Filed on behalf of: Boydstun Equipment Manufacturing, LLC

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> > UNITED STATES PATENT AND TRADEMARK OFFICE
> >
> > BEFORE THE PATENT TRIAL AND APPEAL BOARD
> >
> > BOYDSTUN EQUIPMENT MANUFACTURING, LLC
> >
> > Petitioner
> >
> > v.
> >
> > COTTRELL, INC.
> >
> > Patent Owner

IPR2017-00962 Patent No. 7,585,140

DECLARATION OF GEORGE CLARK
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 7,585,140



I. **QUALIFICATIONS**

- 1. My academic background includes a bachelor and master's degree in Mechanical Engineering.
- 2. I have over 36 years of practical engineering experience in a variety of industries including heavy equipment, automotive, aerospace, consumer product, medical instrument and several others. My professional background includes new product concept ideation, mechanical and mechanism design, and structural analysis.
- 3. I am listed as an inventor on over 30 United States patents and several European patents.

II. <u>COMPENSATION</u>

4. I am being compensated by Boydstun Equipment Manufacturing, LLC at my compensation rate of \$185/hour for consulting and for testimony in deposition or trial, plus reimbursement for reasonably incurred expenses. I have no personal or financial interest in the outcome of the related litigation or this proceeding.

III. SUMMARY OF MY STUDY AND CONCLUSIONS

5. I have read U.S. Patent 7,585,140 ("the '140 patent") which indicates that the application for the patent was filed on March 27, 2008. The application for the '140 patent concerns technology within my areas of expertise. I have considered



the patent's disclosures from the perspective of a person of ordinary skill in the art in 2007 - 2008.

- 6. I have studied the following references and considered them from the perspective of the person of ordinary skill in the art in 2007 2008.
- 7. Ruan (Ex. 1003): U.S. Patent Publication No. US 2006/0013667, "Rapid Roatating [sic] Device for Ratchet Belt Shaft," published January 19, 2006 on an application filed July 14, 2005. ("Ruan")
- 8. <u>Cottrell (Ex. 1004)</u>: D. Michael Cottrell and Don J. Cottrell, U.S. Patent No. 5,314,275, "Safety Tie-Down Roller," issued May 24, 1994 on an application filed April 27, 1992. ("*Cottrell*")
- 9. **Boice (Ex. 1005)**: Arthur D. Boice, U.S. Patent No. 6,824,121, "Wheel Securing Device," issued November 30, 2004 on an application filed January 25, 2003 ("*Boice*").
- 10. I have compared these references to claims 1 8 of the '140 patent. I have considered the perspective of the person of ordinary skill in the art in 2007 2008 who was designing a ratcheting tie-down for securing vehicles to an automobile transporter.
- 11. The claims of the '140 patent recite nothing innovative compared to these references. More specifically, *Cottrell* describes a mechanism of the same functionality as Claim 1 of the '140 patent and explicitly suggests the usefulness of a



second ratchet. This is also true of *Boice* which describes a mechanism of the same functionality as Claim 1 of the '140 patent while teaching the usefulness of a second ratchet. Both *Cottrell* and *Boice* show the advantage of having the primary and secondary ratchets on the same end of the shaft.

12. Ruan describes several specific methods of combining two ratcheting systems to more rapidly and safely secure goods. Ruan specifically shows the mechanism described in claims 2 through 7 of the '140 patent.

IV. LEVEL OF SKILL IN THE ART IN 2007 - 2008

- 13. My expectations of those with ordinary skill in this art are based on my experiences of the past 36 years working with and leading engineers and other technically focused individuals on mechanism development projects. I am familiar with the skill possessed by a person with ordinary skill in the art by working with and managing engineers with such skills.
- 14. In my opinion, a person of ordinary skill in this art in 2007 2008 would hold a bachelor of science degree in Mechanical Engineering.
- 15. Alternatively, a person of ordinary skill in the art would have developed skill in mechanical devices through a number of years of experience working on the design and construction of mechanical devices.



16. A person of ordinary skill in this art in 2007 – 2008 would be familiar with ratcheting mechanisms (as used with tie-down straps) and familiar with standard ratchet wrenches available at any tool supply outlet.

V. FIELD OF THE '140 PATENT

- 17. The '140 patent states that the "present invention relates generally to automobile and cargo transport, and more particularly, to a ratcheting tie down apparatus and system." 1
- 18. A person of ordinary skill in the art would recognize that prior art references *Boice*, *Ruan*, and *Cottrell* are all in the same field of endeavor as the '140 patent. Both *Boice* and *Cottrell* disclose ratcheting systems for tying down automobiles to a cargo transport vehicle. *Ruan* discloses a ratcheting system for tying down general cargo to a cargo transport vehicle.

VI. THE ELEMENTS OF CLAIM 1 OF THE '140 PATENT

- 19. Claim 1 of the '140 patent states:
- 1. A ratcheting tie down system for a vehicle transporter having one or more vehicle platforms, the system comprising:

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:

a pawl mechanism coupled to the ratchet assembly, wherein the ratchet assembly comprises:



¹ Ex. 1001 ('140 patent) at 1:7-9.

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