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PATENT

Docket No.: 065922-004530US-1010443

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Ronald GUNTERT JR. et al.

Application No.: 15/148,811

Filed: May 06, 2016

For: ADJUSTABLE BOLSTER SWING  
LEGS FOR REORIENTING  
CRAWLERS FOR SLIPFORM  
PAVING MACHINES  
(Amended)

Customer No.: 20350

Confirmation No.: 7902

Examiner: Gary S. HARTMANN

Technology Center/Art Unit: 3671

**AMENDMENT & RESPONSE TO NON-  
FINAL OFFICE ACTION UNDER 37  
C.F.R. §1.111**

Mail Stop: **Amendment**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Commissioner:

In response to the Non-Final Office Action issued October 17, 2016, please enter the following amendments and remarks. Applicants submit that this paper is timely filed on or before January 17, 2017.

**Amendments to the Claims** begin in the listing of claims provided on page **2** of this paper.

**Amendment to the Title** is on page **5** of this paper.

**Remarks/Arguments** begin on page **6** of this paper.

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A paving machine configured to move in a paving direction for spreading, leveling and finishing concrete into a form having a generally upwardly exposed, finished concrete surface and terminating in lateral concrete sides, the paving machine comprising:
  - a center module having a forward end, an aft end, and lateral sides;
  - at least two forward bolsters laterally and movably connected to respective lateral sides of the center module;
  - at least two aft bolsters laterally and movably connected to respective lateral sides of the center module;
  - a crawler track mechanically coupled to each forward bolster and each aft bolster;
  - a swing leg for each bolster;
  - an upright jacking column secured to ~~the~~ each swing leg, having a rotary connection between the jacking column and the crawler track permitting relative rotational movements of the crawler track ~~and~~ with regard to the jacking column about an upright axis; and
  - a power drive unit between associated jacking columns and crawler tracks configured for translating relative rotational movements between the associated jacking columns and the crawler tracks.
2. (Original) A paving machine according to claim 1 further comprising:
  - a first angular position transducer between associated jacking columns and crawler tracks emitting a first position signal which is indicative of the angular orientation of the crawler track relative to the associated jacking column;
  - a second angular position transducer between the associated swing legs and hinge brackets emitting a second signal which is indicative of the angular orientation of the swing leg relative to the associated hinge bracket; and

a processor receiving the first and second signals and emitting a control signal for activating the power drive and thereby rotationally moving the crawler tracks relative to the associated jacking columns for keeping the crawler tracks oriented in the paving direction in response to changes of the first signal caused by pivotal motions of the swing leg about the pivot shaft.

3. (Original) A paving machine according to claim 1 further comprising a hinge bracket interposed between each swing leg and an associated surface of the bolsters and including an upright pivot shaft that engages the swing leg that permits pivotal movements of the swing leg relative to the hinge bracket about an upright axis in a substantially horizontal plane, the hinge bracket including a pivot connection point that is laterally spaced from and fixed in relation to the pivot shaft.

4. (Original) A paving machine according to claim 1 wherein the power drive is a helical worm gear drive comprising first and second, diametrically opposed, helical worm drives engaging and driving a ring gear disposed between them.

5. (Original) A paving machine according to claim 2 including a feedback for maintaining an orientation of the crawlers parallel to each other independently of angular inclinations of the crawlers relative to bolsters.

6-8. (Cancelled)

9. (Original) A paving machine according to claim 5 including a feedback loop operatively coupled to the bolster swing legs and the crawler tracks for angularly repositioning the crawler tracks relative to the respective swing legs in response to angular motions of the bolster swing leg about the pivot connection for keeping the crawler tracks oriented in the travel direction.

10. (Currently Amended) A paving machine according to claim 1, further comprising a holder capable of being held at a fixed length, having a first end pivotally engaging [[the]] a pivot connection point and a second end pivotally engaging the swing leg, the holder permitting

pivotal motions of the swing leg about a hinge pin and preventing substantially any motion of the swing leg when the holder is in its fixed-length configuration.

11. (Original) A paving machine according to claim 1, further comprising at least one short bolster extension configured to couple with a trailing module, having a built-in mount connecting and securing to at least one rearwardly facing surface of the center module.

12. (Original) A paving machine according to claim 11, wherein the at least one aft crawler track and swing leg are configured to freely connect and disconnect to a side surface of an aft bolster to allow a rear surface of the aft bolster to freely connect and disconnect to the trailing module.

13. (Currently Amended) A paving machine ~~kit~~ according to claim 12, wherein the at least one aft crawler track and swing leg are configured to disconnect from the side surface of the aft bolster of the paver tractor frame and further configured to connect to a an aft end of a reward extending bolster extension of the trailing module.

14. (Currently Amended) A paving machine ~~kit~~ according to claim 1, wherein the at least one aft crawler and swing leg are configured to, in combination, disconnect from a transport orientation side of the paver tractor frame and further configured to connect to a paving orientation side of the trailing module.

15-18. (Cancelled)

19. (New) A paving machine according to claim 3, further comprising a hydraulic actuator mounted on the hinge bracket, permitting the swing leg to pivot relative to the center module.

20. (New) A paving machine according to claim 2, further comprising a slew gear drive disposed between the crawler track and the jacking column, configured to receive the control signal and maintain the crawler tracks in a straight-ahead position.

**AMENDMENTS TO THE TITLE**

Please amend the Title of this application as follows:

ADJUSTABLE BOLSTER SWING LEGS FOR ~~MOUNTING AND ALIGNING AND~~  
REORIENTING CRAWLERS FOR SLIPFORM PAVING MACHINES

### **REMARKS/ARGUMENTS**

The Non-Final Office Action of October 17, 2016 has been carefully considered and reviewed. The above amendments and following remarks are presented as a full and complete response to the Office Action. By this Amendment: claims 1, 10, 13, and 14, and the Title are amended; claims 19 and 20 are added; and claims 6-8 and 15-18 are cancelled. Claims 1, 10, 13, and 14 are amended simply for clarity and to better present the claims for examination. Upon entry of this Amendment, claims 1-5, 9-14, and 19-20 are pending for examination. Support for these amendments can be found throughout the application as-filed, and in further detail as set forth below. No new matter has been added.

The amendments herein do not necessarily concede the correctness of the pending rejections, but are rather presented to expedite prosecution. Based on the above amendments and following remarks, Applicants respectfully request reconsideration and allowance of the pending claims.

#### **Response to Objections to Drawings & Title**

The Drawings stand as objected to under 37 C.F.R. §1.83 for allegedly not showing certain features recited as elements of dependent claims 6-8. By this paper, claims 6-8 are cancelled, and thus Applicant submits that the objection to the Drawings is moot.

The Title stands as objected to for being too long. The Title is currently amended to more precisely and concisely describe the invention of the present application. If the Examiner considers the amended Title to still be objectionable, Applicant's Representative is happy to discuss an acceptable formulation for the Title reflective of the claimed invention.

In view of the above, Applicants respectfully request withdrawal of the Objections to the Drawings and the Title.

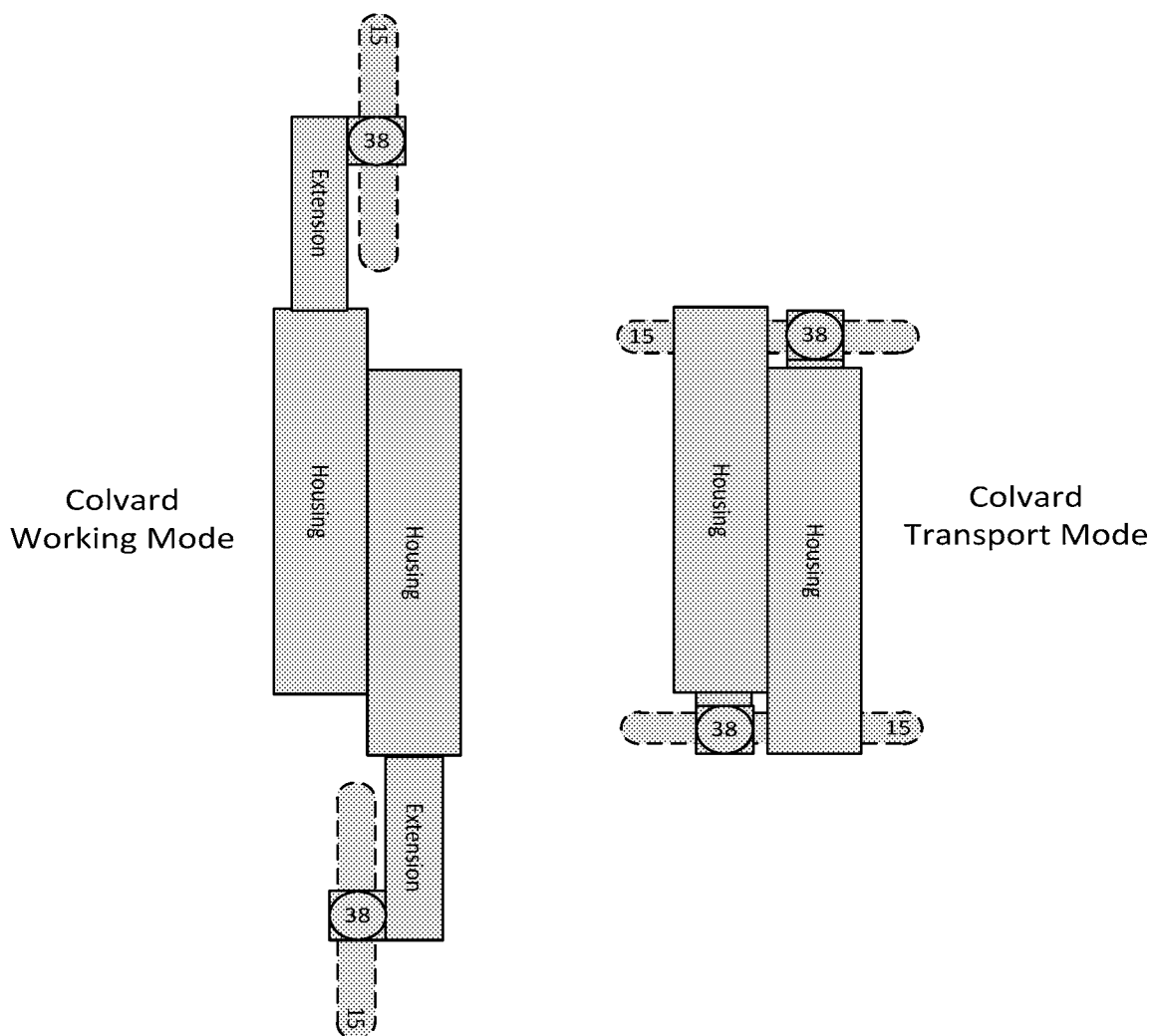
#### **Response to Rejections Under 35 U.S.C. §112**

Claims 6-8 stand rejected under 35 U.S.C. §112(a) as allegedly failing the written description requirement. For the sake of efficiency in prosecution, claims 6-8 have been cancelled, and Applicants submit that the rejection under 35 U.S.C. §112(a) be withdrawn as moot.

**Response to Rejections Under 35 U.S.C. §102**

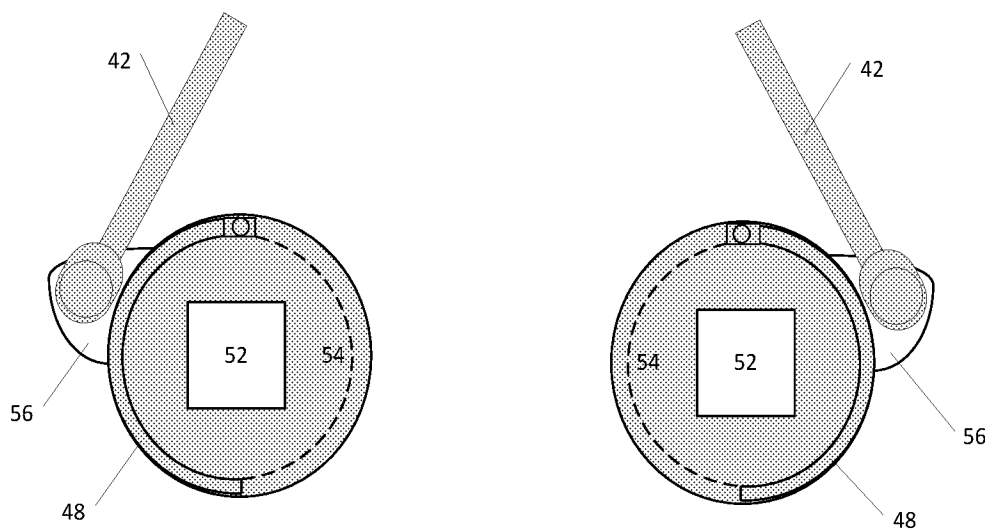
Claims 1, 3, and 10 stand rejected under pre-AIA 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. 6,692,185 to Colvard. The Office Action contends that Colvard discloses a paving machine with forward and aft bolsters, each bolster having a crawler track, swing leg, jacking column, and power drive unit. Applicants respectfully traverse this rejection and submit that Colvard does not disclose, teach, or suggest each and every element of independent claim 1, or the claims that depend therefrom.

To better describe the distinguishing aspects of the presently-claimed invention, portions of Colvard and their functionality are schematically illustrated below. Initially, the paired crawler tracks from either lateral side of Colvard FIG. 1 are more clearly shown below schematically in both of its functional modes:



Independent claim 1 recites, in relevant part, a swing leg for each bolster. Quite simply, Colvard does not disclose, teach, or suggest, a swing leg as properly understood from the specification of the presently-claimed invention. Rather, the crawler tracks of Colvard have a working mode paving orientation at their first home position and a transport mode orientation at their second home position. *See e.g., Colvard at cols. 5-6.* In Colvard, the (unlabeled) extension structures connecting the to the vertical sleeve assemblies 38 and the crawler assemblies 15 extend and retract within paired housings, where the extension structures and housings are only oriented parallel to the paving direction of the Colvard apparatus, the extension structures of Colvard only move along one axis, the axis defined by the paired housings. There is no aspect of Colvard that can be read as a “swing leg” which is pivotable in relation to a tractor frame, as in the presently-claimed inventions. *See e.g., Spec. at paras. [0038]-[0040] & [0043].* Thus, Applicants submit that Colvard does not disclose at least the claimed element of a swing leg, and thus does not anticipate independent claim 1.

Secondly, independently and alternatively, Applicants submit that Colvard requires a steering cylinder/collar for its apparatus to function, which is contrary to the purpose and operation of the presently-claimed invention. Specifically, in order for the apparatus of Colvard to change the orientation and angle of its jacking column by 90 degrees, between its transport and working modes, Colvard requires use of a steering collar as described by Colvard FIG. 4. A top plan view of the Colvard steering cylinder, assembled and in two orientations, is shown schematically below for clarity.



The steering collar of Colvard has a set of plates (e.g. upper annular plate 54) each having a square opening 52, where collar elements (e.g. collar element 48) is rotated from one side of the plates to another, with piston-and-cylinder element 42 actuated respectively to the orientation of the collar elements. To hold the steering collar in place, it is required that the steering collar be bolted at the mounting lobe, and each change of orientation of each steering collar requires the unbolting and re-bolting of the steering collars. *See e.g., Colvard at col. 6., ln 40 – col. 7, ln. 24.* Such immovable-during use bolted/pinned structures and the time-consuming efforts required to reposition jacking columns of such a paving machine is in part what the presently-claimed invention specifically overcomes. *See e.g., Spec. at paras. [0007]-[0011].*

In contrast, the presently-claimed invention recites a rotary connection permitting relative rotational movements of the crawler track and the jacking column. Where Colvard is in effect a circular clamp that does not allow for rotation due to the bolting of the collar into any of its operational modes, the presently-claimed invention bypasses any need for such a clamp through application of the rotary connection, and by extension, the power drive unit and angular position transducers recited in other claim elements. Thus, Applicants submit that Colvard does not disclose at least the claimed element of a rotary connection, and thus does not anticipate independent claim 1.

Independently and alternatively, with regard to dependent claim 3, Applicants submit that Colvard does not disclose, teach, or suggest the structure of a hinge bracket interposed between the swing leg and an associated bolster. Moreover, Colvard does not disclose a hydraulic actuator mounted on the hinge bracket, configured to move a swing leg relative to the center module. Applicants note that in the claimed invention, while the hydraulic actuator allows for a pivoting motion of the swing leg, the rotary connection remains the element that allows for relative adjustment of the crawler tracks. In contrast, as noted above, Colvard uses its piston-and-cylinder assembly 42 to effect rotational motion of its two relatively rotatable collar elements 46, & 48. Thus, in the context of the presently-claimed invention, the piston-and-cylinder assembly 42 of Colvard is not analogous to the hydraulic actuator mounted on the hinge bracket.

Accordingly, for at least the reasons set forth above, Applicants submit that Colvard does not disclose each and every element of currently amended independent claim 1, dependent claim

3, or of any of the claims that depend therefrom. Therefore, Applicants respectfully requests the withdrawal of the rejection of claims 1, 3, and 10 under 35 U.S.C. §102(b).

**Response to Rejections Under 35 U.S.C. §103**

Claims 2, 4, 5, 9, and 11-14 stand rejected under pre-AIA 35 U.S.C. §103(a) as allegedly obvious over Colvard considered alone. Applicants acknowledge that the Examiner has taken Official Notice that the elements of claims 2, 4, 5, and 9 are generally known in the field of the invention. Applicants respectfully traverse this rejection and submit that at least because Colvard does not disclose, teach, or suggest each and every element of amended independent claim 1, these claims 2, 4, 5, 9, and 11-14 that depend therefrom are allowable for at least the same reason, as well as on their own merits. Applicants therefore respectfully request the withdrawal of the rejection of claims 2, 4, 5, 9, and 11-14 under 35 U.S.C. §103.

**New Claims 19 & 20**

In order to further define and provide additional protection for aspects of the presently-claimed invention, claims 19 and 20 have been added. No new matter has been added.

New claim 19 further recites that on the hinge bracket interposed between each swing leg and its associated bolster surface, that each hinge bracket has hydraulic actuator mounted thereon, which permits the swing leg to pivot relative to the center module. Support for this added claim can be found throughout the application, particularly at paragraphs [0037]-[0044], FIG. 2, and original claim 3 of the application publication.

New claim 20 further recites that a slew gear drive is disposed between the crawler track and the jacking column, and that the slew gear drive can receive the control signal from the processor (which is in turn based on the first and second signals from the first and second angular transducers, respectively) and thereby maintain the crawler tracks in a straight-ahead position while the paving machine is in operation. Support for this added claim can be found throughout the application, particularly at paragraphs [0019] and [0043]-[0045] of the application publication.

As new claims 19 and 20 ultimately depend on independent claim 1, Applicants maintain that such claims are allowable over the cited references for at least the same reasons as claim 1

(and claim 3 and claim 2, respectively) discussed above, as well as on their own merits.

Applicants respectfully request entry and consideration of new claims 19 and 20.

### **CONCLUSION**

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

Except for the issue fees payable under 37 C.F.R. §1.18, the Director is authorized to charge any additional fees during pendency of this application, including any required extension of time fees, or credit any overpayment to Deposit Account Number 20-1430. This paragraph is intended to be a constructive petition for extension of time in accordance with 37 C.F.R. §1.136(a)(3), if needed.

If the Examiner believes a telephone conference would expedite prosecution of this application, please contact the undersigned at 415-576-0200 or [jchang@kilpatricktownsend.com](mailto:jchang@kilpatricktownsend.com).

Respectfully submitted,

/ James K. Chang /

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| Electronic Acknowledgement Receipt   |                                                                                                               |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------|
| EFS ID:                              | 28086182                                                                                                      |
| Application Number:                  | 15148811                                                                                                      |
| International Application Number:    |                                                                                                               |
| Confirmation Number:                 | 7902                                                                                                          |
| Title of Invention:                  | ADJUSTABLE BOLSTER SWING LEGS FOR MOUNTING AND ALIGNING AND REORIENTING CRAWLERS FOR SLIPFORM PAVING MACHINES |
| First Named Inventor/Applicant Name: | Ronald Guntert                                                                                                |
| Customer Number:                     | 20350                                                                                                         |
| Filer:                               | James Krikor Chang/La Renda Meyer                                                                             |
| Filer Authorized By:                 | James Krikor Chang                                                                                            |
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| Application Type:                    | Utility under 35 USC 111(a)                                                                                   |

**Payment information:**

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**File Listing:**

| Document Number | Document Description | File Name                                 | File Size(Bytes)/ Message Digest         | Multi Part /.zip | Pages (if appl.) |
|-----------------|----------------------|-------------------------------------------|------------------------------------------|------------------|------------------|
| 1               |                      | Response_NFOA_065922-004530US-1010443.pdf | 139767                                   | yes              | 11               |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Claims                                                | 2      | 10  |
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| Warnings:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                       |        |     |
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| <p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                                                       |        |     |