

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Philip Bryan Howes, et al.)
) Group Art Unit:
) 3611
Serial No.: 12/056,594)
) Examiner: Not Assigned
Filed: March 27, 2008)
) Confirmation No: 9840
For: VEHICLE AND CARGO TRANSPORT)
 RATCHETING TIE DOWN)
 APPARATUS AND SYSTEM)
)

Accelerated Examination Support Document

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

Dear Sir:

This accelerated examination support document is provided in support of the petition for accelerated examination filed herewith.

There are eight claims currently pending in the application. The claims read as follows:

1. A ratcheting tie down system for a vehicle transporter having one or more vehicle platforms, the system comprising:

(a) a ratchet assembly affixed to an end of a tie down shaft having a longitudinal axis, the tie down shaft being affixed to one of the one or more vehicle platforms;

(b) a pawl mechanism coupled to the ratchet assembly,

(c) wherein the ratchet assembly comprises:

(d) a ratchet gear;

(e) a ratchet head coupled to the ratchet gear,

(f) wherein an inner face of the ratchet gear is positioned in opposition to and in mechanical contact with an inner face of the ratchet head, and

(g) wherein the ratchet gear, the ratchet head and the shaft are configured to rotate as a single integral unit when rotated in a forward direction about the longitudinal axis, and the ratchet head is configured to rotate with respect to the ratchet gear and the shaft when the ratchet head is rotated in a reverse direction about the longitudinal axis, the ratchet gear and the ratchet head remaining in mechanical contact during both the forward direction and reverse direction.

2. The system as claimed in Claim 1 further comprising (h) drive bodies disposed in depressions positioned on the inner face of the ratchet head.

3. The system as claimed in Claim 2 further comprising (i) ramped pockets disposed on the inner face of the ratchet gear.

4. The system as claimed in Claim 3 (j) wherein the drive bodies are configured to compress into and expand out of the depressions positioned on the inner face of the ratchet head.

5. The system as claimed in Claim 3 wherein the ramped pockets each comprise:

(k) a ramp surface positioned between an upper-most portion of each ramped pocket, which is adjacent and co-planar with the inner face of the ratchet gear; and

(l) a lower-most portion positioned at a depth within the ratchet gear, thereby defining a wall within each of the ramped pockets.

6. The system as claimed in Claim 5 (m) wherein the drive bodies are configured to ride along the ramp surface and into an adjacent ramped pocket in response to the reverse motion of the ratchet head.

7. The system as claimed in Claim 5 (n) wherein the drive bodies are configured to position in the lower-most portion and be in mechanical contact with the wall in response to the forward motion of the ratchet head, the ratchet gear and the tie-down shaft.

8. The system as claimed in Claim 1 (o) wherein the shaft is configured to receive at least one of a chain and a strap.

9(A) References Deemed Most Closely Related:

An Information Disclosure Statement in compliance with 37 CFR 1.98 has been filed herewith citing each of the following references deemed most closely related to the subject matter of the claim.

Ruan	US 2006/0013667 A1
Cummings	US 5,101,537

9(B) Identification of Limitations Disclosed by References:

Ruan (US 2006/0013667 A1):

With regard to Claim 1, Ruan teaches “A ratcheting tie down system” (Abstract), however, Ruan does not specifically teach that the ratcheting tie down system is for a vehicle transporter having one or more platforms) for a vehicle transporter having one or more vehicle platforms, the system comprising:

(b) “a pawl mechanism” (claims 4 and 7-11),

(d) a ratchet gear (Claims 7, 8 9 11 and 12 teach a “ratchet wheel that is engaged with a pawl”);

(e) a ratchet head (Ruan teaches “a rotating body 2” that is attached to a fixed base 1. in paragraphs [0010]-[0012] and [0020]-[0022], and claims 2 and 3, for example). However, Ruan does not teach that the ratchet head is coupled to the ratchet gear.

With regard to Claim 2, Ruan further teaches (h) drive bodies disposed in depressions positioned on the inner face of the ratchet head. (Ruan teaches “pushing-pins” 8 that are in holes 6 on the fixed base 1 within spring holes 6. See for example, paragraphs [0010], [0023] and [0024].)

With regard to Claim 3, Ruan teaches (i) ramped pockets. (Ruan teaches a “slide groove 5” on the fixed body 1. See for example Claim 3 and paragraphs [0023] and [0024]). However, Ruan does not teach that the ramped pockets are disposed on the ratchet gear. Rather Ruan teaches that the slide groove is on the fixed base 1 (see Figure 1 for example.) **This distinguished feature is explained in the Detailed Explanation of Patentability.**

With regard to Claim 4, Ruan teaches (j) wherein the drive bodies are configured to compress into and expand out of the depressions positioned on the inner face of the ratchet head. (Ruan teaches that the pushing-pins 8 are engaged with springs 7. See for example paragraphs [0010], [0023] and [0024].)

With regard to Claim 5, Ruan teaches (k) a ramp surface (Ruan teaches an inclined side of a groove 51 in paragraph [0022] and Figure 2. However, Ruan does not teach that a ramp surface is positioned between an upper-most portion of each ramped pocket, which is adjacent and co-planar with the inner face of the ratchet gear. **This distinguished feature is explained in the Detailed Explanation of Patentability.** Furthermore, Ruan teaches (l)...a wall within each of the ramped pockets. (Ruan teaches a straight side 52 in paragraph [0022] and Figure 2.)

With regard to Claim 6, Ruan teaches (m) wherein the drive bodies are configured to ride along the ramp surface (Ruan teaches that the pushing pin 8 will be pushed up along the inclined face 51 of the slide groove (Paragraph [0024]. However, Ruan does not teach that the drive bodies ride into an adjacent ramped pocket in response to the

reverse motion of the ratchet head. **This distinguished feature is explained in the Detailed Explanation of Patentability.**

With regard to Claim 7, Ruan teaches (n) wherein the drive bodies are configured to position in the lower-most portion and be in mechanical contact with the wall. (Ruan teaches that if the rotating body is turned in the opposite direction, the pushing pin will be blocked by the straight face 52 of the slide groove 5 in paragraph [0024].) However, Ruan does teach that the drive bodies perform this movement in response to the forward motion of the ratchet head, the ratchet gear and the tie-down shaft. **This distinguished feature is explained in the Detailed Explanation of Patentability.**

With regard to Claim 8, Ruan teaches (o) wherein the shaft is configured to receive ... a strap. (See Abstract and paragraph [0004]. However, Ruan does not teach that the shaft is configured to receive a chain.

Cummings (US 5,101,537):

With regard to Claim 1, Cummings teaches A ratcheting tie down system for a vehicle transporter having one or more vehicle platforms, (See Abstract, for example). In addition, Cummings teaches (a) a ratchet assembly affixed to an end of a tie down shaft having a longitudinal axis, the tie down shaft being affixed to one of the one or more vehicle platforms,(c) wherein the ratchet assembly comprises: (d) a ratchet gear; (e) a ratchet head coupled to the ratchet gear, (f) wherein an inner face of the ratchet gear is positioned in opposition to and in mechanical contact with an inner face of the ratchet head, and (g) wherein the ratchet gear, the ratchet head and the shaft are configured to rotate as a single integral unit when rotated in a forward direction about the longitudinal axis, and the ratchet head is configured to rotate with respect to the ratchet gear and the shaft when the ratchet head is rotated in a reverse direction about the longitudinal axis (See Fig. 1 and Fig. 7, where Cummings shows an input and output element 11, 15 affixed to a flatbed of a transport.)

Cummings does not teach any of the recitations of Claims 2-7.

With regard to Claim 8, Cummings teaches (o) wherein the shaft is configured to receive at least one of a chain and a strap. (In Claim 1, Cummings recites “a flexible holdings means such as a chain or a strap.”)

9(C) Detailed Explanation of Patentability:

It is respectfully noted that any inconsistencies have been resolved in this renewed Support Document. Furthermore, all Claims 1-8 have been explained. Claims 1-8 have been bolded to emphasize the explanation.

As discussed above, with regard to **Claim 1**, Ruan teaches “A ratcheting tie down system” (Abstract), however, Ruan does not specifically teach that the ratcheting tie down system is for a vehicle transporter having one or more platforms) for a vehicle transporter having one or more vehicle platforms.

Ruan does not teach (a) a ratchet assembly affixed to an end of a tie down shaft having a longitudinal axis, the tie down shaft being affixed to one of the one or more vehicle platforms, does not teach (f) wherein an inner face of the ratchet gear is positioned in opposition to and in mechanical contact with an inner face of the ratchet head, and further does not teach (g) wherein the ratchet gear, the ratchet head and the shaft are configured to rotate as a single integral unit when rotated in a forward direction about the longitudinal axis, and the ratchet head is configured to rotate with respect to the ratchet gear and the shaft when the ratchet head is rotated in a reverse direction about the longitudinal axis, the ratchet gear and the ratchet head remaining in mechanical contact during both the forward direction and reverse direction. In applicants claimed invention, the ratchet gear and ratchet head are in mechanical contact through both the forward and reverse directions. In Ruan, reference is made to a first ratchet wheel and a second ratchet wheel as well as a rotating body, which appears to be one of the first and second ratchet wheels. However, the drawings, description and claims do not teach that any of the ratchet wheels and rotating body are in mechanical contact as an assembly as in Applicants' claimed invention. Ruan only shows the rotating body 2 in mechanical contact with the fixed base 1.

In addition, while Ruan does teach (b) "a pawl mechanism" (claims 4 and 7-11), Ruan does not teach that the pawl mechanism is coupled to a ratchet assembly. Instead, Ruan discloses that a first pawl is adapted to engage a first ratchet wheel and that a plurality of second pawls are adapted to engage a second ratchet wheel (See for example Ruan Claim 7). Furthermore, while Ruan does teach ratchet wheels, Ruan does not teach that the ratchet head is coupled to the ratchet gear.

The features of **Claim 2** are taught by Ruan.

While Ruan teaches (i) ramped pockets, Ruan does not teach that the ramped pockets are disposed on the ratchet head. Rather Ruan teaches that the slide groove is on the fixed base 1. Applicant does not see this feature as an obvious variation and this deficiency is not cured by Cummings. As such, dependent **Claim 3** is seen as patentably distinct over Ruan and has patentable features in addition to **Claim 1**.

The features of **Claim 4** are taught by Ruan.

While Ruan teaches (k) a ramp surface, Ruan does not teach that a ramp surface is positioned between an upper-most portion of each ramped pocket, which is adjacent and co-planar with the inner face of the ratchet gear. Applicant does not see this feature as an obvious variation and this deficiency is not cured by Cummings. As such, dependent **Claim 5** is seen as patentably distinct over Ruan and has patentable features in addition to **Claim 1**.

While Ruan teaches (m) wherein the drive bodies are configured to ride along the ramp surface, Ruan does not teach that the drive bodies ride into an adjacent ramped pocket in response to the reverse motion of the ratchet head. Instead, Ruan specifically states that the pushing pin 8 will be pushed up along the inclined face 51 of the slide groove 5 until the pushing pin 8 *is pressed against the side surface of the fixed base 1*. In

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