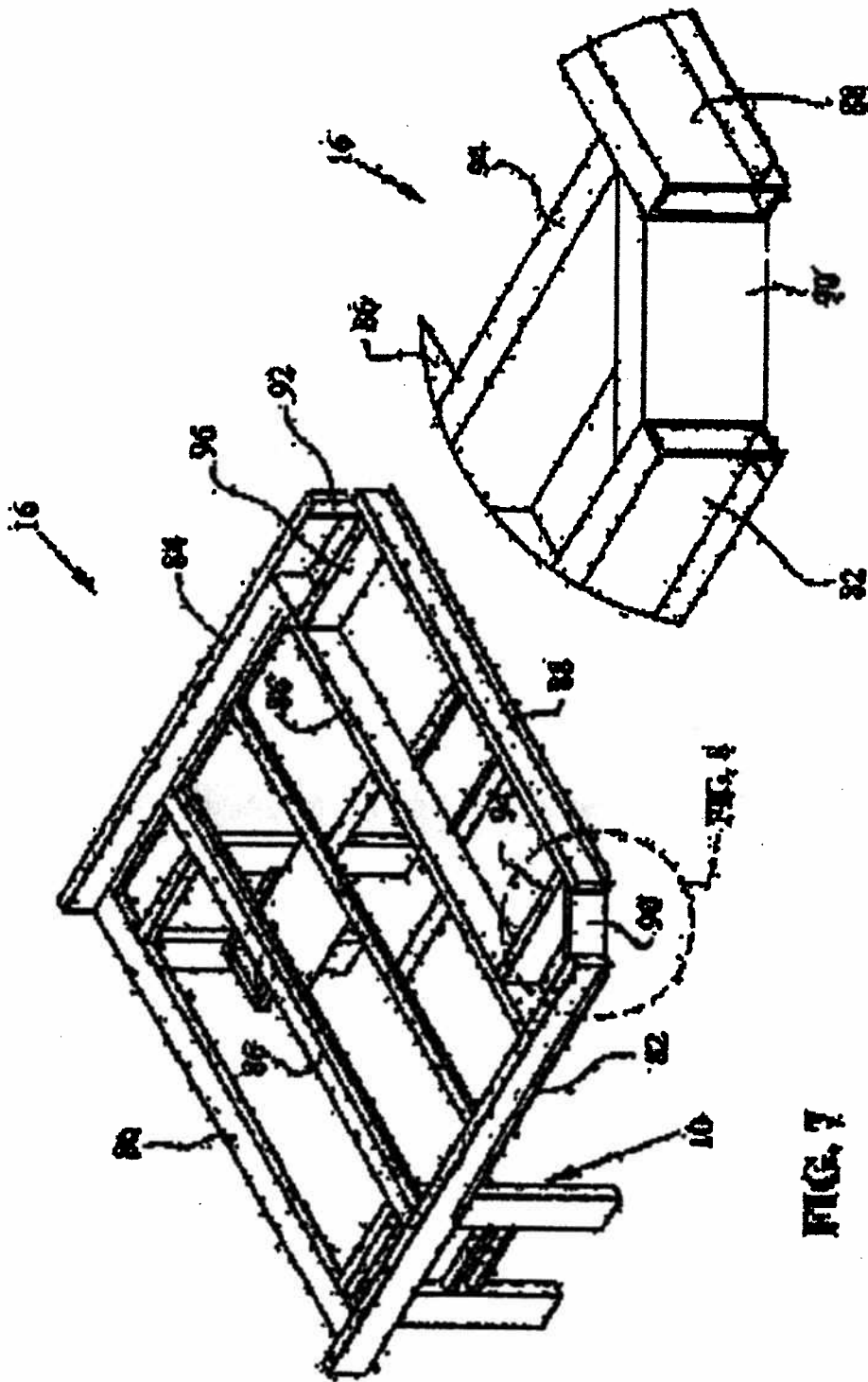
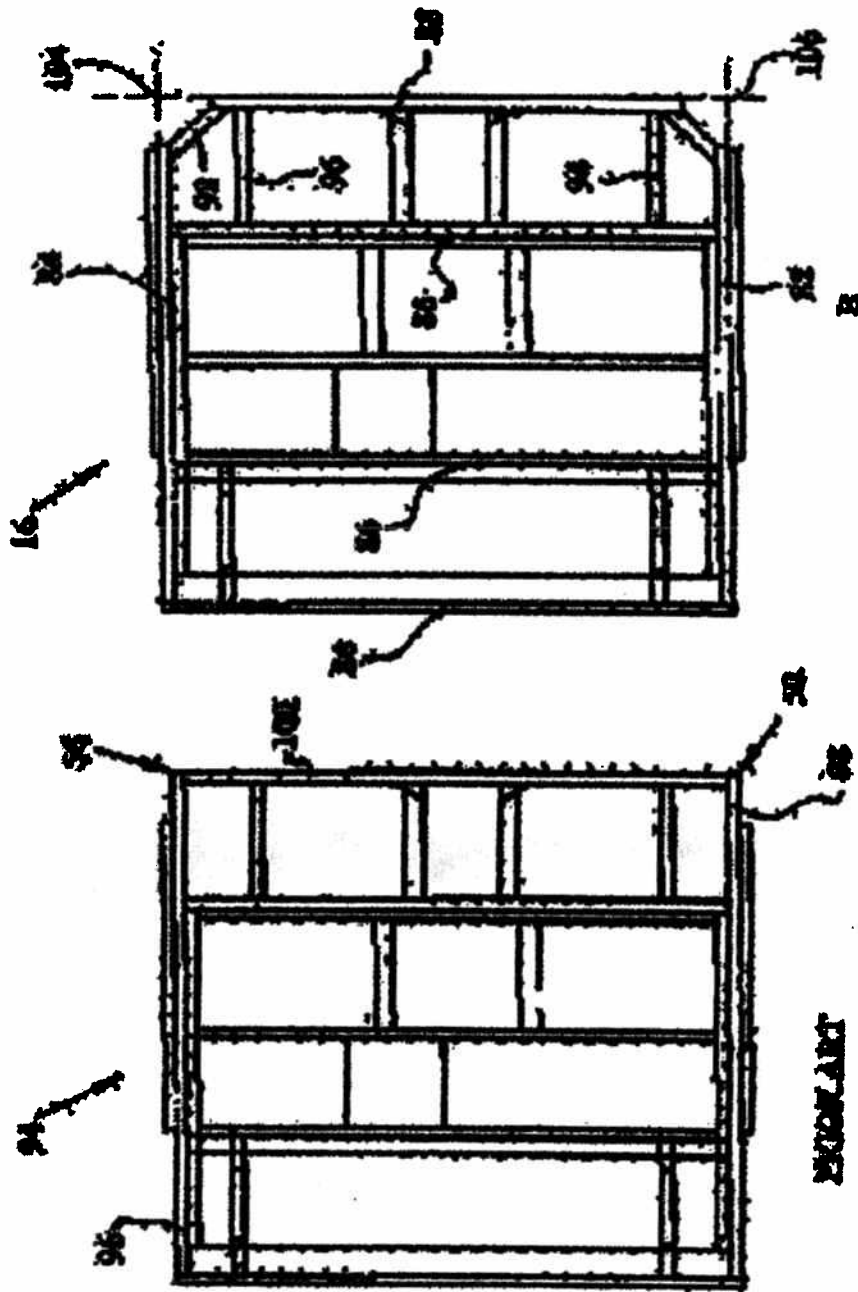


FIG. 8

FIG. 7



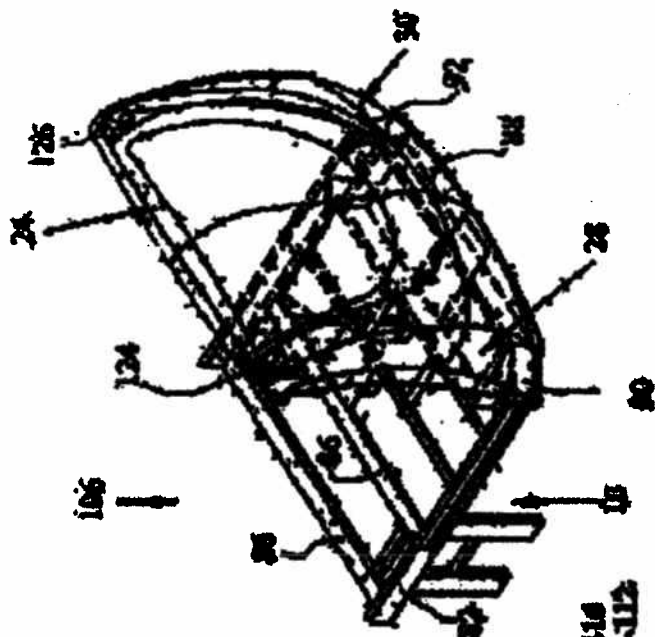


FIG. 11

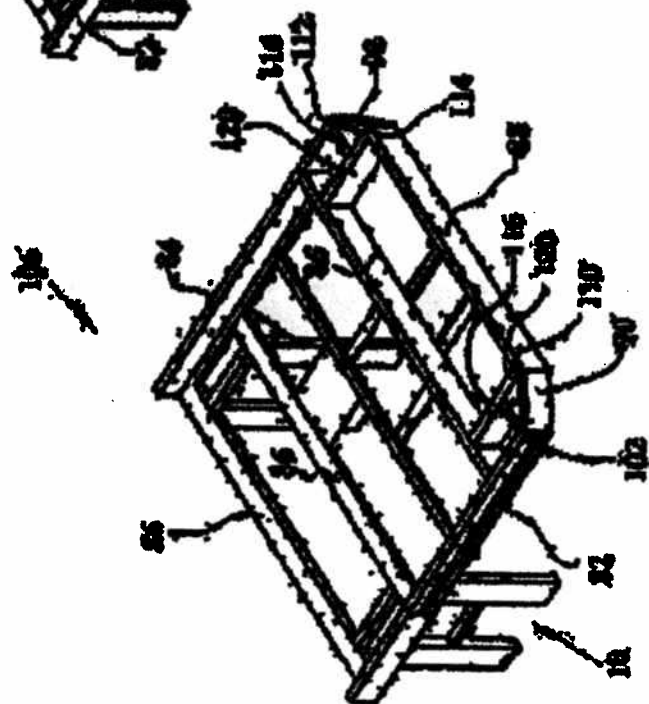


FIG. 10

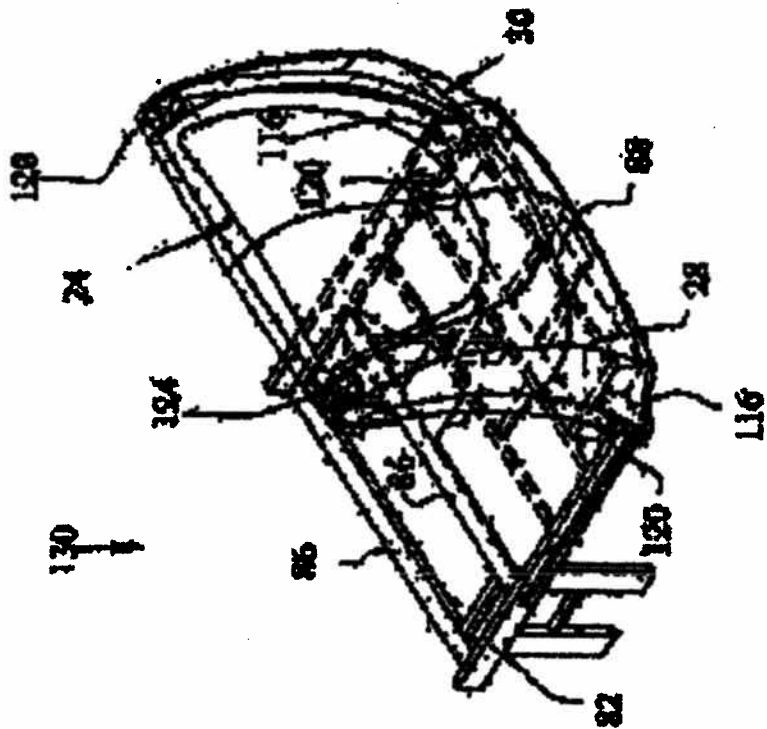


FIG. 13

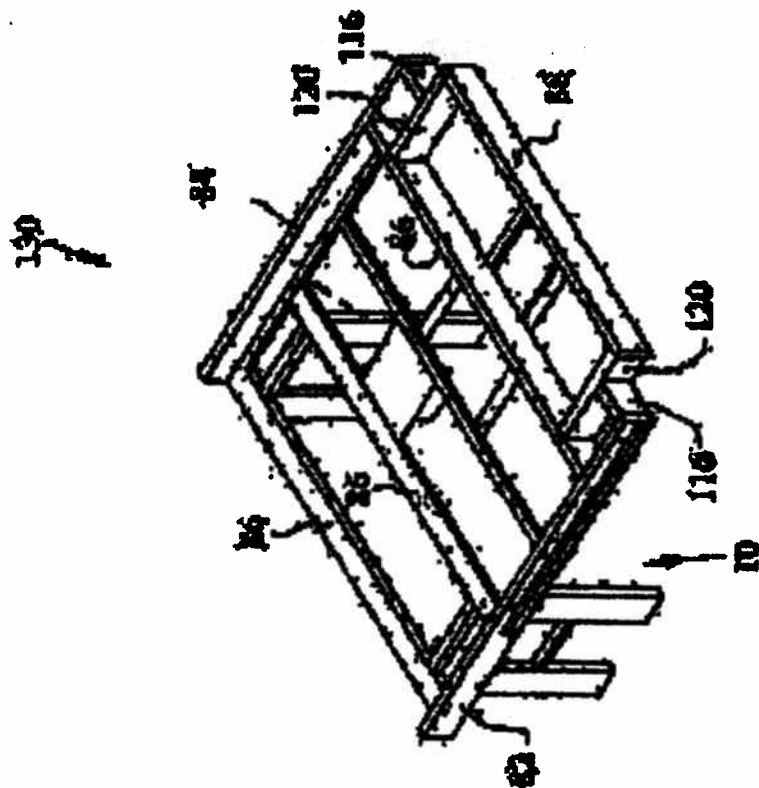


FIG. 12



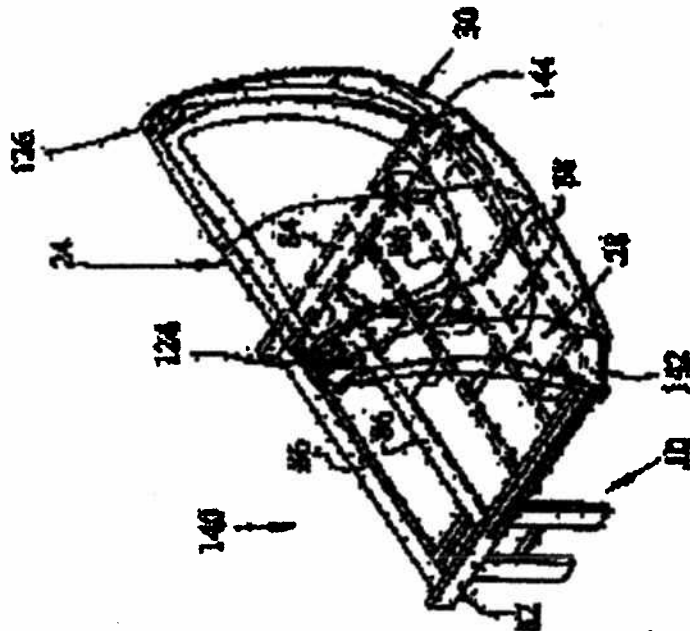


FIG. 15

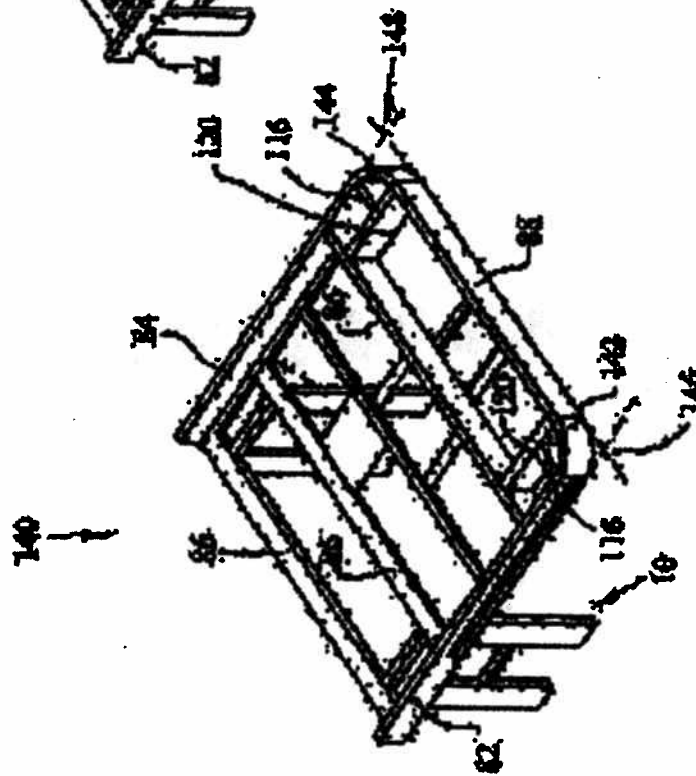


FIG. 14

## TRAVEL TRAILER HAVING IMPROVED TURNING RADIUS

### Detailed Description of the Invention

[0001] The present application is related to and claims priority to U.S. Provisional Patent Application Serial No. 60/557,302, filed on March 29, 2004, entitled IMPROVED FIFTH WHEEL TRAILER. The subject matter disclosed in that provisional application is hereby expressly incorporated into the present application.

### TECHNICAL FIELD

[0002] The present disclosure relates generally to travel and fifth wheel-type trailers. In particular, the present disclosure is related to the configuration of such trailers that are hitched to, and pivotable relative to, an attached towing vehicle.

### BACKGROUND AND SUMMARY

[0003] Travel trailers and fifth wheel trailers are commonly known and used as campers or used for hauling. Typically, fifth wheels are configured to be pivotably attached to pickup or similar type trucks. The bed of the pickup truck has a mating hitch attached thereto configured to receive a hitch located on the underside of the forward end of the fifth wheel. The fifth wheel often comprises an upper deck and a lower deck. The upper deck is typically located forward on the fifth wheel and is configured to extend over the rear of the pickup truck so the hitch can attach to the mating hitch on the truck's bed.

[0004] An issue that has arisen in recent years with fifth wheels, precipitated by the development and popularity of extended-cab pickup trucks. These extended-cab pickup trucks, which typically offer a second row of seating, extend the cab length often at the expense of the bed length. A consequence of this is that more pickup trucks now exist with shortened beds than in the past. Accordingly, the upper decks of conventional fifth wheels now occupy a greater portion of that shortened bed than in truck beds of the past. The less space that exists between the cab of a short bed truck and the forward end of the fifth wheel, the more impaired the turning radius of the truck can be.

[0005] Conventionally, the upper deck of a typical fifth wheel has a rectangular or parallelogram-shape footprint whose forward corner edges form right angles. The compartment extending upward therefrom is similarly cubicle and includes right-angled corner edges as well. These right-angled corner edges of the fifth wheel have a propensity to hit the rear corner of the cab of a tow vehicle if the turning radius of that vehicle becomes too great. As a result, the driver of the tow vehicle is required to either take broader turns or engage specialty hitches that extend the distance between the cab and the fifth wheel. These are not always desirable options because often there may not be available space to make a broad turn, and specialty hitches are cumbersome and expensive. Typically, these hitches are engaged before the turn and disengaged after the turn. It would, therefore, be beneficial to provide an alternative design of fifth wheel or travel trailer that is configured to increase the turning radius of the vehicle.

[0006] Accordingly, an illustrative embodiment of the present disclosure provides a travel trailer characterized by

a chassis assembly coupled to a wheel assembly. A compartment is provided having at least one side wall and a forward wall. A hitch assembly is located adjacent the chassis assembly, and the forward wall. The hitch assembly is configured to couple to a mating hitch on a towing vehicle. The travel trailer also comprises a panel located between the side and forward walls. The panel forms an angle between itself and at least the side wall that is greater than 90 degrees.

[0007] In the above and other illustrative embodiments, the travel trailer may also comprise: the angle formed between the side wall and the panel reduces any right-angled attachment between the side and forward walls to improve the towing vehicle's turning radius relative to the travel trailer; the panel forms an angle between itself and forward wall that is greater than 90 degrees; the panel eliminates any right-angle attachment between the side and forward walls; and the chassis assembly comprises a recess at edges adjacent the panel.

[0008] Another illustrative embodiment of the travel trailer comprises a chassis, a wheel assembly, a hitch assembly, and an outer coupling rail. The chassis includes a front end and a rear end. The chassis also includes a front outer frame rail located substantially perpendicular to a side outer frame rail. The wheel assembly is coupled to the chassis adjacent the rear end. The hitch assembly is attached to the chassis adjacent the front end. The outer coupling rail extends between the front and side frame rails. The outer coupling rail forms an angle between itself and at least the side frame rail at a front edge of the travel trailer that is greater than 90 degrees.

[0009] In the above and other illustrative embodiments, the travel trailer may also comprise: the coupling rail forming an angle between itself and the front frame rail that is greater than 90 degrees to improve the towing vehicle's turning radius relative to the travel trailer; the coupling rail eliminating a right-angle attachment between the side and front frame rails; and a compartment attached to the chassis at the front edge adjacent the outer coupling rail which comprises an inwardly oriented recess that extends from the chassis.

[0010] Another illustrative embodiment of the travel trailer comprises a chassis, a forward panel, at least one side panel, and a corner panel. The chassis assembly comprises a hitch assembly adjacent a front end of the trailer and a plurality of wheels adjacent a rear end of the trailer. The forward panel is located at the front end. The corner panel joins the forward and side panels but does not form a right-angled vertex between the forward and side panels. This allows an increased turning radius for the trailer as compared to forward and the side panels that join to form a right-angled vertex.

[0011] In the above and other illustrative embodiments, the travel trailer may also comprise: the corner panel forming a recess at a front edge of the travel trailer; the chassis assembly comprising a frame assembly having a corner rail located at a front corner of the frame that does not form a right-angled vertex at the front corner of the frame; and a compartment having right and left front corners, each of which is recessed inwardly to allow an increased turning radius for the trailer as compared to front edges having a right-angled vertex.

[0012] Another illustrative embodiment of the travel trailer comprises a chassis, a compartment, and a corner

panel portion. The chassis comprises a hitch assembly adjacent a front end of the trailer and a plurality of wheels adjacent a rear end of the trailer. The compartment comprises at least a forward panel portion located at the front end and at least one side panel portion. The corner panel joins the forward and the side panels and recesses inwardly toward the interior of the compartment to allow an increased turning radius for the travel trailer as compared to forward and the side panels that join to form a right-angled vortex.

[0013] Another illustrative embodiment is a travel trailer for use with a towing vehicle. The towing vehicle has a mating hitch coupled thereto and is configured to haul the travel trailer. The travel trailer further comprises a chassis and a hitch. The chassis itself comprises first and second longitudinally extending side frame members, forward and rearward cross-members, and a first brace. The first and second longitudinally extending side frame members are oriented substantially parallel to each other and located exteriorly on the chassis. The forward and rearward cross-members are oriented substantially perpendicular to the first and second side members. The forward cross-member is also located exteriorly on the chassis and whose end does not attach to a corresponding end of the first side member. The first brace is attached adjacent the ends of forward cross-member and the first side member, and is located exteriorly on the chassis, and is oriented non-parallel to both the forward cross-member and the first side member. The hitch is attached to a portion of the chassis and couples with the mating hitch on the towing vehicle.

[0014] In the above and other illustrative embodiments, the travel trailer may also comprise the towing vehicle having a bed that has the mating hitch attached thereto, and wherein a portion of the chassis is located over the bed; a compartment attached to the chassis and at least one recessed corner edge located at a forward end of the trailer adjacent the first brace to allow an increased turning radius for the travel trailer; and a frame having angled corner edges adjacent the recesses at the front end of the compartment.

[0015] Another illustrative embodiment is a travel trailer configured to be coupled to, and towed by a vehicle. The travel trailer comprises, a compartment attached to a chassis that includes a front end and a rear end. A plurality of wheels is attached to the chassis adjacent the rear end and a hitch assembly is attached to the chassis adjacent the front end. The compartment at the front end of the chassis forms first and second corners. A recess is located at each corner edge of the compartment such that cavities formed by each recess may receive a portion of the vehicle while the vehicle is engaged in a turn.

[0016] Another illustrative embodiment is a travel trailer configured to be coupled to, and towed by a vehicle. The travel trailer comprises a compartment attached to a chassis that includes a front end and a rear end. A plurality of wheels is attached to the chassis adjacent the rear end and a coupling is attached to the chassis adjacent the front end. The front end of the chassis forms first and second corner edges that are recessed.

[0017] Another illustrative embodiment is a travel trailer configured to be coupled to, and towed by a vehicle. The travel trailer comprises a chassis assembly, a hitch, a compartment and a cap. The chassis assembly includes front and rear ends. The hitch is attached to the chassis assembly

adjacent the front end. The compartment is attached to the chassis assembly. The cap is located at the front end of the chassis and attached to the compartment. The cap has at least one front corner edge that includes a recess directed inward toward the compartment.

[0018] In the above and other illustrative embodiments, the travel trailer may also comprise: the cap further comprising a second front corner edge that also includes a recess directed inward toward the compartment; the space formed by the recesses being configured to receive a portion of the vehicle when engaged in a turn; the cap being a monolithic structure; and the cap being a plurality of structures.

[0019] Additional features and advantages of the travel trailer will become apparent to those skilled in the art upon consideration of the following detailed description of the illustrated embodiment exemplifying the best mode of carrying out the travel trailer as presently perceived.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0020] The present disclosure will be described hereafter with reference to the attached drawings which are given as non-limiting examples only, in which:

[0021] Fig. 1 is front perspective view of an illustrative trailer including recessed front corners according to an illustrative embodiment of the present disclosure;

[0022] Fig. 2 is a top perspective detail view of a front corner edge portion of the trailer and a rear cab portion of a tow vehicle engaged in a turn;

[0023] Fig. 3 is another top perspective detail view showing the other front corner edge portion of the trailer and the other rear cab portion of the tow vehicle engaged in a turn;

[0024] Fig. 4 is a top schematic view of an illustrative tow vehicle and a prior art trailer;

[0025] Fig. 5 is a top schematic view of the illustrative tow vehicle of Fig. 4 and a trailer according to an illustrative embodiment of the present disclosure;

[0026] Fig. 6 is a perspective view of a trailer frame according to an illustrative embodiment of the present disclosure;

[0027] Fig. 7 is a perspective view of a portion of the trailer frame of Fig. 6;

[0028] Fig. 8 is a detail perspective view of a portion of the trailer frame about section A of Fig. 7;

[0029] Fig. 9a is a top view of a portion of a prior art trailer frame;

[0030] Fig. 9b is a top view of a portion of the trailer frame of Fig. 6;

[0031] Fig. 10 is a perspective view of a portion of a trailer frame according to another illustrative embodiment of the present disclosure;

[0032] Fig. 11 is a perspective view of the portion of the frame of Fig. 10 including a front cap assembly coupled thereto;

[0033] Fig. 12 is a perspective view of a portion of a trailer frame according to another illustrative embodiment of the present disclosure;

[0034] Fig. 13 is a perspective view of the portion of the frame of Fig. 12 including a front cap assembly coupled thereto;

[0035] Fig. 14 is a perspective view of a portion of a trailer frame according to another illustrative embodiment of the present disclosure; and

[0036] Fig. 15 is a perspective view of the portion of the frame of Fig. 14 including a front cap assembly coupled thereto.

[0037] Corresponding reference characters indicate corresponding parts throughout the several views. The exemplification set out herein illustrates embodiments of the travel trailer, and such exemplification is not to be construed as limiting the scope of the travel trailer in any manner.

#### DETAILED DESCRIPTION OF THE DRAWINGS

[0038] A front perspective view of an illustrative fifth wheel or travel trailer 2 is shown in Fig. 1. The trailer shown in this view is commonly referred to as a fifth wheel trailer. This trailer 2, as well as other trailer designs, generally comprises a compartment 4 that sits on a frame chassis 6 (see, e.g., Figs. 6 through 15) which are tied to a plurality of wheels 8. This trailer 2 includes a dual deck design having a step 10 located near the front end 12 of trailer 2. The step 10 allows the upper deck 16 of compartment 4 to extend over the bed of a tow vehicle 14 such as a pickup truck. (See also Fig. 2.) Attached to upper deck 16 of trailer 2 is a hitch assembly 18. This hitch assembly 18 is located adjacent the front end 12 of trailer 2, as well. The hitch assembly 18 is configured to engage a mating hitch assembly, typically located on bed 22 of the vehicle 14. (See, e.g., Fig. 2.)

[0039] The forward most end of the compartment comprises an illustrative forward end cap 24. In this illustrative embodiment, end cap 24 comprises a forward face 26, recessed corner edges 28, 30 and side panels 32, 34. Illustratively, the forward face 26 is bowed outwardly from compartment 4 with its apogee located near the vertical center of the same, as shown in Fig. 1. Also, as one illustrative embodiment, the recessed corner edges 28, 30 follow a similar contour as forward face panel 26. This allows a portion of the compartment to extend forward of the rear end of passenger compartment 36 of tow vehicle 14. (See, e.g., Fig. 5.) In addition, at least a portion of the front corners of the trailer 2 are occupied by the recessed corner edges 28, 30. Clearance provided by recessed corner edges 28, 30 is particularly useful for fifth wheels and other trailers that include an upper deck 16 similar to that shown herein. Since the portion of the compartment located over upper deck 16 is adjacent the rear end of passenger compartment 36 on vehicle 14, limited distance between the two structures may exist. It is this limited distance that inhibits the turning radius of the vehicle 14. As shown in Fig. 1, the space formed by the inward directed, arcuate profile corners, can receive a portion of compartment 36, thus creating enhanced turn radiuses, as compared to conventional right-angle vertex cornered edges of conventional trailers. The distinction between the two corner types is illustratively indicated by reference numeral 38. Thus, recessed corner edges 28, 30 are directed inwardly toward the interior of compartment 4, the effective turn radius available for the trailer can be enhanced over conventional fifth wheel or other travel trailers having standard 90 degree corner edges.

[0040] It is appreciated that alternative embodiments of forward end cap 24 may include any number of shapes having inward directed corners. Cap 24 may also be manufactured from a plurality of panels, or may be a monolithic molded or formed structure. Illustratively, in one embodiment, forward face 26 may comprise a separate forward panel, separate recessed, and/or even separate angled panels attached thereto, along with separate side panels attached thereto. It is further appreciated that in other illustrative embodiments, the recessed corner edges can be of varying shape, depth, contour, and angle to accommodate and increase the turning radius of the attached vehicle.

[0041] A top perspective detail view of recessed corner edge 30 of trailer 2 coupled to vehicle 14 which is engaged in a turn, is shown in Fig. 2. A cavity 42 produced by the contour of recessed corner edge 30 receives at least a portion of corner 44 of vehicle 14. As shown in this view, mating hitch assembly 20 is attached to bed 22 of vehicle 14 and is engaged to hitch assembly 18 to pivotably attach trailer 2 to vehicle 14. (See, also, Fig. 3.) This view demonstrates how such a turn would not be possible without recessed corner edge 30. Side wall 34, if extended more forwardly on trailer 2, along with front face 26 extending its width, a conventional right-angle corner edge would be formed that would become crushed during such a tight turn shown therein. From this view it is appreciated that the recessed corner edge 30 can be contoured as desired, so its cavity 43 receives a portion of the corner of the cab of the vehicle having any unique or conventional configuration. (See Fig. 3.) It is contemplated herein that the invention is not limited to the specific size, shape, and contour of the recessed portion. It can further be seen from this view how the arcuate contour of forward end cap 24 can increase the amount of available space in the compartment by being able to extend over at least a portion of passenger compartment 36 of vehicle 14. (See, also, Fig. 5.) This may be achieved either independently or in combination with recessed corner edges 28, 30.

[0042] Another top perspective detail view showing an opposite turn of vehicle 14 with respect to trailer 2, is shown in Fig. 3. This view demonstrates how recessed corner edge 28, similar to that shown with respect to recessed corner edge 30, can increase the turn radius of vehicle 14. Such a sharp turn, as depicted in this view, could not be achieved with a trailer having conventional right-angled corner edges.

[0043] To further illustrate, a top schematic view of tow vehicle 14 hitched to a prior art, conventionally shaped trailer 46, is shown in Fig. 4. As vehicle 14 turns in direction 48, the corner 50 of prior art trailer 46 impacts rear corner 44 of passenger compartment 36 at a relatively shallow angle. This produces a relatively large crush zone as indicated by reference numeral 52 at impact 54. Because the forward corners of prior art trailer 46 include corners having right-angled edges as indicated by reference numerals 50 and 56, the turn radius is relatively small, as indicated by reference numeral 58.

[0044] In contrast, as shown in Fig. 5, the same vehicle 14 is shown making a turn with an illustrative embodiment of trailer 2 hitched thereto. As shown, when vehicle 14 turns in direction 48, the recessed corner edge 30 provides enough clearance to create a relatively large turn radius, indicated by reference numeral 60, and has a relatively small crush zone 62 at impact point 64. It is also appreciated from this view

how the illustrative arcuate shape of forward end cap 24, as described with respect to Fig. 1, may enhance the available space within compartment 4. In this view it is shown that the forward edge 66 is recessed towards the interior of compartment 4 relative to the forward most point of forward end cap 24. In one illustrative embodiment this combination between the arcuate shape of forward end cap 24 and the recessed positioning of forward edge 66 of chassis 6 provides a compromise between increased interior space of compartment 4 and the enhanced turning radius as shown.

[0045] A perspective view of an illustrative embodiment of chassis 6 is shown in Fig. 6. Chassis 6 is illustratively a frame that the flooring and compartment are built upon. Such framing includes side frame members 68, 70 extending longitudinal from front to rear and are joined by additional side frame members 72, 74. In this illustrative embodiment, cross beams 76 extend between the side frame members 68 through 74. Shown in this illustrative embodiment are also slide-out frame members 78 and 80. As discussed with respect to Fig. 1, this trailer includes a step 10 that provides the upper deck 16, herein formed on the chassis by side frame members 82, 84 and structurally secured by cross beams 86. As shown herein, side frame members 82, 84 do not extend and attach directly to forward edge beam 88. Rather, angled braces 90 and 92 extend between frame members 82, 84 and forward edge beam 88 respectively, as shown herein. Angled braces 90, 92, thus, effectively eliminate the right-angled corner edges known to inhibit the turning radius of the vehicle relative to the trailer. It is contemplated that the precise angle formed between, for example, frame members 82 and angled brace 90, can be of any angle to allow a recess to form. As illustratively shown herein, the angle formed between the two structures is greater than 90 degrees. The same is illustratively the case with the angle between forward edge beam 88 and both angled braces 90, 92 as shown herein. Also shown are illustrative forward brace members 95, 96 which serve to strengthen chassis 6.

[0046] A perspective view of a portion of chassis 6 is shown in Fig. 7. Specifically, shown is the upper deck portion 16 which includes side frame members 82, 84, and cross beams 86. Forward edge beam 88 is shown attached to angled braces 90, 92, which are themselves attached to side frame members 82, 84, respectively. A detail view of a forward corner of upper deck 16 is shown in Fig. 8. This view further illustrates the attachment of angled brace 90 forward edge beam 88, and side frame member 82. It can be appreciated from this view how beam 88 and side frame member 82 do not directly attach, thus eliminating the right-angle corner edge that would otherwise be formed by their attachment.

[0047] Top views of the upper deck of the travel trailer are shown in Figs. 9a and b. Specifically, Fig. 9a is a prior art version of such an upper deck, whereas Fig. 9b depicts upper deck 16 as discussed with respect to Figs. 6 through 8. Comparing the structure of 9a to the structure of 9b much is similar except for the forward corners and the forward edge beams. For example, the prior art upper deck 94 uses side frame members 96, 98 to attach to forward edge beam 100 to form corner right-angled edges 50, 56. (See, also, Fig. 4.) It is these corner edges that can limit the turning radius of vehicle 14 for the reasons previously discussed. By

comparison, such corner edges have been removed from upper deck 16, as indicated by reference numerals 106, 104 in Fig. 9b.

[0048] Perspective views of another illustrative embodiment of an upper deck frame 106 are shown in Figs. 10 and 11. As shown in Fig. 10, many of the side frame members 82, 84, as well as cross beams 86, are the same or similar to that shown in the previous embodiments. Furthermore, forward edge beam 88 is also positioned in a comparable location as prior embodiments. This illustrative embodiment differs from the prior embodiments from the perspective that angled braces 90, 92 are attached to the ends of frame members and beams 82, 88 and 84, 88, respectively. For example, angled brace 90 is attached to the terminus 108 of side frame member 82. Similarly, angled brace 90 is attached to terminus 110 of forward edge beam 88. Angled brace 92 follows suit by attaching to side frame member 84 at terminus 112 and to forward edge beam 88 at terminus 114. In this embodiment cross beams 116 and 120 illustratively provide structural support to the forward corners.

[0049] The perspective view of upper deck frame 106 in Fig. 11 shows an illustrative embodiment of forward end cap 24 attached thereto. The angled braces 90, 92 accommodate the recessed corner edges 28, 30, as previously discussed. It is appreciated that the recessed corner edges may follow the contour of braces 90, 92, or they may, as shown herein, form a differently shaped recessed cavity. Further shown in this view are illustrative attachments 124, 126 which are configured to be used to attach end cap 24 with compartment 4. It is appreciated, however, that other means of attachment and/or sealing can be employed.

[0050] Perspective views of another illustrative embodiment of upper deck 130 of a trailer are shown in Figs. 12 and 13. As shown in Fig. 12, upper deck 130 is similar in several respects to the prior embodiments, including side frame members 82, 84, as well as cross beams 86 extending there across. The distinction from the previous embodiments is that angled braces 90, 92 are removed completely which illustratively provides an even deeper recess within the forward corners of the deck 130. As shown, cross beams 116, 120 serve as the outer structure of deck 130 at the forward corners. Although cross beam 116 forms a right-angle attachment with side frame member 82, and cross beam 120 does the same with forward edge beam 88, frame member 82 does not attach to forward edge beam 88 to form a right-angled corner edge as disclosed in the prior art. Rather the right angle attachments disclosed in this illustrative embodiment are directed inwardly toward the interior of compartment 4. Similar to the previous embodiments, forward end cap 24 is shown attached to upper deck 130 in Fig. 13. It is, again, appreciated that the recessed corner edges can be of any useful depth and may be formed to conform to the shape of the cavities created by cross beams 116, 120. Conversely, as shown herein, recessed corner edges 28, 30 may also take a differing recess shape than the cavities formed by cross beams 116, 120.

[0051] Perspective views of another illustrative embodiment of upper deck 140 of a trailer are shown in Figs. 14 and 15. As shown in Fig. 14, upper deck 140 is similar in several respects to the prior embodiments, including side frame members 82, 84, as well as cross beams 86 extending there across. The distinction from the previous embodiments

is arcuate braces 142, 144. As shown, cross beams 116 and 120 still serve as structural supports adjacent the forward corners. Arcuate braces 142, 144, however, serve as the outer frame members at the forward corners, each attached to their respective frame members 82, 84, and both attached to forward edge beam 88. The forward corners are still recessed as indicated by reference numerals 146, 148 which depict conventional forward frame corners. (See, also, Fig. 9a.) Similar to the previous embodiments, forward end cap 24 is shown attached to upper deck 140 in Fig. 15. It is, again, appreciated that the recessed corner edges 28, 30 can be of any useful depth and may be configured to conform to the shape of the cavities created by arcuate braces 142, 144. Conversely, as shown herein, recessed corner edges 28, 30 may also take a differing recess shape than the cavities formed by cross beams 116, 120.

[0052] Although the present disclosure has been described with reference to particular means, materials and embodiments, from the foregoing description, one skilled in the art can easily ascertain the essential characteristics of the present disclosure and various changes and modifications may be made to adapt the various uses and characteristics without departing from the spirit and scope of the present invention as set forth in the following claims.

**What is Claimed is:**

1. A travel trailer characterized by a chassis assembly coupled to a wheel assembly, a compartment having at least one side wall and a forward wall, and a hitch assembly adjacent the chassis assembly and the forward wall, the hitch assembly is configured to couple to a mating hitch on a towing vehicle, the travel trailer comprising: a panel located between the side and forward walls; wherein the panel forms an angle between itself and at least the side wall that is greater than 90 degrees.
2. The travel trailer of claim 1, wherein the angle formed between the side wall and the panel reduces any right-angled attachment between the side and forward walls to improve the towing vehicle's turning radius relative to the travel trailer.
3. The travel trailer of claim 1, wherein the panel forms an angle between itself and forward wall that is greater than 90 degrees.
4. The travel trailer of claim 3, wherein the panel eliminates any right-angle attachment between the side and forward walls.
5. The travel trailer of claim 1, wherein the panel forms a recess directed inwardly toward the interior of the compartment.
6. A travel trailer comprising: a chassis having a front end and a rear end; wherein the chassis has a front outer frame rail located substantially perpendicular to a side outer frame rail; a wheel assembly coupled to the chassis adjacent the rear end; a hitch assembly attached to the chassis adjacent the front end; an outer coupling rail extending between the front and side outer frame rails; wherein the outer coupling rail forms an angle between itself and at least the side frame rail at a front corner of the travel trailer that is greater than 90 degrees.
7. The travel trailer of claim 6, wherein the coupling rail forms an angle between itself and the front outer frame rail that is greater than 90 degrees to improve the towing vehicle's turning radius relative to the travel trailer.
8. The travel trailer of claim 7, wherein the coupling rail eliminates a right-angle attachment between the side and front frame rails.
9. The travel trailer of claim 8, further comprising a front end cap located adjacent the front corner and the outer coupling rail, wherein the front end cap comprises an inwardly directed recess toward the chassis.
10. A travel trailer comprising: a chassis assembly which comprises a hitch assembly adjacent a front end of the trailer and a plurality of wheels adjacent a rear end of the trailer; a forward panel located at the front end; at least one side panel; and a corner panel that joins the forward and side panels to prevent an outer right-angled vertex from being formed between the forward and side panels to allow an increased turning radius for the trailer.
11. The travel trailer of claim 10, wherein the corner panel forms a recess along a front corner edge of the travel trailer.
12. The travel trailer of claim 11, wherein the chassis assembly comprises a frame assembly having a corner rail located at a front corner of the frame that does not form an outer right-angled vertex at the front corner of the frame.
13. The travel trailer of claim 12, further comprising a compartment having right and left front corner edges, each of which is recessed inwardly toward the interior of the compartment to allow an increased turning radius for the trailer.
14. A travel trailer comprising: a chassis which comprises a hitch located assembly adjacent a front end of the trailer and a plurality of wheels located adjacent a rear end of the trailer; a compartment comprising at least a forward panel portion located at the front end and at least one side panel portion; and a corner panel portion that joins the forward and the side panel portions and forms a recess directed inwardly toward the interior of the compartment to allow an increased turning radius for the travel trailer as compared to forward and the side panels that join to form an outer right-angled vertex.
15. A travel trailer for use with a towing vehicle having a mating hitch coupled thereto and configured to haul the travel trailer, the travel trailer comprising: a chassis comprising: first and second longitudinally extending side frame members oriented substantially parallel to each other and located exteriorly on the chassis; a forward cross-member located substantially perpendicular the first and second side members, wherein the forward cross-member is located exteriorly on the chassis and whose end does not attach directly to a corresponding end of the first side member; a first brace attached to adjacent the ends of forward cross-member and the first side member, located exteriorly on the chassis, and oriented non-parallel to both the forward cross-member and the first side member; and a hitch attached to a portion of the chassis and couples with the mating hitch on the towing vehicle.
16. The travel trailer of claim 15, wherein the towing vehicle has a bed that has the mating hitch attached thereto, and wherein a portion of the chassis is located over the bed.
17. The travel trailer of claim 16, further comprising a compartment attached to the chassis and having at least one recessed corner edge located at a forward end of the trailer adjacent the first brace to allow an increased turning radius of the towing vehicle.
18. A travel trailer configured to be coupled to, and towed by a vehicle, comprises, a compartment attached to a chassis that includes a front end and a rear end, wherein a plurality

of wheels are attached to the chassis adjacent the rear end and a hitch assembly is attached to the chassis adjacent the front end, and wherein the compartment at the front end of the chassis forms first and second corners, and wherein a recess is located at each corner edge of the compartment such that cavities formed by each recess may receive a portion of the vehicle while the vehicle is engaged in a turn.

19. The travel trailer of claim 18, wherein the chassis comprises a frame that has angled corners adjacent the recesses at the front end of the compartment.

20. A travel trailer configured to be coupled to, and towed by a vehicle, which comprises a compartment attached to a chassis that includes a front end and a rear end, wherein a plurality of wheels are attached to the chassis adjacent the rear end and a coupling attached to the chassis adjacent the front end, and wherein the front end of the chassis forms first and second corner edges that are recessed inwardly toward the compartment.

21. The travel trailer of claim 20, wherein the compartment has front corner recessed edges located adjacent the recesses at the front end of the chassis.

22. A travel trailer configured to be coupled to, and towed by a vehicle, the travel trailer comprising: a chassis assembly having a front end and a rear end; a hitch attached to the chassis assembly adjacent the front end; a compartment attached to the chassis assembly; and a cap located at the front end of the chassis and attached to the compartment; wherein the cap has at least one front corner edge that is recessed inwardly toward the interior of the compartment.

23. The travel trailer of claim 22, wherein the cap further comprises a second front corner edge that is also recessed inwardly toward the interior of the compartment.

24. The travel trailer of claim 23, wherein the space formed by the recesses are configured to receive a portion of the vehicle when engaged in a turn.

25. The travel trailer of claim 24, wherein the cap is comprised of a monolithic structure.

26. The travel trailer of claim 24, wherein cap is comprised of a plurality of structures.

27. A front end cap for a travel trailer having a chassis assembly coupled to a wheel assembly, a compartment having at least one side wall and a forward wall, and a hitch assembly adjacent the chassis assembly and the forward wall, the hitch assembly configured to couple to a mating hitch on a towing vehicle, the front end cap comprising:

a first portion located between the side and forward walls and forming an angle between itself and the side wall that is greater than 90 degrees.

28. The front end cap of claim 27, wherein the first portion forms an angle between itself and the forward wall that is greater than 90 degrees.

29. A travel trailer chassis comprising:

a front outer frame rail;

a side outer frame rail substantially perpendicular to the front outer frame rail;

an outer coupling rail extending between the front and side outer frame rails, the outer coupling rail forming

an angle between itself and the side outer frame rail at a front corner of the chassis that is greater than 90 degrees.

30. The chassis of claim 29, wherein the outer coupling rail forms an angle between itself and the front outer frame rail that is greater than 90 degrees.

31. A travel trailer front end cap comprising:

a forward panel;

a least one side panel; and

a corner portion connecting the forward and side panels and forming a recess between the forward and side panels.

32. A travel trailer chassis comprising:

a forward edge beam;

an outer side frame member substantially perpendicular to the forward edge beam; and

an arcuate brace connecting the forward edge beam to the outer side frame member.

33. A travel trailer chassis comprising:

a forward edge beam having a first end;

an outer side frame member substantially perpendicular to the forward edge beam, the outer side frame member having a forward end;

a first cross beam substantially perpendicular to the side frame member and connected to the forward end of the side frame member at a location rearward of the forward edge beam; and

a second cross beam substantially parallel to the outer side frame member and connected to the first cross beam and the first end of the forward edge beam.

34. The chassis according to claim 33, wherein the outer side frame member, first cross beam, second cross beam and forward edge beam form an inwardly directed recess.

35. The chassis according to claim 34, wherein the inwardly directed recess is a right angle.

36. A travel trailer chassis comprising:

a forward edge beam having a first end;

an outer side frame member substantially perpendicular to the forward edge beam, the outer side frame member having a forward end; and

a brace connected to the front edge beam and the outer side frame member and forming an angle with the outer side frame member of greater than 90 degrees.

37. The chassis according to claim 36, wherein the brace forms an angle with the forward edge beam of greater than 90 degrees.

38. The chassis according to claim 36, wherein the brace is connected to the first end of the forward edge beam and forward end of the outer side frame member.

\* \* \* \* \*

**Gallagher, Gerard T.**

---

**From:** Scott Tuttle [scott@heartlandrvs.com]  
**Sent:** Monday, July 18, 2005 6:48 AM  
**To:** Gallagher, Gerard T.  
**Subject:** RE: Formal Drawings for Application

Regarding the drawings, the only thing that I noticed that needs to be changed is that Figure 15 shows the corner with the same configuration as that of Figure 11, not of Figure 14. Figures 12 and 13 show the 5th wheel with an "inverse" corner, while Figures 14 and 15 are supposed to show the corner with a "radius". Only 14 does, 15 shows it with the same inverse as angle as Figure 11.

Besides that, I think you're ready to go.

ST

-----Original Message-----

**From:** Gallagher, Gerard T. [mailto:Gerard.Gallagher@bakerd.com]  
**Sent:** Thursday, July 14, 2005 10:59 AM  
**To:** Scott Tuttle  
**Subject:** Formal Drawings for Application

Scott,

Attached are formal drawings that I had our draftsman prepare for the application. Please confirm that the drawings are accurate or call me so that we can discuss any changes that may be necessary. Thanks.

Jerry

Gerard T. Gallagher  
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574.239.1921 (Direct)  
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[Gerard.Gallagher@bakerd.com](mailto:Gerard.Gallagher@bakerd.com)  
[www.bakerdaniels.com](http://www.bakerdaniels.com)

**BAKER & DANIELS LLP**

Indiana | Washington, D.C. | China

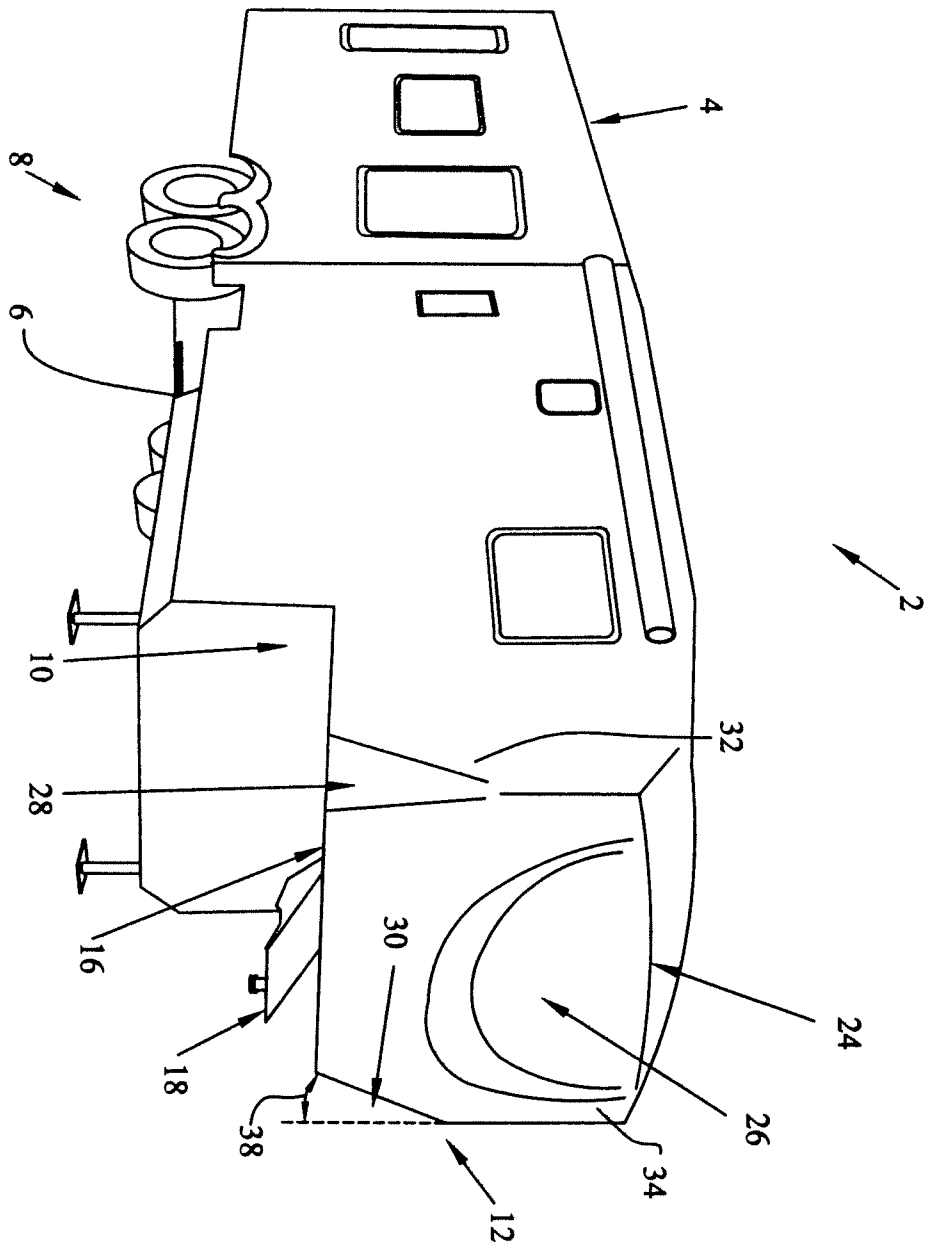
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If you received this message in error, please notify the sender by reply e-mail and delete the message immediately.



**FIG. 1**

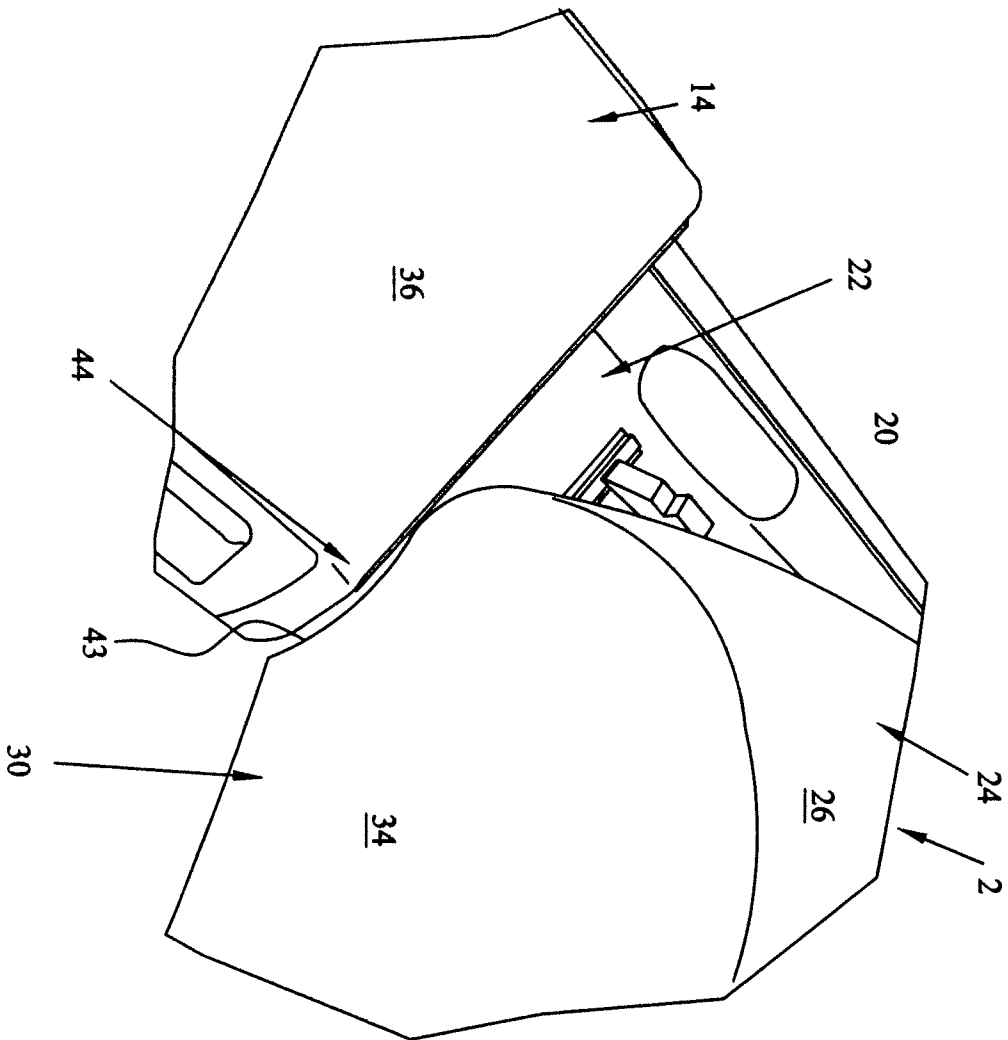
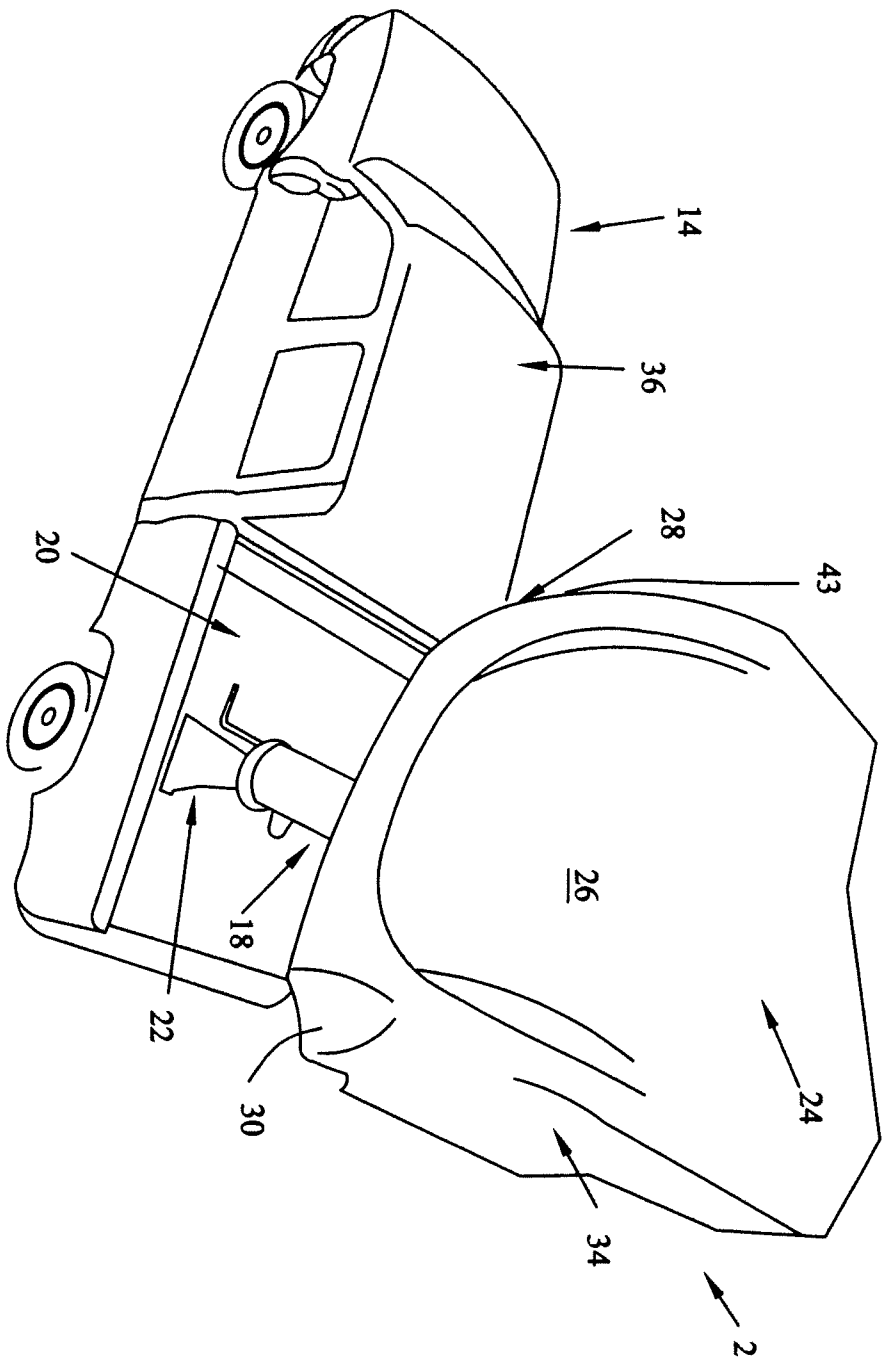
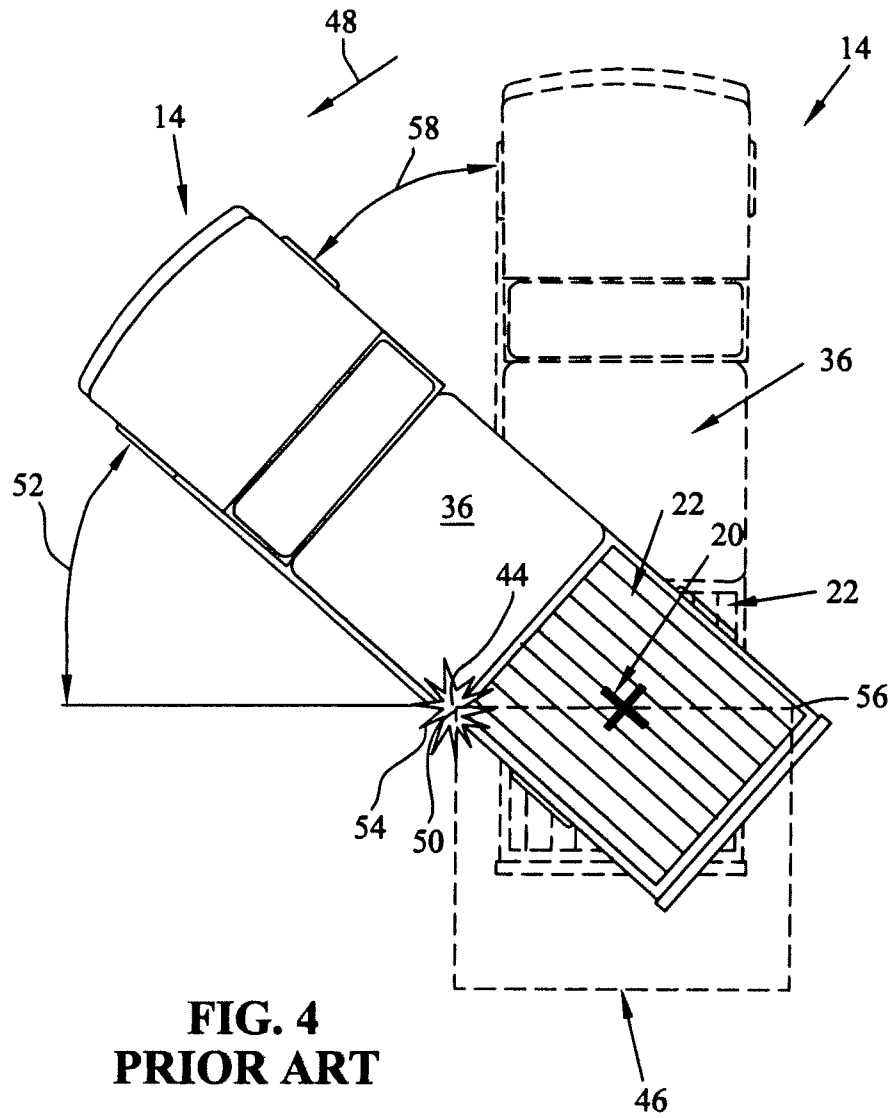


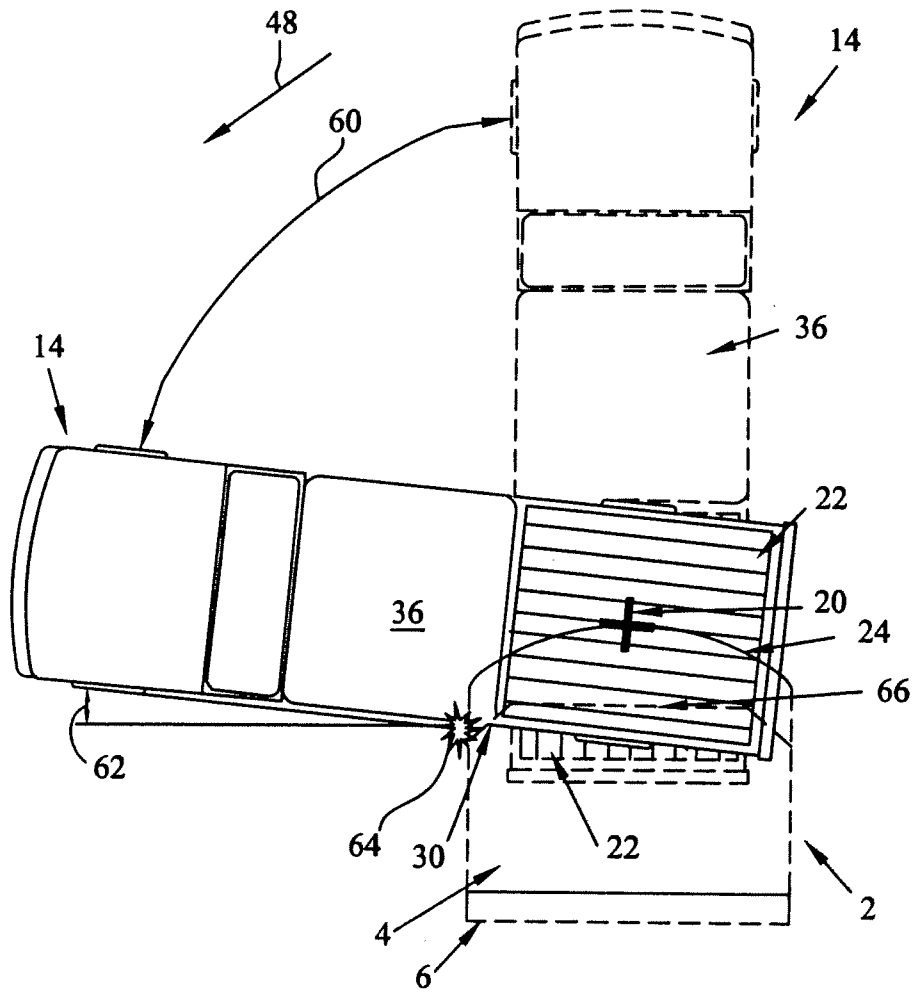
FIG. 2



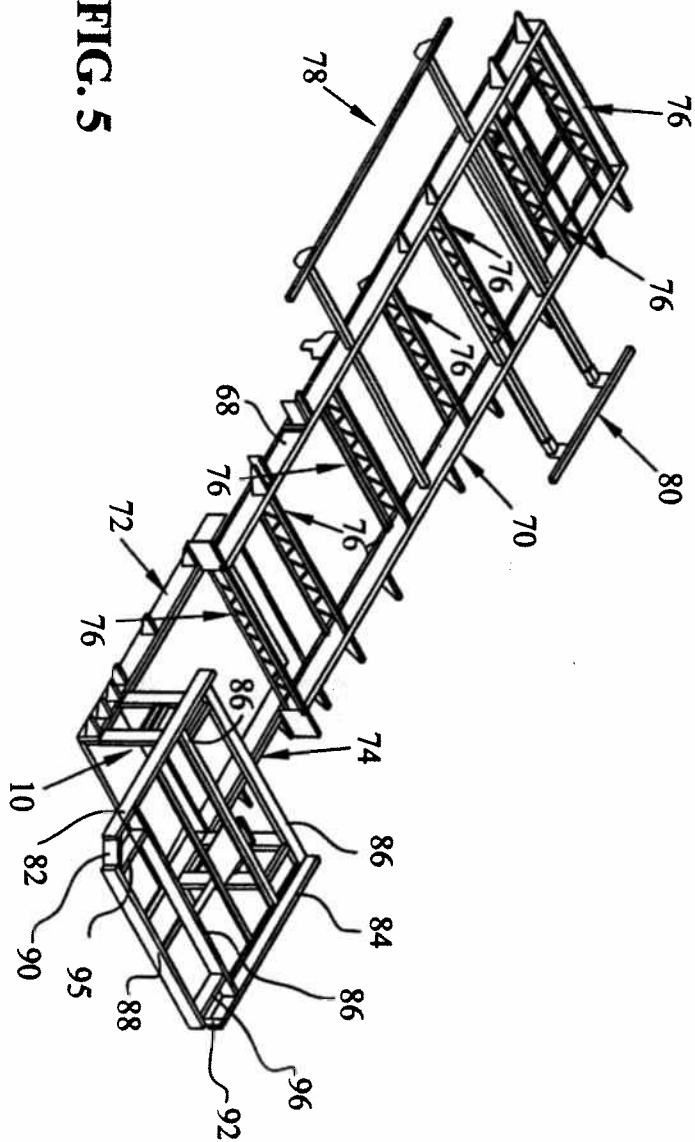
**FIG. 3**



**FIG. 4**  
**PRIOR ART**

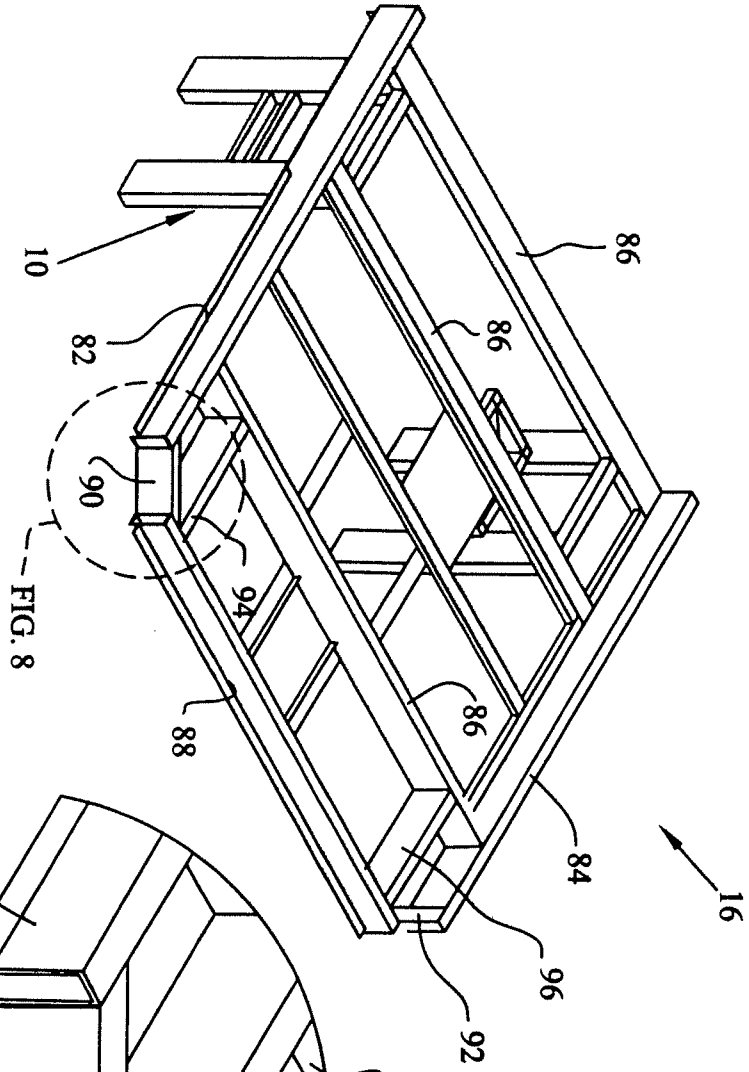


**FIG. 5**

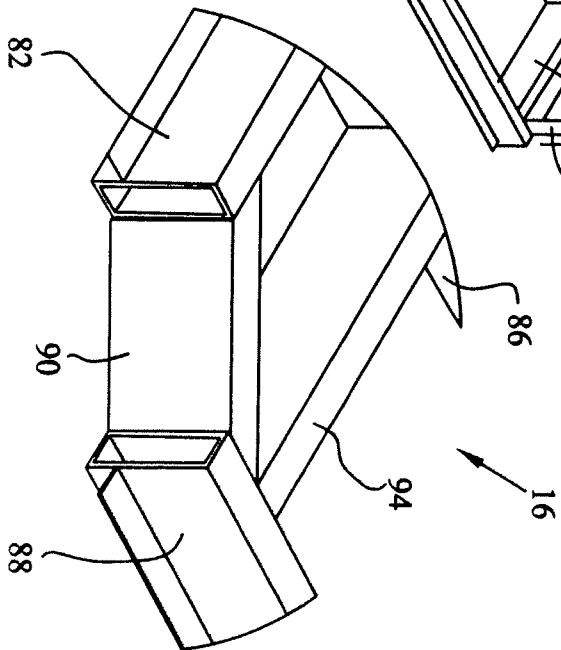


**FIG. 5**

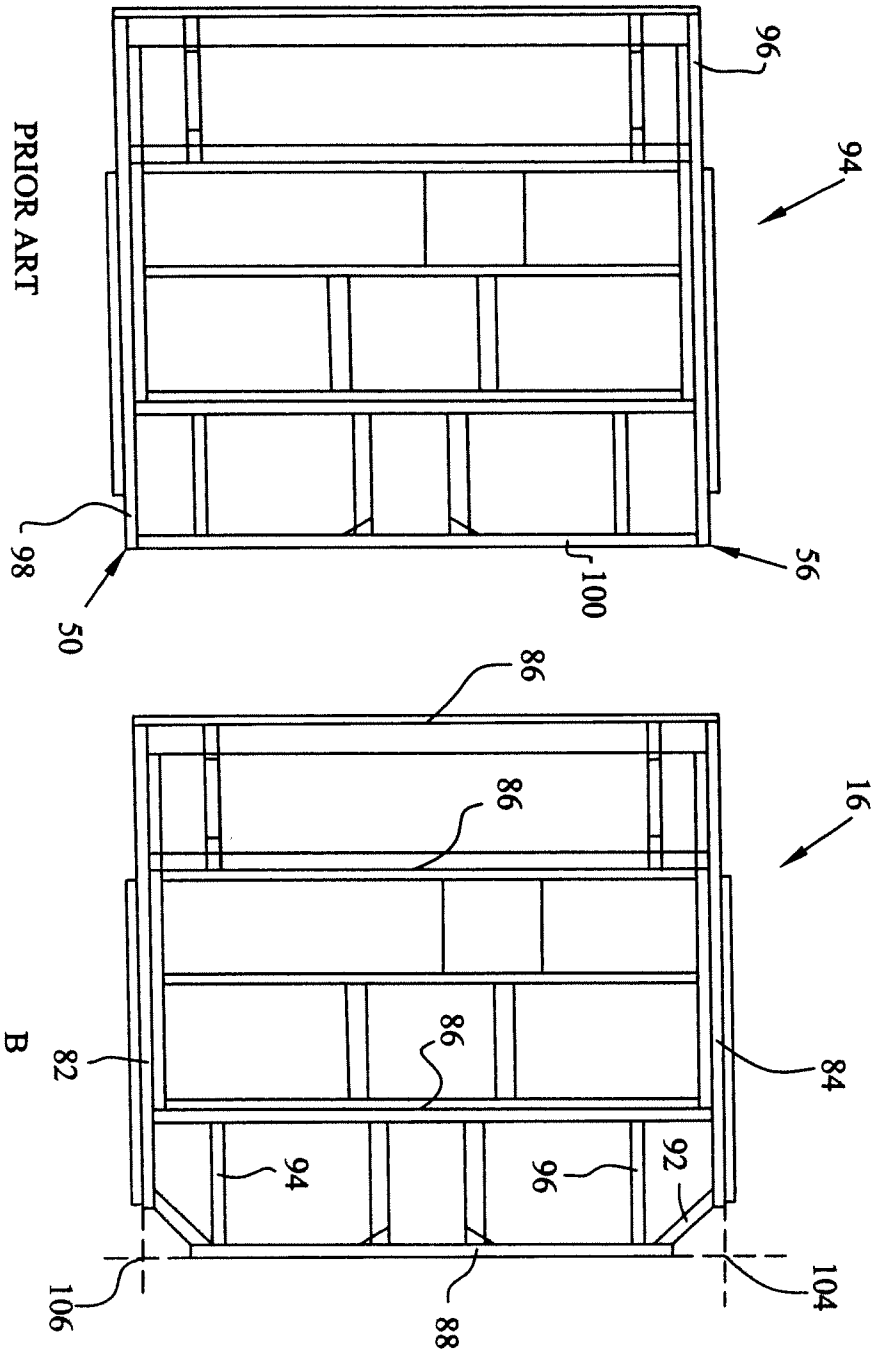
**FIG. 7**



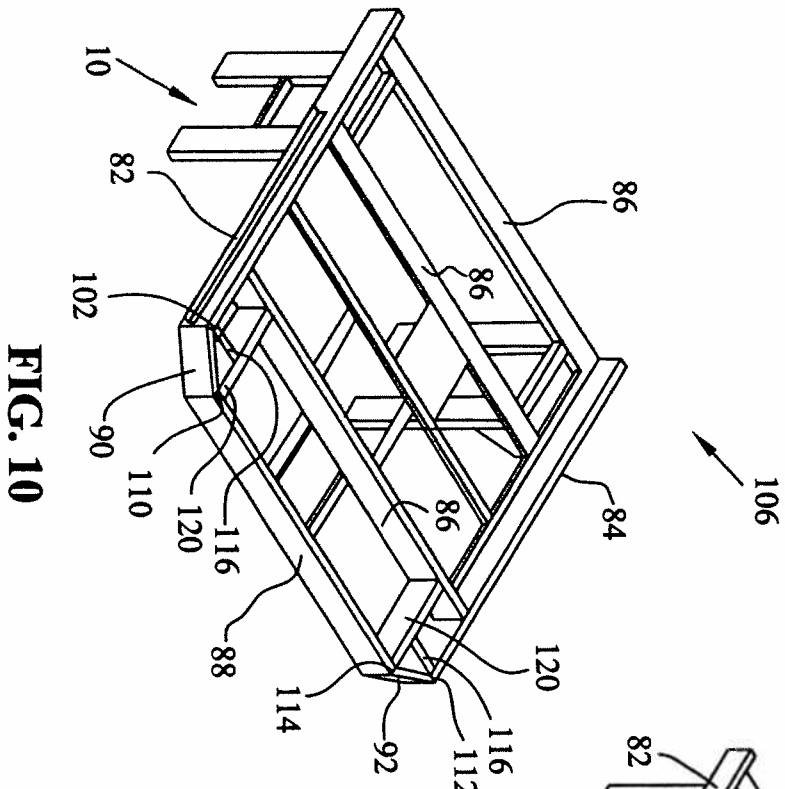
**FIG. 8**



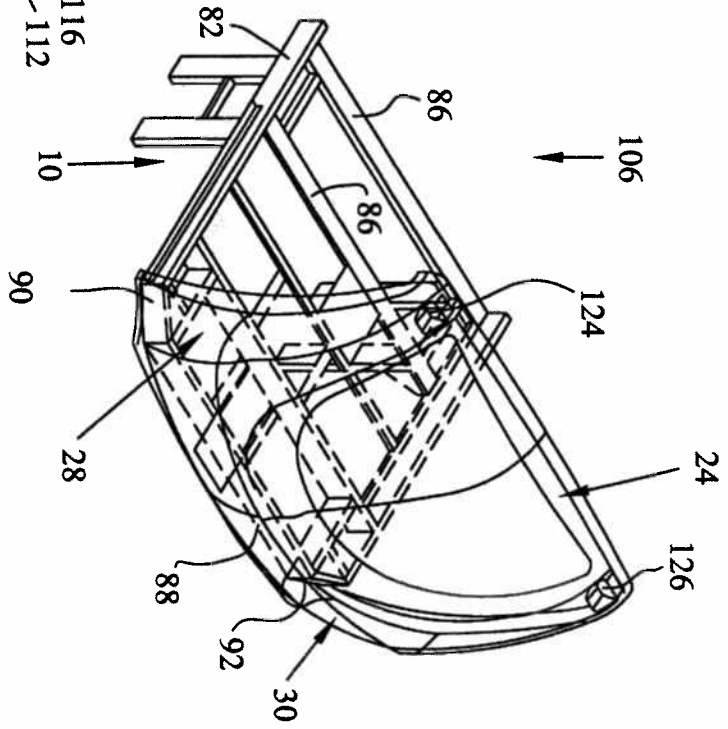




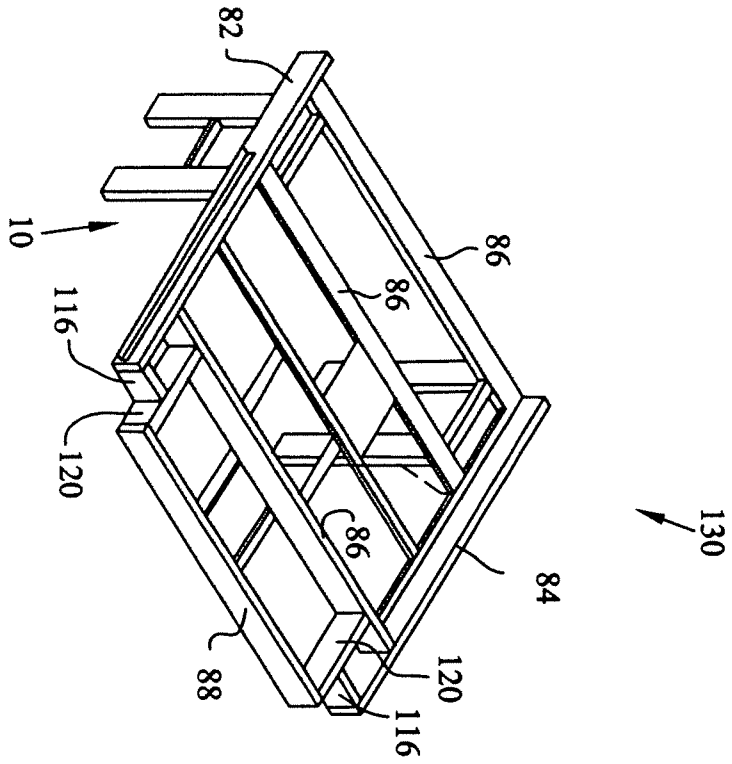
**FIG. 9**



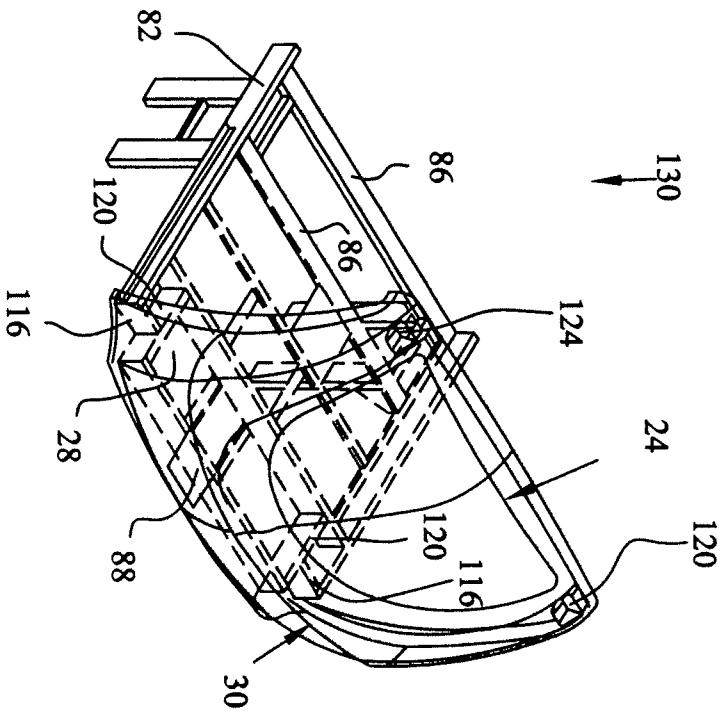
**FIG. 10**



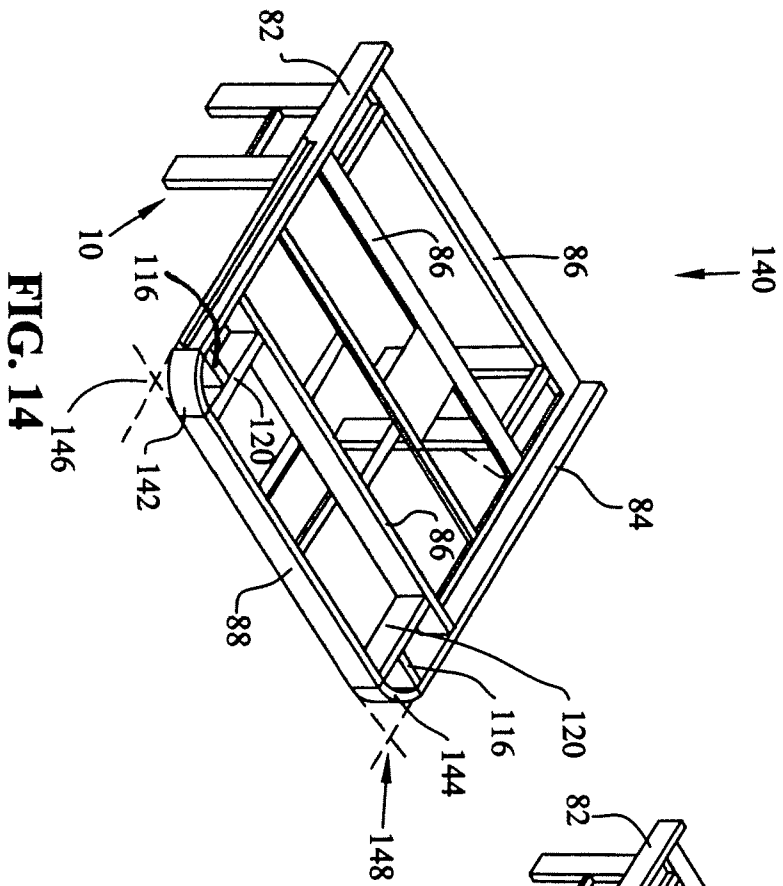
**FIG. 11**



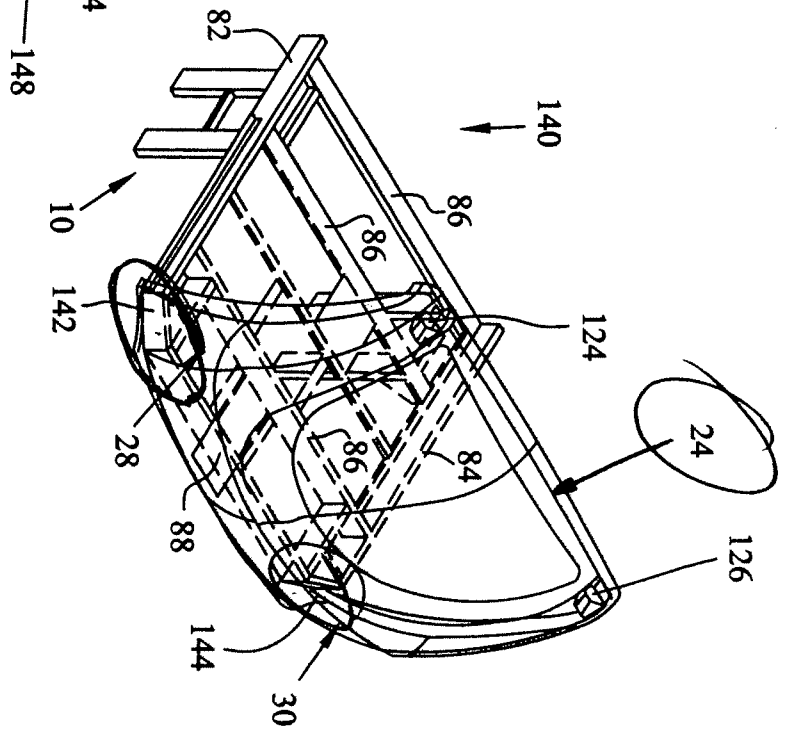
**FIG. 12**



**FIG. 13**



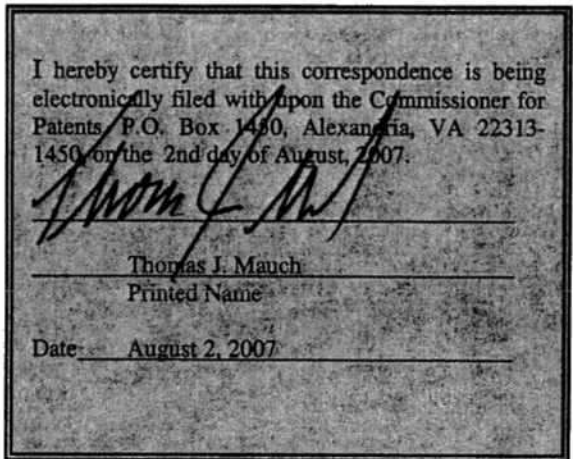
**FIG. 14**



**FIG. 15**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: )  
 )  
Brian R. Brady et al. )  
 )  
Serial No.: 11/091,070 )  
 )  
Filed: March 28, 2005 )  
 )  
For: TRAVEL TRAILER HAVING )  
IMPROVED TURNING RADIUS )  
 )  
Group Art Unit: 3609 )  
 )  
Examiner: Stabley, Michael R. )  
 )  
Attorney Docket No.: HRV0001.1 )



**RESPONSE TO OFFICE ACTION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action of **July 24, 2007**, Applicants submit this Response and Amendment and request that the Examiner please reconsider the above-identified application. With this response, Applicants provide **Amendments to the Specification** beginning on page 2, **Amendments to the Claims** beginning on page 3, the **Amendments to the Drawings** beginning on page 4 and **Remarks/Arguments** beginning on page 5.

Amendments to the Specification:

Please amend the specification as follows:

[Para 47] Top views of the upper deck of the travel trailer are shown in Figs. 9a and b. Specifically, Fig. 9a is a prior art version of such an upper deck, whereas Fig. 9b depicts upper deck 16 as discussed with respect to Figs. 6 through 8. Comparing the structure of 9a to the structure of 9b much is similar except for the forward corners and the forward edge beams. For example, the prior art upper deck 94 uses side frame members 96, 98 to attach to forward edge beam 100 to form corner right-angled edges 50, 56. (See, also, Fig. 4.) It is these corner edges that can limit the turning radius of vehicle 14 for the reasons previously discussed. By comparison, such corner edges have been removed from upper deck 16, as indicated by reference numerals ~~106~~ 106A, 104 in Fig. 9b.

Listing of Claims

Please cancel claims 1-32.

33. (Previously Presented) A travel trailer chassis comprising:  
a forward edge beam having a first end;  
an outer side frame member substantially perpendicular to the forward edge beam,  
the outer side frame member having a forward end;  
a first cross beam substantially perpendicular to the side frame member and  
connected to the forward end of the side frame member at a location rearward of the  
forward edge beam; and  
a second cross beam substantially parallel to the outer side frame member and  
connected to the first cross beam and the first end of the forward edge beam.

34. (Previously Presented) The chassis according to claim 33, wherein the outer  
side frame member, first cross beam, second cross beam and forward edge beam form an  
inwardly directed recess.

35. (Previously Presented) The chassis according to claim 34, wherein the inwardly  
directed recess is a right angle.

Please cancel claims 36-38.

Amendments to the Drawings

Please replace Figures 7 and 8 with the appropriate enclosed replacement sheet, in which reference numeral 94 has been changed to reference numeral 95, as indicated in red. This change ensures Figures 7 and 8 are consistent with Figure 6 and paragraph 45 of the specification.

In addition, please replace Figures 9A and 9B with the appropriate enclosed replacement sheet, in which reference numeral 106 has been changed to reference numeral 106A, as indicated in red. This drawing change ensures Figure 9B remains consistent with the change to the specification set forth above. Furthermore, in order to ensure Figure 9b is consistent with Figures 6 through 8 and paragraph 45 of the specification, please change reference numeral 94 to reference numeral 95, as indicated in red.



Remarks

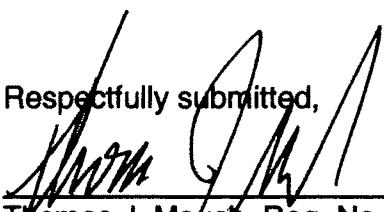
Applicant acknowledges the Office Action mailed on July 24, 2007. In the Office Action, the Examiner indicates that claims 33 through 35 are in condition for allowance. In order to passage quickly to issuance, Applicant has cancelled all rejected claims. Accordingly, only the allowed claims, claims 33 through 35, remain pending in the application.

In the Office Action, the Examiner rejects the drawings due to various informalities. Applicant submits that the changes described above and depicted on the attached drawing sheets correct the informalities with the drawings. Specifically, the changing of reference numeral 94 to reference numeral 95 in Figures 7, 8 and 9B, ensures that these figures are consistent with Figure 6 and the specification at paragraph 45. In addition, the change of reference numeral 106 to 106A in Figure 9B ensures that Figure 9B is consistent with Figures 10 and 11, both of which utilize numeral 106 to indicated the upper deck frame.

Furthermore, the above indicated change to the specification ensures that the specification is consistent with the drawing changes discussed above.

For the reasons set forth above in detail, the pending application is in condition for allowance. Accordingly, Applicant requests passage to issuance. If necessary to affect a timely response, please consider this paper a request for an extension of time, and charge any shortages in fees, or apply any overpayment credits, to Baker & Daniels' Deposit Account No. 02-0387 (973963.2). However, please do not include the payment of issue fees.

Respectfully submitted,



---

Thomas J. Mauch, Reg. No. 56,686  
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205 West Jefferson Boulevard, Suite 250  
South Bend, IN 46601  
Telephone: (574) 234-4149  
Fax: (574) 239-1900

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of: ) Before the Examiner  
)  
Brian R. Brady et al. )  
)  
Serial No: 11/091,070 ) Group Art Unit: 3611  
)  
Filed: 03/28/2005 )  
)  
TRAVEL TRAILER HAVING IMPROVED)  
TURNING RADIUS )

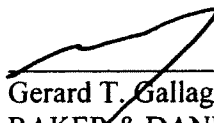
**INFORMATION DISCLOSURE STATEMENT**

Applicant wishes to bring to the attention of the Examiner the documents identified on the attached PTO Form PTO/SB/08A in accordance with 37 CFR §1.97(b)(3), as these documents are being identified before the first Office Action.

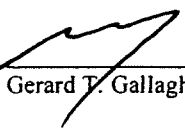
The filing of this Information Disclosure Statement shall not be construed as an admission that the information cited is, or is considered to be, material to patentability as defined in § 1.56(b), or that these documents are prior art.

It is believed that no fee is required for consideration of the submitted items. Should any fee be required, however, please charge such fee to Deposit Account No. 02-0387, but not to include any payment of issue fees.

Respectfully submitted,

  
Gerard T. Gallagher, Reg. No. 39,679  
BAKER & DANIELS LLP  
205 West Jefferson Blvd., Suite 250  
South Bend, IN 46601  
Telephone: (574) 234-4149

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on: June 23, 2005.

  
Gerard T. Gallagher

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 1

**Complete if Known**

Application Number	11/091,070
Filing Date	03/28/2005
First Named Inventor	Brian D. Brady
Art Unit	3611
Examiner Name	
Attorney Docket Number	HRV0001.01

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (# known)			
		US- 5746473	05-05-1998	Crean	
		US- 6170903 B1	01-09-2001	Crean	
		US- 6231115 B1	05-15-2001	Crean	
		US- 6343830 B1	02-05-2002	Ingram et al.	
		US- 6502894 B1	01-07-2003	Ingram et al.	
		US- 6792630 B1	09-21-2004	Palmatier et al.	
		US- 6802521 B1	10-12-2004	Boughton	
		US- 6807735 B2	10-26-2004	Crean	
		US- 6808195 B2	10-26-2004	Smith	
		US- 6832809 B2	12-21-2004	Wang et al.	
		US- 6846000 B2	01-25-2005	Grinde et al.	
		US- 6860545 B1	03-01-2005	Ingram et al.	
		US- 6866283 B2	03-15-2005	Alguera et al.	
		US- 6866330 B2	03-15-2005	Jones et al.	
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (# known)				

Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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