



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	05/22/2018	9975750	31681-41	8886

76656 7590 05/02/2018
Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MO 63105

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Brad Thomas, Pleasant Hill, IA;
Vermeer Manufacturing Company, Pella, IA;
Louis Hartke, Pella, IA;
Greg Langenfeld, Bettendorf, IA;
Matt Hutchinson, Pella, IA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.



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P.O. Box 1450
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	03/07/2016	Brad Thomas	31681-41	8886
76656	7590	04/23/2018	EXAMINER	
Patent Docket Department			KRAMER, DEAN J	
Armstrong Teasdale LLP			ART UNIT	
7700 Forsyth Boulevard			PAPER NUMBER	
Suite 1800			3652	
St. Louis, MISSOURI 63105			NOTIFICATION DATE	
UNITED STATES OF AMERICA			DELIVERY MODE	
			04/23/2018	
			ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

Corrected Notice of Allowability	Application No. 15/062,801	Applicant(s) Thomas et al.	
	Examiner DEAN J KRAMER	Art Unit 3652	AIA Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the IDS submitted 3/19/18.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are See Continuation Sheet. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov**.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file areply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____	6. ☐ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material ____	7. ☐ Other ____
4. ☒ Interview Summary (PTO-413), Paper No./Mail Date ____	

/DEAN J KRAMER/ Primary Examiner, Art Unit 3652	
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Continuation of 3. The allowed claim(s) is/are: 21-27,29,31,34-35,37,39-41,45-49 and 56-69

<i>Examiner-Initiated Interview Summary</i>	Application No. 15/062,801	Applicant(s) Thomas et al.	
	Examiner DEAN J KRAMER	Art Unit 3652	AIA Status Yes

All participants (applicant, applicant's representative, PTO personnel):

(1) DEAN J. KRAMER. (3) ____.

(2) Michael J. Vander Molen. (4) ____.

Date of Interview: 18 April 2018.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: ____.

Issues Discussed ☐ 101 ☐ 112 ☒ 102 ☒ 103 ☐ Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: all pending claims.

Identification of prior art discussed: the references listed on the IDS submitted 3/19/18.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Discussed the references listed on the IDS of 3/19/18. It was agreed that the pending claims define over these references whether taken individually or in combination with the teachings of the other prior art of record..

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/DEAN J KRAMER/ Primary Examiner, Art Unit 3652	
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Brad Thomas Art Unit: 3652
Serial No.: 15/062,801
Filed On: March 7, 2016
Confirmation No.: 8886
For: LOW PROFILE COMPACT TOOL CARRIERS
Examiner: Dean J. Kramer

April 18, 2018

THIRD NOTICE OF CONCURRENT PROCEEDINGS

A third party Request for Ex Parte Reexamination of the patent granted from the parent application, U.S. Patent No. 9,321,386, has been assigned the following serial number:

- Serial No. 90/014,124 (filed April 13, 2018).

Respectfully submitted,

/Michael J. Vander Molen/

Michael J. Vander Molen
Reg. No. 57,274
ARMSTRONG TEASDALE LLP
7700 Forsyth Blvd., Suite 1800
St. Louis, Missouri 63105
(314) 621-5070

Document code: WFEE

United States Patent and Trademark Office
Sales Receipt for Accounting Date: 04/18/2018

EDANTZLE	SALE	#00000002	Mailroom Dt:	03/19/2018	012384	15062801
		01	FC : 1806	240.00	DA	

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL (Submitted Only via EFS-Web)

Application Number	15062801	Filing Date	2016-03-07	Docket Number (if applicable)	31681-41	Art Unit	3652
First Named Inventor	Brad Thomas			Examiner Name	Dean J. Kramer		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☐ Amendment/Reply

☒ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to
Deposit Account No 012384

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature
Applicant Signature

Signature of Registered U.S. Patent Practitioner			
Signature	Michael J. Vander Molen/	Date (YYYY-MM-DD)	2018-03-19
Name	Michael J. Vander Molen	Registration Number	57274

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Brad Thomas Art Unit: 3652
Serial No.: 15/062,801
Filed On: March 7, 2016
Confirmation No.: 8886
For: LOW PROFILE COMPACT TOOL CARRIERS
Examiner: Dean J. Kramer

March 19, 2018

SECOND NOTICE OF CONCURRENT PROCEEDINGS

A third party Request for Ex Parte Reexamination of the patent granted from the parent application, U.S. Patent No. 9,321,386, has been assigned the following serial number:

- Serial No. 90/014,109 (filed March 12, 2018).

Respectfully submitted,

/Michael J. Vander Molen/

Michael J. Vander Molen
Reg. No. 57,274
ARMSTRONG TEASDALE LLP
7700 Forsyth Blvd., Suite 1800
St. Louis, Missouri 63105
(314) 621-5070

Doc Code: PET.AUTO Document Description: Petition automatically granted by EFS-Web		PTO/SB/140 U.S. Patent and Trademark Office Department of Commerce
Electronic Petition Request	PETITION TO WITHDRAW AN APPLICATION FROM ISSUE AFTER PAYMENT OF THE ISSUE FEE UNDER 37 CFR 1.313(c)	
Application Number	15062801	
Filing Date	07-Mar-2016	
First Named Inventor	Brad Thomas	
Art Unit	3652	
Examiner Name	DEAN KRAMER	
Attorney Docket Number	31681-41	
Title	LOW PROFILE COMPACT TOOL CARRIERS	
An application may be withdrawn from issue for further action upon petition by the applicant. To request that the Office withdraw an application from issue, applicant must file a petition under this section including the fee set forth in § 1.17(h) and a showing of good and sufficient reasons why withdrawal of the application from issue is necessary. APPLICANT HEREBY PETITIONS TO WITHDRAW THIS APPLICATION FROM ISSUE UNDER 37 CFR 1.313(c). A grantable petition requires the following items: (1) Petition fee; and (2) One of the following reasons: (a) Unpatentability of one or more claims, which must be accompanied by an unequivocal statement that one or more claims are unpatentable, an amendment to such claim or claims, and an explanation as to how the amendment causes such claim or claims to be patentable; (b) Consideration of a request for continued examination in compliance with § 1.114 (for a utility or plant application only); or (c) Express abandonment of the application. Such express abandonment may be in favor of a continuing application, but not a CPA under 37 CFR 1.53(d).		
Petition Fee		
☐ Small Entity		
☐ Micro Entity		
☒ Regular Undiscounted		
Reason for withdrawal from issue		

- ☐ One or more claims are unpatentable
- ☒ Consideration of a request for continued examination (RCE) (List of Required Documents and Fees)
- ☐ Applicant hereby expressly abandons the instant application (any attorney/agent signing for this reason must have power of attorney pursuant to 37 CFR 1.32(b)).

RCE request, submission, and fee.

- ☐ I certify, in accordance with 37 CFR 1.4(d)(4) that :
- ☐ The RCE request ,submission, and fee have already been filed in the above-identified application on
- ☒ Are attached.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

- ☒ An attorney or agent registered to practice before the Patent and Trademark Office who has been given power of attorney in this application.
- ☐ An attorney or agent registered to practice before the Patent and Trademark Office, acting in a representative capacity.
- ☐ A sole inventor
- ☐ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application
- ☐ A joint inventor; all of whom are signing this e-petition

Signature	/Michael J. Vander Molen/
Name	Michael J. Vander Molen
Registration Number	57274



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Decision Date : March 19, 2018

In re Application of :

Brad Thomas

DECISION ON PETITION

UNDER CFR 1.313(c)(2)

Application No : 15062801

Filed : 07-Mar-2016

Attorney Docket No : 31681-41

This is an electronic decision on the petition under 37 CFR 1.313(c)(2), filed March 19, 2018 , to withdraw the above-identified application from issue after payment of the issue fee.

The petition is **GRANTED**.

The above-identified application is withdrawn from issue for consideration of a submission under 37 CFR 1.114 (request for continued examination). See 37 CFR 1.313(c)(2).

Petitioner is advised that the issue fee paid in this application cannot be refunded. If, however, this application is again allowed, petitioner may request that it be applied towards the issue fee required by the new Notice of Allowance.

Telephone inquiries concerning this decision should be directed to the Patent Electronic Business Center (EBC) at 866-217-9197.

This application file is being referred to Technology Center AU 3652 for processing of the request for continuing examination under 37 CFR 1.114 .

Office of Petitions



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

76656 7590 03/02/2018
Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MISSOURI 63105

EXAMINER	
KRAMER, DEAN J	
ART UNIT	PAPER NUMBER

3652

DATE MAILED: 03/02/2018

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	03/07/2016	Brad Thomas	31681-41	8886

TITLE OF INVENTION: LOW PROFILE COMPACT TOOL CARRIERS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
REGULAR	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	06/04/2018

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

76656 7590 03/02/2018
Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MISSOURI 63105

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	03/07/2016	Brad Thomas	31681-41	8886

TITLE OF INVENTION: LOW PROFILE COMPACT TOOL CARRIERS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
REGULAR	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	06/04/2018

EXAMINER	ART UNIT	CLASS-SUBCLASS
KRAMER, DEAN J	3652	414-722000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	03/07/2016	Brad Thomas	31681-41	8886

76656 7590 03/02/2018

Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MISSOURI 63105

EXAMINER

KRAMER, DEAN J

ART UNIT	PAPER NUMBER
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3652

DATE MAILED: 03/02/2018

Notice of Allowability	Application No. 15/062,801	Applicant(s) Thomas et al.	
	Examiner DEAN J KRAMER	Art Unit 3652	AIA Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 12/12/17 .
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____ .

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are See Continuation Sheet . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov**.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file areply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____	6. ☐ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____	7. ☐ Other _____ .
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____	

/DEAN J KRAMER/ Primary Examiner, Art Unit 3652	
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Continuation of 3. The allowed claim(s) is/are: 21-27,29,31,34-35,37,39-41,45-49 and 56-69

Bibliographic Data

Application No: 15062801

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No ☐ Met After Allowance

Verified and Acknowledged: /DEAN J KRAMER/

Examiner's Signature

Initials

Title: LOW PROFILE COMPACT TOOL CARRIERS

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
03/07/2016	414	3652	31681-41
RULE			

APPLICANTS

Vermeer Manufacturing Company, Pella, IA, UNITED STATES

INVENTORS

Brad Thomas, Pleasant Hill, IA, UNITED STATES

Louis Hartke, Pella, IA, UNITED STATES

Greg Langenfeld, Bettendorf, IA, UNITED STATES

Matt Hutchinson, Pella, IA, UNITED STATES

CONTINUING DATA

This application is a CON of 14691649 04/21/2015 PAT 9321386

14691649 has PRO of 62118860 02/20/2015

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

03/21/2016

STATE OR COUNTRY

UNITED STATES

ADDRESS

Patent Docket Department

Armstrong Teasdale LLP

7700 Forsyth Boulevard

Suite 1800

St. Louis, MO 63105

UNITED STATES

FILING FEE RECEIVED

\$1,600

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or **Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

76656 7590 03/02/2018
Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MISSOURI 63105

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	03/07/2016	Brad Thomas	31681-41	8886

TITLE OF INVENTION: LOW PROFILE COMPACT TOOL CARRIERS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
REGULAR	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	06/04/2018

EXAMINER	ART UNIT	CLASS-SUBCLASS
KRAMER, DEAN J	3652	414-722000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. Armstrong Teasdale LLP

2. _____

3. _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Vermeer Manufacturing Company

Pella, Iowa

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

☒ Issue Fee

☐ A check is enclosed.

☐ Publication Fee (No small entity discount permitted)

☐ Payment by credit card. Form PTO-2038 is attached.

☐ Advance Order - # of Copies _____

☒ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 012384 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Michael J. Vander Molen/

Date 03/02/2018

Typed or printed name Michael J. Vander Molen

Registration No. 57274

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Brad Thomas et al.

Art Unit: 3652

Serial No.: 15/062,801

Filed On: March 7, 2016

Confirmation No.: 8886

For: LOW PROFILE COMPACT TOOL CARRIERS

Examiner: Dean J. Kramer

December 12, 2017

AMENDMENT E

TO THE COMMISSIONER FOR PATENTS,

SIR:

Please enter the following amendments and consider the following remarks:

Amendments to the Claims are reflected in the Listing of Claims which begins on page 2; and

Remarks begin on page 9.

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1-20. (Cancelled)

21. (Previously presented) A compact tool carrier configured for standing operator control and having a longitudinal axis and a mass of less than about 1500 kg, the compact tool carrier comprising:

a loader having an arm, the loader being adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a first linkage pivotally attached to the first side of the mainframe at a first pivot point and pivotally attached to the loader arm at a second pivot point;

a second linkage pivotally attached to the first side of the mainframe at a third pivot point and pivotally attached to the loader arm at a fourth pivot point;

an actuator directly pivotally attached to the first side of the mainframe at a fifth pivot point and directly pivotally attached to the loader arm at a sixth pivot point, the fifth pivot point being distinct from the first pivot point and the third pivot point;

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward of the operator platform relative to the longitudinal axis.

22. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the mainframe incorporates a single weldment.

23. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the loader arm is a first loader arm the loader comprising a second loader arm and the compact tool carrier comprising a third linkage pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

24. (Previously presented) The compact tool carrier as set forth in claim 23 wherein the actuator is a first actuator, the compact tool carrier comprising a second actuator, the second actuator being pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

25. (Previously presented) The compact tool carrier as set forth in claim 21 comprising a drive mechanism comprising tracks or wheels, the drive mechanism being attached to the mainframe.

26. (Previously presented) The compact tool carrier as set forth in claim 21 comprising a drive mechanism propelled by the engine.

27. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the first, second, third, fourth, fifth and sixth pivot points are (1) disposed between the operator controls and a bottom of the mainframe or (2) disposed forward of the control station as the loader moves from a down position to a vertically raised position.

28. (Cancelled)

29. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the loader arm incorporates a single weldment.

30. (Cancelled)

31. (Previously presented) The compact tool carrier as set forth in claim 21 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

32-33. (Cancelled)

34. (Previously presented) A method for operating the compact tool carrier as set forth in claim 21, the method comprising standing on the operator platform and operating the control station to propel the compact tool carrier forward and/or raise or lower the loader.

35. (Previously presented) A compact tool carrier having a longitudinal axis and comprising:

a loader adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a first linkage pivotally attached to the first side of the mainframe at a first pivot point and pivotally attached to the loader at a second pivot point;

a second linkage pivotally attached to the first side of the mainframe at a third pivot point and pivotally attached to the loader at a fourth pivot point;

an actuator pivotally attached to the first side of the mainframe at a fifth pivot point and directly pivotally attached to the loader at a sixth pivot point;

a drive mechanism for propelling the compact tool carrier over a supporting surface, the drive mechanism having a drive sprocket defining a rotational axis R, the compact tool carrier having a bottom at which the drive mechanism contacts the supporting surface, the rotational axis R and the bottom of the compact tool carrier being separated by a vertical distance D1, the rotational axis R and a bottom of the first side of the mainframe being separated by a vertical distance D5, the rotational axis R and each of the first, third, and fifth pivot points being separated by a vertical distance, the vertical distance between the rotational axis R and the first pivot point being less than 1.5 times D1, the vertical distance between the rotational axis R and the third pivot point also being less than 1.5 times D1, the vertical distance between the rotational axis R and the fifth pivot point also being less than 1.5 times D1, the first side of the mainframe comprising a forward-most pivot point, the first

pivot point, the third pivot point, or the fifth pivot point being the forward-most pivot point, the vertical distance between the rotational axis R and the forward-most pivot point being less than twice D5;

a control station having operator controls for propelling the compact tool carrier forward and for raising and/or lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward of the operator platform relative to the longitudinal axis.

36. (Cancelled)

37. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the second side of the mainframe comprises at least two pivot points, each vertical distance between the rotational axis R and the respective pivot point being less than 1.5 times D1.

38. (Cancelled)

39. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the first side of the mainframe comprises a top-most pivot point, the first pivot point, the third pivot point, or the fifth pivot point being the top-most pivot point, the top most pivot point and a top of the first side of the mainframe being separated by a vertical distance D6, D6 being less than about 1.5 times D5.

40. (Previously presented) The compact tool carrier as set forth in claim 35 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

41. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the mainframe incorporates a single weldment.

42-44. (Cancelled)

45. (Currently amended) The compact tool carrier as set forth in claim 21 wherein ~~the loader is supported by~~ no more than three linkages and actuators are attached to the first side of the mainframe.

46. (Previously presented) The compact tool carrier as set forth in claim 21 wherein a single actuator is attached to the first side of the mainframe.

47. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the loader is moveable between a down position and a vertically raised position, the operator platform having a rear and a front relative to the longitudinal axis, the second pivot point, fourth pivot point, and sixth pivot point being disposed forward of the rear and front of the operator platform when the loader travels from the down position to the vertically raised position.

48. (Currently amended) The compact tool carrier as set forth in claim 35 wherein ~~the loader is supported by~~ no more than three linkages and actuators are attached to the first side of the mainframe.

49. (Previously presented) The compact tool carrier as set forth in claim 35 wherein a single actuator is attached to the first side of the mainframe.

50-55. (Cancelled)

56. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the loader is moveable between a down position and a vertically raised position, the arm of the loader being a first arm and the loader comprising a second arm and at least one cross-member that extends from the first loader arm to the second loader arm, wherein each cross-member is disposed forward of the operator platform relative to the longitudinal axis in the vertically raised position of the loader.

57. (Previously presented) The compact tool carrier as set forth in claim 56 further comprising an attachment plate for removably attaching a tool to the compact tool carrier, the cross-member being spaced from the attachment plate.

58. (Previously presented) The compact tool carrier as set forth in claim 56 further comprising a drive mechanism for propelling the compact tool carrier over a supporting surface, the drive mechanism having a drive sprocket, the cross-member being disposed forward of the drive sprocket in the vertically raised position and the down position of the loader.

59. (Previously presented) The compact tool carrier as set forth in claim 56 wherein the compact tool carrier comprises a single cross-member.

60. (Previously presented) The compact tool carrier as set forth in claim 56 wherein each cross-member is disposed forward of the second pivot point and the fourth pivot point.

61. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the vertical distance between the rotational axis R and the forward-most pivot point is less than 1.75 D5.

62. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the vertical distance between the rotational axis R and the forward-most pivot point is less than 1.5 D5.

63. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the vertical distance between the rotational axis R and the forward-most pivot point is less than D1.

64. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the vertical distance between the rotational axis R and the forward-most pivot point is less than 0.75 D1.

65. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the loader is moveable between a down position and a vertically raised position, the loader comprising:

a first arm;

a second arm; and

at least one cross-member that extends from the first loader arm to the second loader arm, wherein each cross-member is disposed forward of the operator platform relative to the longitudinal axis in the vertically raised position of the loader.

66. (Previously presented) The compact tool carrier as set forth in claim 65 further comprising an attachment plate for removably attaching a tool to the compact tool carrier, the cross-member being spaced from the attachment plate.

67. (Previously presented) The compact tool carrier as set forth in claim 65 wherein the cross-member is disposed forward of the drive sprocket in the vertically raised position and the down position of the loader.

68. (Previously presented) The compact tool carrier as set forth in claim 65 wherein the compact tool carrier comprises a single cross-member.

69. (Previously presented) The compact tool carrier as set forth in claim 65 wherein each cross-member is disposed forward of the second pivot point and the fourth pivot point.

REMARKS

The Office action of December 8, 2017 has been carefully reviewed and the following remarks are made in response.

Status of Claims

Applicant has amended claims 45 and 48 for clarity. Claims 42-44 and 50-55 are cancelled. Claims 21-27, 29, 31, 34-35, 37, 39-41, 45-49 and 56-69 are pending.

Allowable Subject Matter

The Office indicates on pages 1 and 3 of the Office action that claims 21-27, 29, 31, 34-35, 37, 39-41, 45-49 and 56-69 are allowed. Because only claims 21-27, 29, 31, 34-35, 37, 39-41, 45-49 and 56-69 are pending in the application, the application is in a condition for allowance.

Applicant has not traversed the rejection of claims 42-44 and 52-55 under 35 U.S.C. §103 because the claims have been cancelled from the application. Applicant does not concede the propriety of the rejection.

Conclusion

Applicant believes the application is now in form for allowance. The undersigned requests a telephone call from the Examiner if a call might expedite allowance.

Applicant authorizes the Commissioner to charge any fees which may be due in connection with this Amendment E to Deposit Account No. 012384 in the name of Armstrong Teasdale LLP.

Respectfully submitted,

/Michael J. Vander Molen/

Michael J. Vander Molen
Reg. No. 57,274
Armstrong Teasdale LLP
7700 Forsyth Blvd., Suite 1800
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(314) 621-5070

MJV/asb



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	03/07/2016	Brad Thomas	31681-41	8886

76656 7590 12/08/2017

Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MO 63105

EXAMINER

KRAMER, DEAN J

ART UNIT	PAPER NUMBER
----------	--------------

3652

NOTIFICATION DATE	DELIVERY MODE
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12/08/2017

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

Office Action Summary**Application No.**

15/062,801

Applicant(s)

Thomas et al.

Examiner

DEAN J KRAMER

Art Unit

3652

AIA Status

Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2017.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 21-27,29,31,34-35,37 and 39-69 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 21-27,29,31,34-35,37,39-41,45-49 and 56-69 is/are allowed.
- 7) ☒ Claim(s) 42-44 and 52-55 is/are rejected.
- 8) ☒ Claim(s) 50-51 is/are objected to.
- 9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 10 November 2017 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some** c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____.
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 4) ☐ Other: _____.

DETAILED CORRESPONDENCE

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/10/17 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 42-44 and 52-55 is/are rejected under 35 U.S.C. 103 as being unpatentable over Ulinski (3,074,572) in view of Bares et al. (6,695,568).

Ulinski shows a compact tool carrier comprising a loader assembly made up of opposing arm assemblies (17,19,24) one on each side of the carrier, a first linkage (32) pivoted at a first linkage point (35) on one side of the loader, an opposing second linkage (32) pivoted at a second linkage point (35) on the other side of the loader (see Fig. 2), an actuator (36) pivotally attached to a portion (24) of the

loader, and an operator control station with platform (54). Ulinski fails to show “tracks” as part of its drive mechanism and at least one cross member between its loader arms.

However, the Bares et al. patent shows it old and well known to provide a track assembly (14) for driving its compact loader over uneven terrain. Further, as best shown in Figures 2 and 5, a cross member (70) extends between the two loader arms (24A,24B) for maintaining the arms in a stable position during raising and lowering operations.

It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to replace the wheels (11,12) of Ulinski with a track-mounted drive arrangement, similar to that shown in Bares et al., so that the carrier could better navigate uneven terrain in a harsh environment. It also would have been obvious to mount at least one cross member between Ulinski’s loader arm assemblies, as taught by Bares et al., in order to create a more stable and durable structure when handling heavy loads.

Allowable Subject Matter

4. Claims 21-27, 29, 31, 34, 35, 37, 39-41, 45-49, and 56-69 are allowed.
5. Claims 50 and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter: Based on applicant’s arguments and demonstrations presented during the personal interview conducted October 10, 2017 and the written remarks included in the response of November 10, 2017, the proposed combination of the “S450TX Mini Skid Steer” brochure published by Vermeer in view of the “Skid Steer Loaders, Radial & Vertical Lift” document published by Mustang (as set forth in section 2 of the Office

action mailed 8/30/17) would not have been obvious to one of ordinary skill in the art because the changes suggested in the combination would not be suitable for the intended design and purpose of the S450TX Mini Skid Steer. Also, the unexpected results and long felt need and attempt by others, as pointed out in applicant's remarks, further demonstrate non-obviousness of the invention as set forth in above indicated allowable claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEAN J KRAMER whose telephone number is (571)272-6926. The examiner can normally be reached on Monday-Friday 7:30-4:00.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saul Rodriguez can be reached on 571-272-7097. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer

Art Unit: 3652

Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DEAN J KRAMER/
Primary Examiner, Art Unit 3652

DEAN J. KRAMER
Primary Examiner
Art Unit 3652

Djk

12/5/17

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL **(Submitted Only via EFS-Web)**

Application Number	15062801	Filing Date	2016-03-07	Docket Number (if applicable)	31681-41	Art Unit	3652
First Named Inventor	Brad Thomas			Examiner Name	Kramer, Dean J.		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, to any international application that does not comply with the requirements of 35 U.S.C. 371, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV.

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
 (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to
 Deposit Account No 012384

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

Signature of Registered U.S. Patent Practitioner			
Signature	Michael J. Vander Molen/	Date (YYYY-MM-DD)	2017-11-10
Name	Michael J. Vander Molen	Registration Number	57274

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

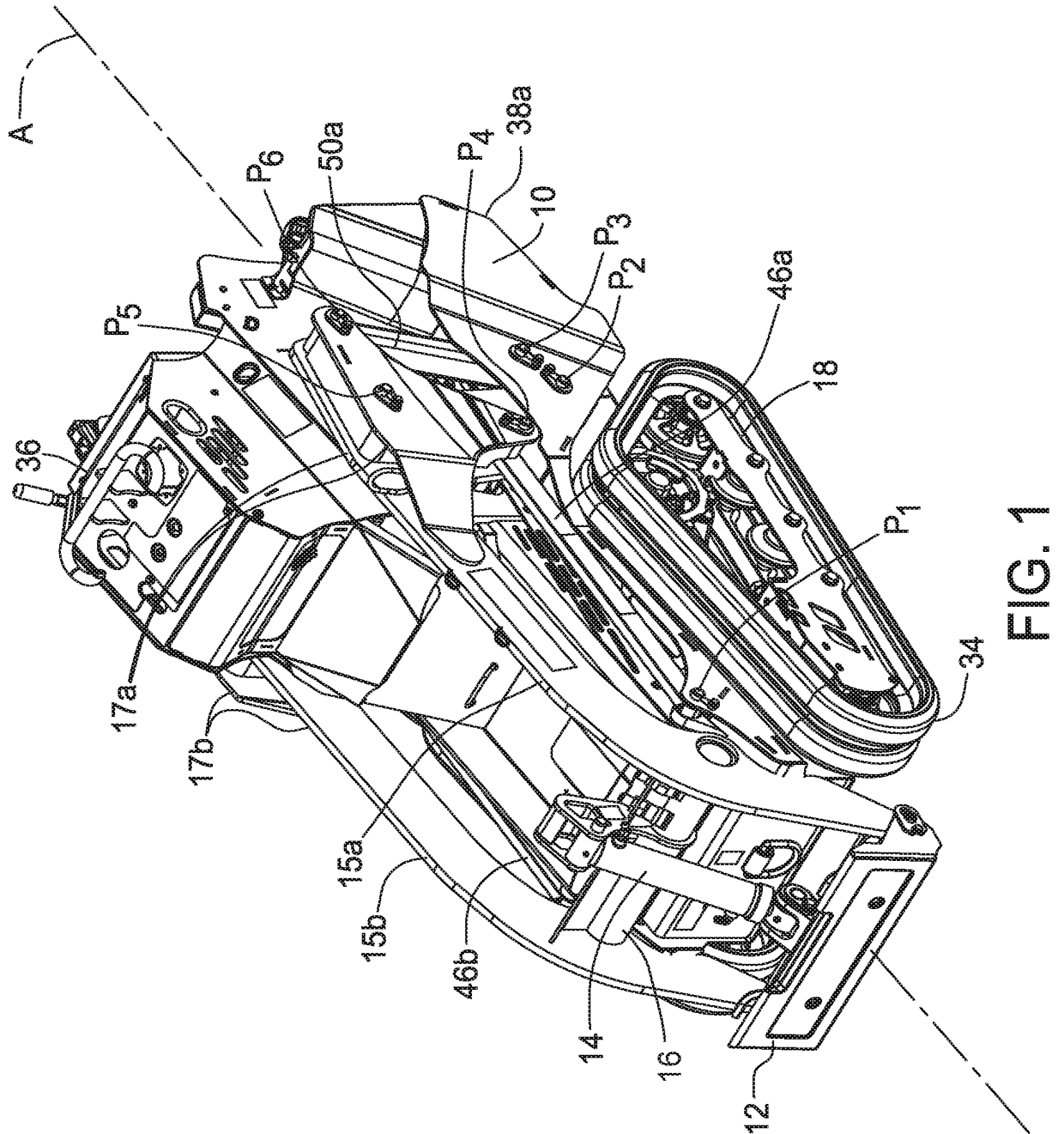


FIG. 1

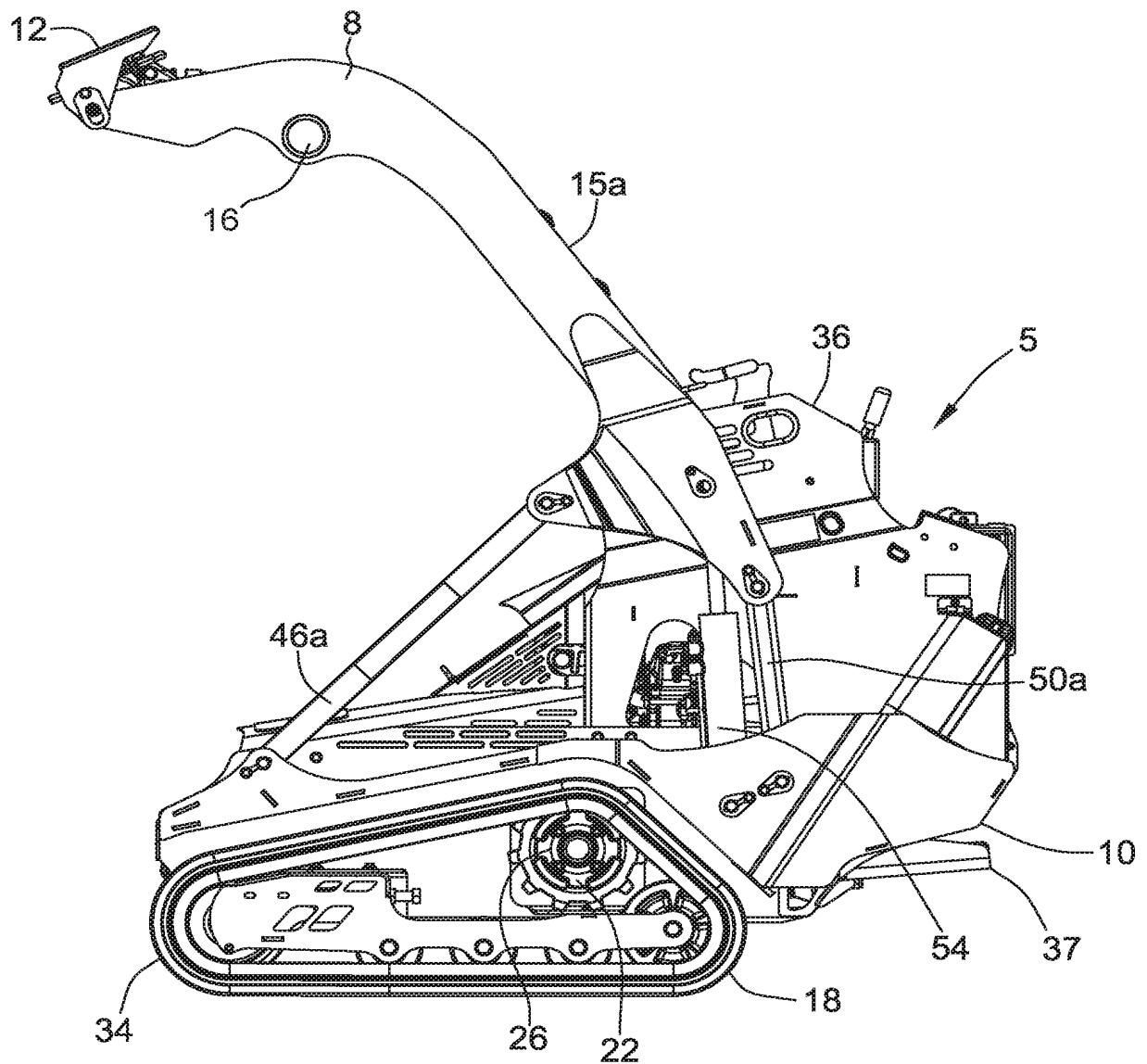


FIG. 3

REMARKS

The Office action of August 30, 2017 has been carefully reviewed and the following remarks are made in response.

Status of Claims

Applicant has amended claims 27, 35, 39, 42 and 43 and added claims 52-69. Claims 28 and 38 are cancelled. Claims 21-27, 29, 31, 34-35, 37 and 39-69 are pending.

Amendment to Specification

Applicant has amended paragraph [0018] of the application to recite:

A cross-member 16 extends from the first arm 15 to the second arm 15b. The actuator 14 is connected to the cross-member 16.

Support for the amendment may be found, for example, in Figure 1 of the application in which the cross-member is shown and in which the actuator 14 is shown as being connected to the cross-member. The drawings alone may provide written description to show that the Inventors were in possession of the subject matter. Possession of an invention may be shown “by disclosure of drawings . . . that are sufficiently detailed to show that applicant was in possession of the claimed invention as a whole.” MPEP §2163(II)(A)(3)(a). Further, the drawings alone may provide written description of the invention under 35 U.S.C. §112. See, e.g., MPEP §2163(II)(A)(3)(a) and *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1560, 19 USPQ2d 1111, 1114 (Fed. Cir. 1991) (“drawings alone may provide a ‘written description’ of an invention as required by Sec. 112”); *In re Wolfensperger*, 302 F.2d 950, 133 USPQ 537 (CCPA 1962) (the drawings of applicant’s specification provided sufficient written descriptive support for the claim limitation at issue); *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 398, 155 USPQ 697, 703 (Ct. Cl. 1967) (“In those instances where a visual representation can flesh out

words, drawings may be used in the same manner and with the same limitations as the specification.”).

Amendments to the Drawings

Applicant has amended drawing sheets 1/7-3/7 by referring to the cross-member as “16”.

Interview Summary

Applicant’s representatives thank the Examiner for the in-person interview at the USPTO on October 10, 2017. Applicant discussed the patentability of the pending claims and presented materials relating to why the claims are not obvious in view of the combination of the S450TX Brochure and the Mustang Brochure. Applicant also presented materials relating to objective evidence of non-obviousness including long felt need, attempts by others, unexpected results, and commercial success. No agreement was reached.

Rejections under 35 U.S.C. §103

The Office has rejected claims 21-27, 29, 31, 34-35, 37 and 39-51 under 35 U.S.C. §103 as being obvious over the brochure entitled “S450TX Mini Skid Steer” published by Vermeer (the “S450TX Brochure”) in view of the brochure entitled “Skid Steer Loaders, Radial & Vertical Lift” published by Mustang (the “Mustang Brochure”). Applicant submits that the pending claims are patentable over the cited references for the reasons set forth below.

Claims 21-27, 29, 31, 34, 45-47 and New Claims 56-60

Independent claim 21 is directed to a compact tool carrier for standing or walk-behind operator control. The compact tool carrier has a longitudinal axis and a mass of less than about 1500 kg, and comprises:

a loader having an arm, the loader being adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a first linkage pivotally attached to the first side of the mainframe at a first pivot point and pivotally attached to the loader arm at a second pivot point;

a second linkage pivotally attached to the first side of the mainframe at a third pivot point and pivotally attached to the loader arm at a fourth pivot point;

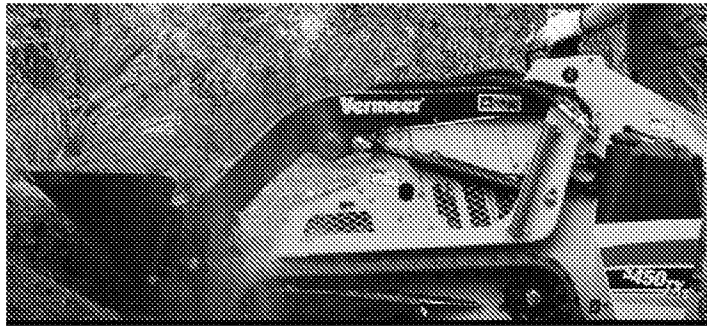
an actuator directly pivotally attached to the first side of the mainframe at a fifth pivot point and directly pivotally attached to the loader arm at a sixth pivot point, the fifth pivot point being distinct from the first pivot point and the third pivot point;

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward of the operator platform relative to the longitudinal axis.

The S450TX Brochure describes the compact tool carrier shown below that is manufactured by Applicant.



Page 1 of the S450TX Brochure

The compact tool carrier shown in the S450TX Brochure includes a loader that is directly attached to the mainframe.

The Mustang Brochure describes and illustrates a commercial line of skid steer loaders sold under the brand name "Mustang". On page 3 of the Office action, the Office references the model shown on page 18 of the Mustang Brochure (Mustang model 2700V)¹ shown below.



Page 18 of the Mustang Brochure

¹ Mustang 2700V appears to be substantially identical to the Gehl V270 information submitted by Applicant in an Information Disclosure Statement dated March 15, 2016. The only apparent difference between the Gehl V270 loader and the Mustang 2700V loader shown on page 18 of the Mustang Brochure is the branding decals.

Mustang 2700V includes a loader that is indirectly connected to the frame of the machine by first and second linkages and an actuator.

The Office articulates its rationale for obviousness on page 3 of the Office action:

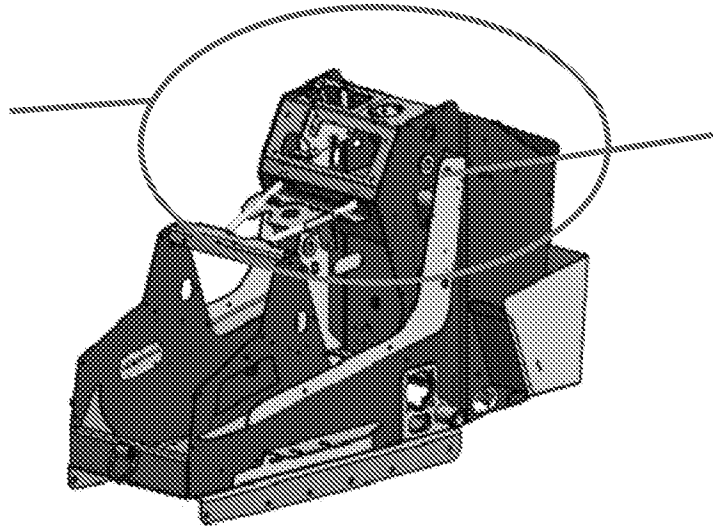
Thus, it would have been obvious . . . to pivotally attach the loader arm of Vermeer to its mainframe through two linkage members and an actuator in an arrangement similar to that shown on page 18 of the Mustang document in order to obtain better forward reach at full lift height and to increase the load that could be lifted as compared to a radial lift model.

One of skill in the art would not have made the modification suggested by the Office at the effective filing date of the invention because (1) the proposed modification would render the S450TX machine unsuitable for its intended purpose as the S450TX is not capable of supporting a vertical lift loader (MPEP §2143.01(V)) and (2) there is no reasonable expectation of success in making the modification proposed by the Office (MPEP §2143.02). Objective evidence of non-obviousness also show the patentability of independent claim 21 over the prior art.

A. The Proposed Modification Renders the Prior Art Unsuitable for its Intended Purpose as the S450TX cannot Accommodate a Vertical Lift Loader

The compact tool carrier shown in the S450TX Brochure was developed and sold by the Applicant. The Inventors of the claimed invention recognized that the S450TX is specifically designed to accommodate a radial lift loader arrangement and would not be able to support a vertical lift loader. A CAD rendering of the S450TX mainframe is shown below in Figure A.

Mainframe designed
to Support Weight
high on Machine
where Loader is
Attached



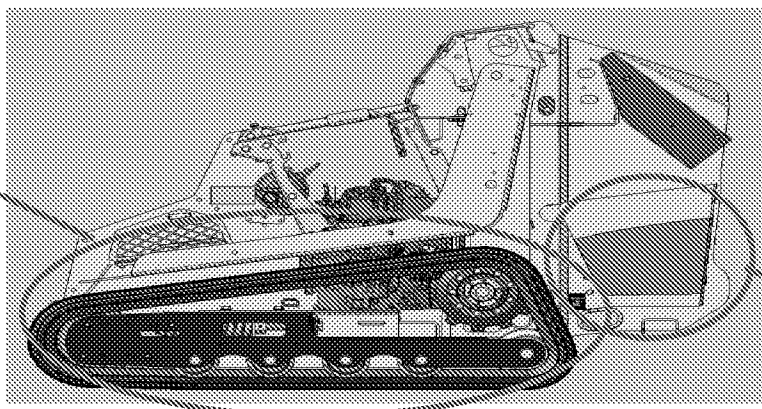
Loader
Pivot
Point

Figure A

The S450TX mainframe was specifically designed to accommodate a radial lift loader. Radial lift loaders connect the loader relatively high on the mainframe and the mainframe is designed to accommodate such weight by extending the mainframe high on the machine.

The S450TX machine does not include an available window in which the pivot points may be lowered. As shown in the CAD rendering of the S450TX machine (Figure B) below, the lower portion of the S450TX machine is occupied by the track assembly and by the fuel tank housing.

Track
Assembly



Fuel Tank Housing

Figure B

There is no space in the S450TX machine to lower the pivot points. Even assuming it would have been obvious to modify, the tracks, fuel tank housing, and engine would need to be repositioned. Indeed, as can be seen below in the CAD renderings of the S450TX machine and an embodiment taught in the patent application (Figures C-E), the positions of these components in the S450TX machine and machine of the application are significantly different.

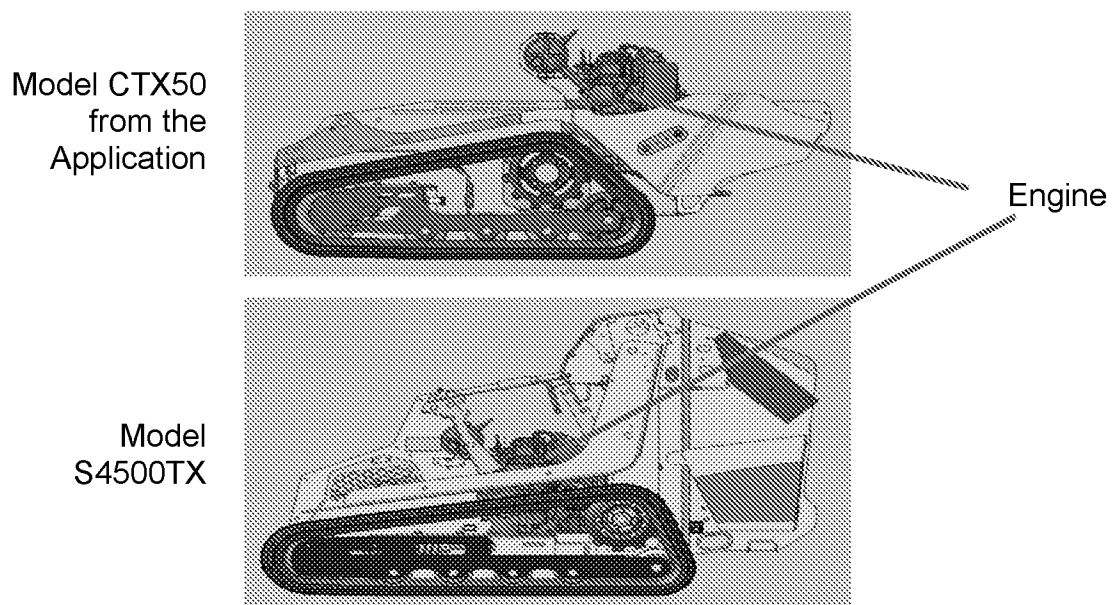
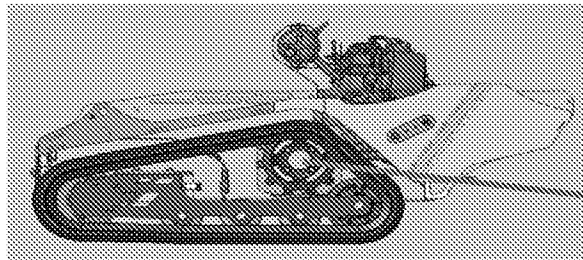


Figure C

Model CTX50
from the
Application



Track Drive
Sprocket

Model
S4500TX

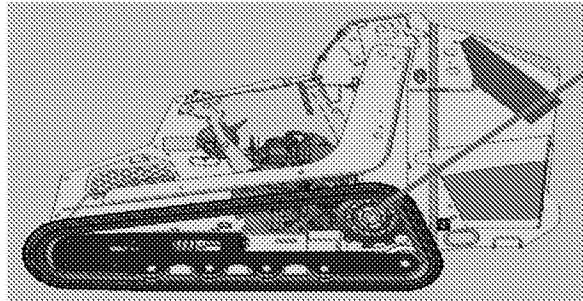
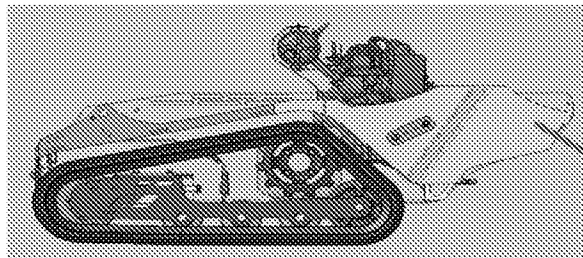


Figure D

Model CTX50
from the
Application



Fuel Tank
Housing

Model
S4500TX

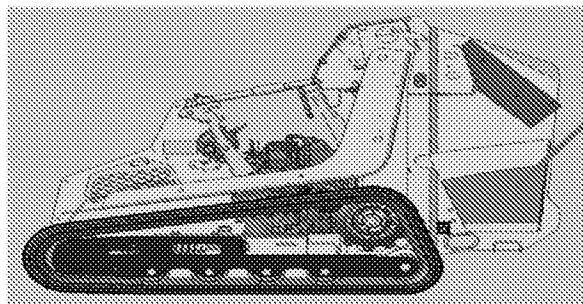


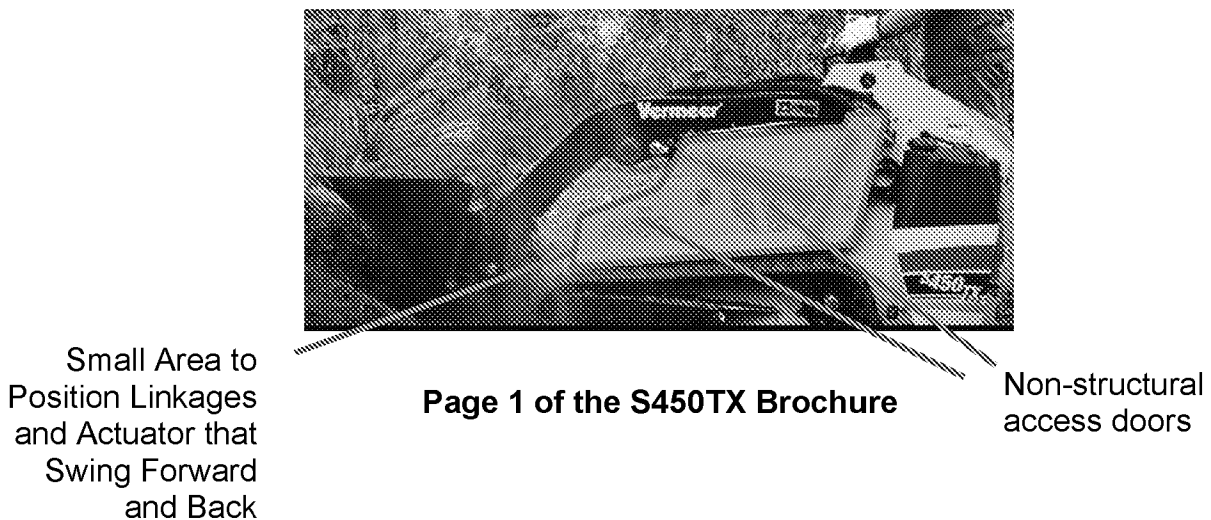
Figure E

The mainframe of the S450TX machine was specifically designed to accommodate its track arrangement, engine location, and fuel tank. By repositioning these components, the S450TX mainframe does not include a proper distribution of weight from front to back of the mainframe.

In view of these considerations, those of skill in the art recognize that the S450TX compact tool carrier cannot accommodate a vertical lift loader. "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." MPEP §2143.01(V). Because the S450TX compact tool carrier of the S450TX Brochure cannot support a vertical lift loader, the compact tool carrier cannot operate for its intended purpose as a compact utility loader under the modification proposed by the Office, and therefore the obviousness rejection is in error.

B. There was no Expectation of Success in Making the Proposed Modification

One of skill in the art would not have modified the S450TX machine at the time of the invention by including a vertical lift loader as proposed by the Office as there is no expectation of success to make the proposed modification. Compact tool carriers have a very small window in which to position the linkages and actuator of a vertical lift loader. The linkages and actuators need sufficient structure in the mainframe to make their connections with the mainframe and need sufficient clearance to allow the actuators and linkages to swing forward and back. This is illustrated by reference to the S450TX machine itself:



Further, as shown in Figure B above, previous compact tool carriers lack sufficient space in which to lower the pivot points to accommodate the vertical lift loader.

Standard size loaders that include a vertical lift loader arrangement are characterized by very large loader arms as shown in Figure F.



Figure F

Compact tool carriers lack the space to accommodate such loader arms. Indeed, this is recognized by The Toro Company ("Toro"), who requested reexamination in U.S. Patent No. 9,321,386 from which the present application claims priority. Toro, as Applicant of U.S. Patent Publication No. 2016/0244937, admits that:

[0007] Finally, the vertical reach of the loader arms on compact utility loaders is somewhat limited. While high lift loader arms are known on full size skid steer loaders as disclosed in U.S. Pat. No. 5,542,814, the use of such high lift loader arms on a compact utility loader has been considered difficult if not impossible due to size and durability constraints. Accordingly, it would be a further advance in the art to provide a way of safely and durably providing high lift loader arms on compact utility loaders to extend the vertical reach of such loaders. For example, this would allow a compact utility loader to dump debris or materials at higher elevations than previously, thus allowing the use of larger trucks to accept such debris or materials for transport.

Toro's admission in U.S. Patent Publication No 2016/0244937 that incorporation of a vertical lift loader arm such as that of Mustang 2700V onto a compact tool carrier such as the S450TX machine "*is difficult if not impossible*" is compelling evidence that there is no expectation of success in making the modification proposed by the Office. The statement by Toro proves that others of ordinary skill in the art recognized that the inventive design was difficult or impossible. They also recognized that the loader arms of compact tool carriers needed to have a small profile so as to not reduce the field of vision of operators positioned toward the rear of the machine:

The present invention relates to a small loader that is manually operated by a standing operator at the rear of the loader. The loader has a low lift arm profile, so that an operator standing at the rear of the loader can see the work area. The low profile lift arms aid side-to-side visibility.

Various small self-propelled loaders have been advanced, where an operator will either stand or walk on the ground behind the loader or stand on a platform on the loader frame to manipulate the work element that is attached to the forward ends of pivoting lift arms.

These loaders find utility in small load applications, where loads that are too heavy for a person to lift can be hoisted. The ability of the loaders to be operated in small areas is important. Ease of manipulation of the bucket or work tool, as well as the ability to see the work that is being carried out is also important.

U.S. Patent No. 6,695,568, col. 1, lines 6-21

One of ordinary skill in the art would not expect the relatively large loader arms of a vertical lift loader to operate on a substantially smaller compact utility loader with any expectation of success.

The Inventors of the claimed invention experienced many failures during development of the loader arrangement described therein (See the Figures below and the Figures that accompanied the presentation materials submitted during the Examiner Interview). In particular, while developing a compact tool carrier that could support a

vertical lift loader, the Inventors experienced catastrophic fractures of the loader arms (Figure G).

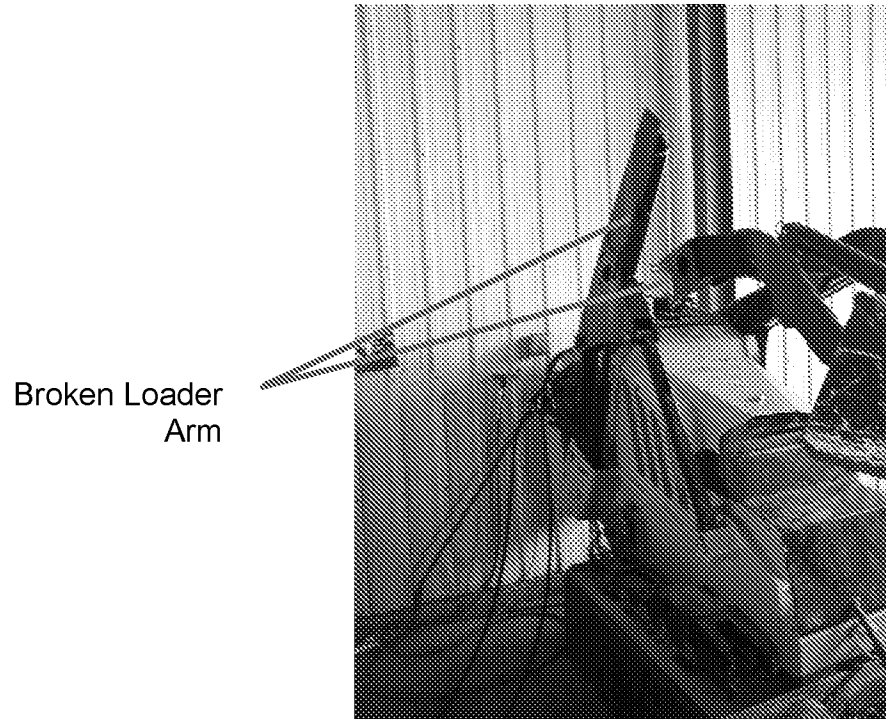


Figure G

The Inventors experienced breakage of pivot pin retainers (Figure H) and many retainers bent during testing (Figure I).

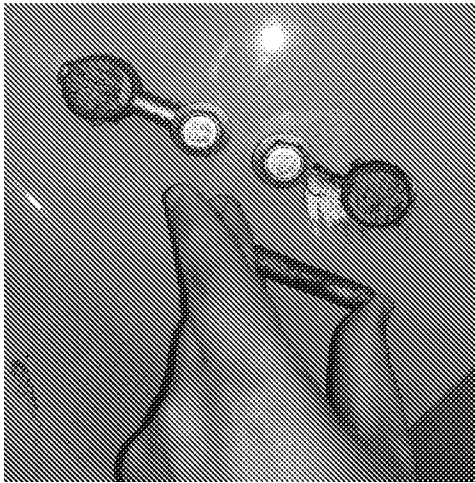


Figure H

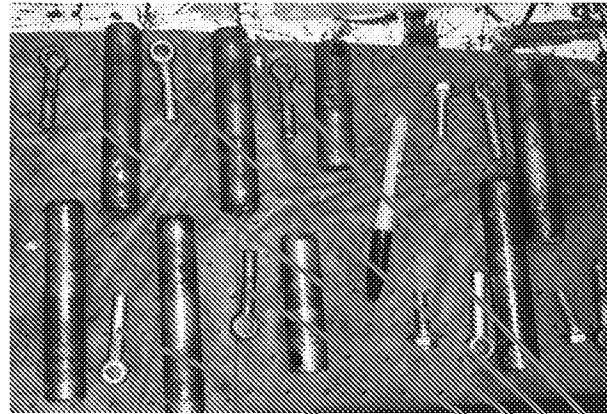


Figure I

Bent Retainers

These failures were encountered despite the Inventors designing a mainframe from the ground-up. These failures are strong evidence that the field of endeavor of the application is unpredictable. Indeed, even small changes to pivot points, weight distribution, and the like in vertical lift machines cause significant changes in the lift profile and lift capacity of the machine. The unpredictable nature of these changes is ***exaggerated*** in compact utility loaders because of the relatively small mass of the machine and restrictions on where components may be placed. The lift profile behavior of compact tool carriers is unpredictable even with the use of state of the art tools available to the inventors at the effective filing date of the application (e.g., solid modeling software from Solidworks, finite element analysis software from ANSYS, in-house programming for evaluation of loading and force analysis, stress coating, strain gauging and cycle test stands). “A rationale to support a conclusion that a claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, **and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art**” (MPEP 2143.02(I); Emphasis added) (See also *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 538, 416, 82 USPQ2d 1385, 1395 (2007)).

There is no expectation of success to use a vertical lift loader such as that of the Mustang 2700V of the Mustang Brochure on a compact utility loader such as that of the S450TX machine of the S450TX Brochure in view that (1) compact tool carriers lack sufficient space to accommodate the linkages and actuators of a vertical lift loader which swing forward and back, (2) third parties such as Toro admitted that incorporation of a vertical lift loader arm onto a compact tool carrier “*is difficult if not impossible*”, (3) the field of endeavor is unpredictable as evidenced by the Inventors experiencing multiple design failures to develop a compact tool carrier with a vertical lift loader despite starting from the ground up in developing such a machine and despite resort to start of the art tools. “Where there is a reason to modify or combine the prior art to achieve the claimed invention, the claims may be rejected as prima facie obvious **provided there is also a reasonable expectation of success.**” (MPEP 2143.02(I)). The lack of a reasonable expectation of success is a critical factor in the obviousness rationale:

Many basic approaches that a practitioner may use to demonstrate nonobviousness also continue to apply in the post-KSR era. Since it is now clear that a strict teaching-suggestion-motivation approach is not the only way to establish a prima facie case of obviousness, it is true that practitioners have been required to shift the emphasis of their nonobviousness arguments to a certain degree. However, familiar lines of argument still apply, including teaching away from the claimed invention by the prior art, **lack of a reasonable expectation of success**, and unexpected results. Indeed, they **may have even taken on added importance** in view of the recognition in KSR of a variety of possible rationales.

MPEP §2145; Emphasis added.

As there was no expectation of success to use a vertical lift loader on a compact utility loader, independent claim 21 is patentable over the S450TX Brochure in view of the Mustang Brochure.

C. Objective Evidence of Non-obviousness

Secondary considerations of non-obviousness such as long felt need, failure of others, commercial success and unexpected results support the patentability of independent claim 21 over the S450TX Brochure in view of the Mustang Brochure. “Objective evidence relevant to the issue of obviousness must be evaluated by Office personnel. *Id.* at 17-18, 148 USPQ at 467. Such evidence, sometimes referred to as ‘secondary considerations,’ may include evidence of commercial success, long-felt but unsolved needs, failure of others, and unexpected results. The evidence may be included in the specification as filed, accompany the application on filing, or be provided in a timely manner at some other point during the prosecution.” MPEP §2141(II).

1. Unexpected Results

By using a linkage and actuator to support the loader, an embodiment of the invention of a compact tool carrier increased the lift capacity of the machine **by 32%** relative to the radial lift S450TX compact tool carrier. This increase is attributable to the inventive change in the loader design because the increase occurred without a significant increase in the weight of the compact tool carrier. This increase in lift capacity (sometimes referred to as “Rated Operator Capacity”) was unexpected. As proof of the unexpected results, and in contrast to the prior art designs, the Mustang loader only increased the lift capacity by 3.8% when switching from a radial lift loader to a vertical lift loader (i.e., a machine in which the loader is connected to the mainframe by a linkage and actuator as set forth in claim 21 of the application) of the same weight (see “Specifications” on page 22 of the Mustang Brochure with the relevant specifications being shown in Table 1 below).

Mustang Skid Loaders	
2600R	2700V
Lift Capacity → 2,600 lbs. (1179)	2,700 lbs. (1225)
2,790 lbs. (1261)	3,000 lbs. (1361)
21.5 gal. (81.4)	24.5 gal. (92.7)
8.0 mph (12.8)	7.4 mph (12)
11.9 mph (19.2)	11.9 mph (19.2)
Weight → 8,200 lbs. (3719)	8,150 lbs. (3697)

Table 1

This is an **eight-fold increase** in the lifting capacity compared to the increase that is expected from the Mustang Brochure. “A **greater than expected result** is an evidentiary factor pertinent to the legal conclusion of obviousness ... of the claims at issue.” (MPEP §716.02(a), Emphasis added; see also *In re Corkill*, 711 F.2d 1496, 226 USPQ 1005 (Fed. Cir. 1985)). As stated in MPEP §2145, “unexpected results . . . may have even taken on **added importance** in view of the recognition in KSR of a variety of possible rationales” (Emphasis added).

2. Long Felt Need and Attempts by Others

As discussed during the October 10 interview, compact tool carriers have been under commercial development for over 30 years. Throughout this period, manufacturers continually have attempted to increase lift capacity of compact tool carriers without sacrificing machine weight and maneuverability.

Others have attempted to solve the problem of increasing the lift capacity of compact tool carriers without sacrificing their compact design in a variety of ways. For example, manufacturers have shifted from “walk-behind” machines to predominantly “ride-on” machines. Manufacturers of ride-on machines are permitted to incorporate an

average weight of an operator (165 lb standard) in the tip capacity testing which increases the rated lift capacity.

	MFG	MODEL	TIP	Design	Boom	HP
2000	Toro	TX420		1480 Walk Behind	Radial	20
	Bobcat	MT50		1500 Walk Behind	Radial	20
	Ditchwitch	SK500		1450 Walk Behind	Radial	25
	Vermeer	S500		1200 Ride On	Radial	25
2005	Vermeer	S500TX		1450 Ride On	Radial	26.5
	Bobcat	MT52		1600 Walk Behind	Radial	23
	Toro	TX525		1560 Walk Behind	Radial	24
	Ditchwitch	SK650		1850 Ride On	Radial	31.5
2010	Boxer	532DX		2100 Ride On	Radial	32
	Vermeer	S500TX		2400 Ride On	Radial	35
	Ditchwitch	SK850		2465 Ride On	Radial	37
	Vermeer	S450TX		1430 Ride On	Radial	25
2015	Boxer	550HD		2734 Ride On	Radial	48
	Bobcat	MT85		2455 Ride On	Radial	25
	Vermeer	CTX50		1715 Ride On	Vertical	25
	Toro	TX1000		3071 Ride On	Vertical	25
2017	Vermeer	CTX150		2956 Ride On	Vertical	40
	Ditchwitch	SK1050		3035 Ride On	Radial	37
	Ditchwitch	SK1550		4451 Ride On	Radial	44

All models now ride on
To incorporate weight of operator in
Tip capacity testing (165 lbs. ISO std)

**Models listed in chronological order based on
Introduction to the market*

Other manufacturers have included “weight kits” that add weight to the back of the machine to increase lift capacity while sacrificing ground clearance (Figure J).

Ditch Witch		CONFIDENTIAL
SUGGESTED PRICE LIST (F.O.B. PERRY, OKLAHOMA)		
PART NO.	DESCRIPTION	
LIFT ARM (Optional)		
150-4171	LIFT ARM ASSEMBLY	
ORANGE INTEL™ OPTIONS (Select One)		
150-2562	GPS ONLY FOR GPS READY (Refer: Supplement Registration Address GPS and Telematics Boxes)	
ORANGE INTEL™ SERVICE PLAN OPTIONS (Optional)		
240-1118	1 Year Data Service Plan GPS ONLY (Must Be Sold In One Year Increments)	
ACCESSORIES		
150-2629	WEIGHT KIT	“Weight Kit”
150-2196	SPRINT UPTIME KIT	

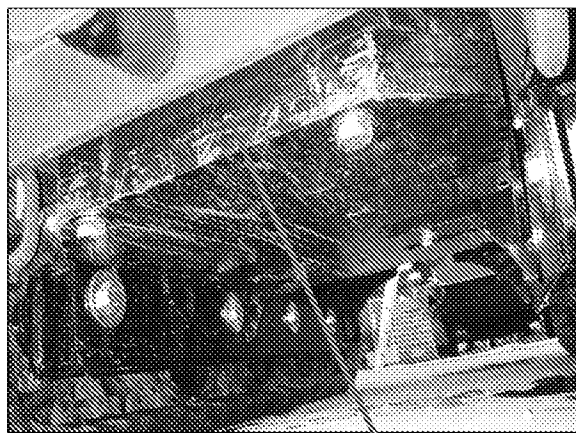


Figure J

Weight Added
toward Rear of
Compact Tool
Carrier

Commercial users have even bolted their own counter-weights near the rear of the machine to increase lift capacity (Figure K):



Weight Added by
Customers

Figure K

Prior art patents even have addressed the problem of increased lift capacity while maintaining the compact design of the machines. For example, U.S. Patent No. 6,695,568 discloses use of far rear pivot points to increase the lift capacity:

The far rear pivot of the lift arms permits using a longer arm on the same length machine. This increases the lift capacity for the same size actuator and there is a longer arc of movement. This means that the bucket or tool moves more vertically as it initially raises, rather than having a pronounced arcuate path that causes the bucket to move forward a significant amount as it starts to lift.

U.S. Patent No. 6,695,568; col. 1, lines 48-54.

U.S. Patent No. 7,494,314 discloses use of pivotal lift arms to allow the load carried by the compact tool carrier to be moved over the loader frame:

A loader has lift arms that are used for mounting a number of different attachments. The attachments can be mounted to the rear of the forward end of the lift arms in order to move the center of gravity of the attachment more directly over the loader frame. Various types of attachments can be used, as shown, and can be controlled to be pivoted for dumping or loading, and can be raised and lowered on the lift arms.

U.S. Patent No. 7,494,314; abstract.

These attempts by others have resulted, at best, in marginal increases in the rated lift capacity of the compact tool carrier.

In comparison, by changing design from a radial lift compact tool carrier to a vertical lift compact tool carrier in which the loader is connected to the mainframe by a linkage and actuator as set forth in claim 21 of the application, a **32% increase** in the rated operator capacity was achieved without significantly increasing the weight of the vehicle. The objective evidence establishes a long-felt need for increased lift capacity in compact tool carriers that was not satisfied by the attempts of others and is further evidence of nonobviousness of independent claim 21 (See MPEP §2141(II)).

3. Commercial Success

Third parties have indicated that the compact tool carrier of independent claim 21 of the application is a commercially successful product with the success of the product being directly tied to the vertical-lift arrangement of the compact tool carrier. CompactEquip.com referred to the commercial product ("the CTX50") as a "game-changer" and directly linked the enhancements to the new vertical-lift arrangement of the loader:

<http://compactequip.com/features/innovative-iron-awards-toro-vermeer-compact-tool-carriers/attachment/vermeer-compact-tool-carrier/>)The Vermeer (<http://vermeer.com>) CTX50 boasts a 600-lb ISO-rated operating capacity and a tipping capacity of 1,715 lbs due to its vertical-lifting path. The vertical-lift path is designed to keep the load closer to the machine, allowing it to lift more than a similar-sized compact tool carrier with a radial-lift path. A vertical-lift path also provides a higher lift height. These enhancements along with the Vermeer exclusive single pilot-operated joystick and stand-on platform make the CTX50 a game-changer in the rental and landscape market.

Toro incorporated the vertical lift arrangement of claim 21 of the application in its “Dingo TX 1000” compact tool carrier. This product has been praised for its increased lift capacity that results from the vertical lift arrangement that is set forth in independent claim 21 of the application. Toro notes that the vertical lift design “allows it to lift more weight” and that Toro “doubled the capacity of our current loaders” (<https://www.equipmentworld.com/toros-new-vertical-lift-dingo-tx-1000-lays-claim-to-strongest-compact-utility-loader-on-the-market-photos/>). The third party praise by Toro and others of the vertical lift arrangement set forth in claim 21 of the application that is incorporated in the CTX50 and Dingo TX1000 machines is further evidence of nonobviousness of independent claim 21. See MPEP §2141 (“Objective evidence relevant to the issue of obviousness must be evaluated by Office personnel. . . . and may include evidence of commercial success . . .”). By attributing the increase in lift capacity to the vertical lift design that is set forth in claim 21 of the application (i.e., a machine in which the loader is connected to the mainframe by a linkage and actuator as recited in claim 21), “nexus” between the commercial success and the claimed invention has been established (See MPEP §2145).

Because one of skill in the art would not have made the modification suggested by the Office because the proposed modification would render the S450TX machine unsuitable for its intended purpose and there is no reasonable expectation of success in making the modification proposed by the Office and because objective evidence of non-

obviousness indicate patentability of independent claim 21, claim 21 is patentable over the S450TX Brochure in view of the Mustang Brochure.

Dependent claims 22-29, 31, 34, 45-47 and 56-70 incorporate the recitations of independent claim 21 by way of their dependency therefrom, and are patentable for at least the reasons set forth above relating to independent claim 21.

Additionally, dependent claim 27 recites that, as the loader travels from a down position to a vertically raised position, the first, second, third, fourth, fifth, and sixth pivot points (i.e., the pivot points formed between the mainframe and each of the first linkage, second linkage, and actuator and the pivot points formed between the loader arm and each of the first linkage, second linkage and actuator) are (1) disposed between the operator controls and the bottom of the mainframe and/or (2) disposed forward of the control station.

As shown from pages 3 and 5 of the Mustang Brochure reproduced below, Mustang 2700V includes linkage pivot points that swing back and forth at the rear of the machine where the operator would be positioned in a compact tool carrier.



Pivot Point Near
Operator in Down
Position

Page 3 of the Mustang Brochure

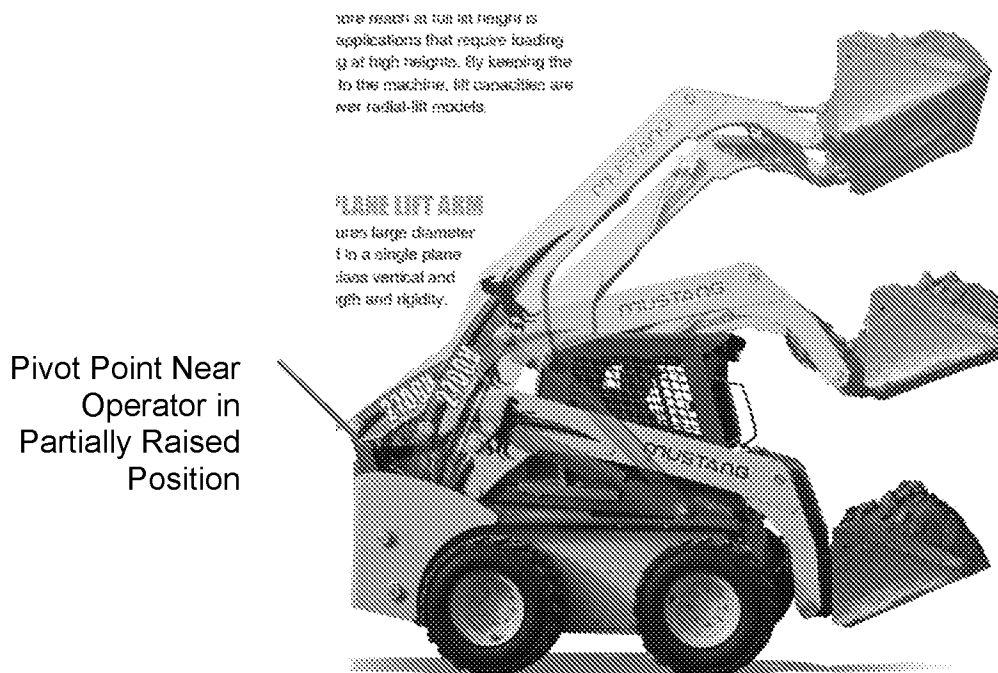


Fig. 5 of the Mustang Brochure

In the modification proposed by the Office, one of skill in the art would not move the pivot points forward. The prior art indicates that these pivot points should be positioned as far rearward and high as possible to increase the lift capacity of the compact tool carrier. In particular, U.S. Patent No. 6,695,568 states that:

While it is desirable to have the pivot points for the boom near the rear of the small loader, and relatively high so that the reach is adequate for operation, conventional, straight lift arms tend to block vision to the side, as they are raised. Additionally, they will be in the way for access from the side of the loader to components such as the engine or drive components that are nested between the lift arms.

U.S. Patent No. 6,695,568; Col. 1, lines 23-29

The lift arms are pivoted at the uppermost, rear portion of the frame, and extend forwardly to support a bucket, or other work implement at the forward ends of the arms. Hydraulic actuators are utilized for raising and lowering the lift arms, in a normal manner.

The far rear pivot of the lift arms permits using a longer arm on the same length machine. This increases the lift capacity for the same size actuator and there is a longer arc of movement. This means that the bucket or tool moves more vertically as it initially raises, rather than having a pronounced arcuate path that causes the bucket to move forward a significant amount as it starts to lift.

U.S. Patent No. 6,695,568; Col. 1, lines 43-54.

Because the art teaches that the pivot points should be as rearward and high as possible, one of skill in the art would not move the pivot points (1) between the operator controls and the bottom of the mainframe and/or (2) forward of the control station as recited in claim 27. For at least these reasons claim 27 is patentable over the cited references.

Claim 47 recites that the second, fourth and sixth pivot points (i.e., the pivot points formed between the loader arm and each of the first linkage, second linkage and actuator) are forward of both the rear and front of the operator platform. As shown above in Figures 3 and 5 of the Mustang Brochure, Mustang 2700V includes pivot points in the mainframe that would be longitudinally *aligned* with an operator platform and not *forward* of the operator platform. For at least these reasons claim 47 is patentable over the cited references.

Dependent claims 56-60 relate to the position of cross-members in the loader. As discussed further below in regard to independent claim 42 and claims depending therefrom, claims 56-60 are further patentable over the S450TX Brochure in view of the Mustang Brochure.

Claims 35, 37, 39-41, 48-49 and New Claims 61-69

As amended, independent claim 35 is directed to a compact tool carrier and comprises:

a loader adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a first linkage pivotally attached to the first side of the mainframe at a first pivot point and pivotally attached to the loader at a second pivot point;

a second linkage pivotally attached to the first side of the mainframe at a third pivot point and pivotally attached to the loader at a fourth pivot point;

an actuator pivotally attached to the first side of the mainframe at a fifth pivot point and directly pivotally attached to the loader at a sixth pivot point;

a drive mechanism for propelling the compact tool carrier over a supporting surface, the drive mechanism having a drive sprocket defining a rotational axis R, the compact tool carrier having a bottom at which the drive mechanism contacts the supporting surface, the rotational axis R and the bottom of the compact tool carrier being separated by a vertical distance D1, the rotational axis R and a bottom of the first side of the mainframe being separated by a vertical distance D5, the rotational axis R and each of the first, third, and fifth pivot points being separated by a vertical distance, the vertical distance between the rotational axis R and the first pivot point being less than 1.5 times D1, the vertical distance between the rotational axis R and the third pivot point also being less than 1.5 times D1, the vertical distance between the rotational axis R and the fifth pivot point also being less than 1.5 times D1, the first side of the

mainframe comprising a forward-most pivot point, the first pivot point, the third pivot point, or the fifth pivot point being the forward-most pivot point, the vertical distance between the rotational axis R and the forward-most pivot point being less than twice D5;

a control station having operator controls for propelling the compact tool carrier forward and for raising and/or lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward of the operator platform relative to the longitudinal axis.

Inasmuch as independent claim 35 recites a compact tool carrier having first and second linkages pivotally attached to the first side of the mainframe and pivotally attached to the loader and that the loader is free from direct attachment to the mainframe, independent claim 35 is patentable over the S450TX Brochure in view of the Mustang Brochure for the reasons set forth above relating to independent claim 21.

Applicant submits that claim 35 is further patentable over the S450TX Brochure in view of the Mustang Brochure as the Mustang Brochure does not disclose a vertical lift loader arrangement in which the distance between the rotational axis and each of the first, third and fifth pivot points (i.e., each of the pivot points formed between the mainframe and the first and second linkages and the actuator) is less than 1.5 D1 and that the vertical distance between the rotational axis and the forward-most pivot point being less than twice D5.

With Reference to Figure L below, the Mustang 2700V includes two linkages on each side of the machine.

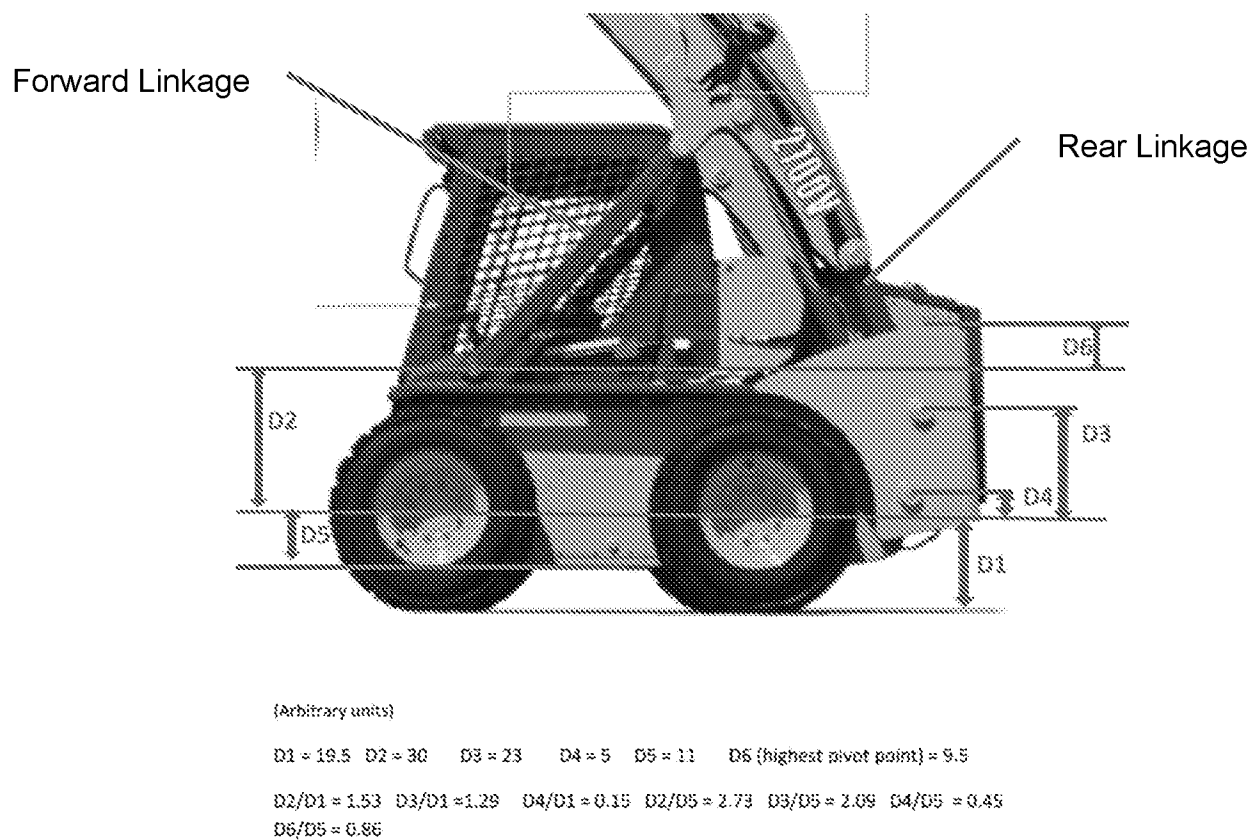


Figure L

The distance between the rotational axis (e.g., the center of the wheel hub) and the pivot point of the forward linkage in Mustang 2700V is referred to as “D2” in Figure L with the corresponding distance of the rear linkage being referred to as “D3”. The forward linkage forms the forward-most pivot point in the mainframe. Significantly, distance D2 (i.e., the distance between the forward linkage pivot point and the rotational axis) is more than 1.5 D1 (1.53 D1) and is more than twice D5 (2.73 D5). Mustang 2700V does not include two linkages with the distance between their pivot points and the rotational axis being less than 1.5 D1 and does not include a forward-most pivot point with the distance between the forward-most pivot point and the rotational axis being less than twice D5. For at least this reason independent claim 35 and claims 37, 39-41, 48-49 and 61-69 depending therefrom are patentable over the cited references.

New claim 61 recites that the distance between the rotational axis and the forward-most pivot point is less than 1.75 D5 and new claim 62 recites that this distance is less than 1.5 D5. As noted above, the distance between the rotational axis and the forward-most pivot point of Mustang 2700V is 2.73 D5. For at least this reason, new claims 61 and 62 are further patentable over the cited references.

New claim 63 recites that the distance between the rotational axis and the forward-most pivot point is less than D1 and new claim 64 recites that this distance is less than 0.75 D1. As noted above, the distance between the rotational axis and the forward-most pivot point of Mustang 2700V is 1.53 D1. For at least this reason, new claims 63 and 64 are further patentable over the cited references.

Dependent claims 65-69 relate to the position of cross-members in the loader. As discussed further below in regard to independent claim 42 and claims depending therefrom, claims 65-69 are further patentable over the S450TX Brochure in view of the Mustang Brochure.

Claims 42-44, 50-51 and New Claims 52-55

As amended, independent claim 42 is directed to a compact tool carrier comprising:

a loader adapted to carry a tool, the loader being moveable between a down position and a vertically raised position, the loader comprising:

a first loader arm;

a second loader arm; and

at least one cross-member that extends from the first loader arm to the second loader arm;

a first linkage pivotally attached to the loader at a first linkage pivot point;

a second linkage pivotally attached to the loader at a second linkage pivot point;

an actuator pivotally attached to the loader at an actuator pivot point;

a drive mechanism comprising tracks;

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader; and

an operator platform for standing operation of the operator controls of the control station, the operator platform being located toward the rear of the compact tool carrier such that each cross-member and each of the first linkage pivot point, the second linkage pivot point and the actuator pivot point are disposed completely forward of the operator platform when the loader travels from the down position to the vertically raised position.

As discussed during the October 10 interview, by eliminating cross-members toward the back of the loader such as the cross-members that would be positioned at or behind the operator station as recited in independent claim 42, the behavior of the loader changes because the structure of the loader is less able to communicate laterally across the loader (i.e., absorb forces or loads from side-to-side).

With reference to the figure on page 5 of the Mustang Brochure reproduced below, the Mustang 2700V includes a rear cross-member and a front cross-member.

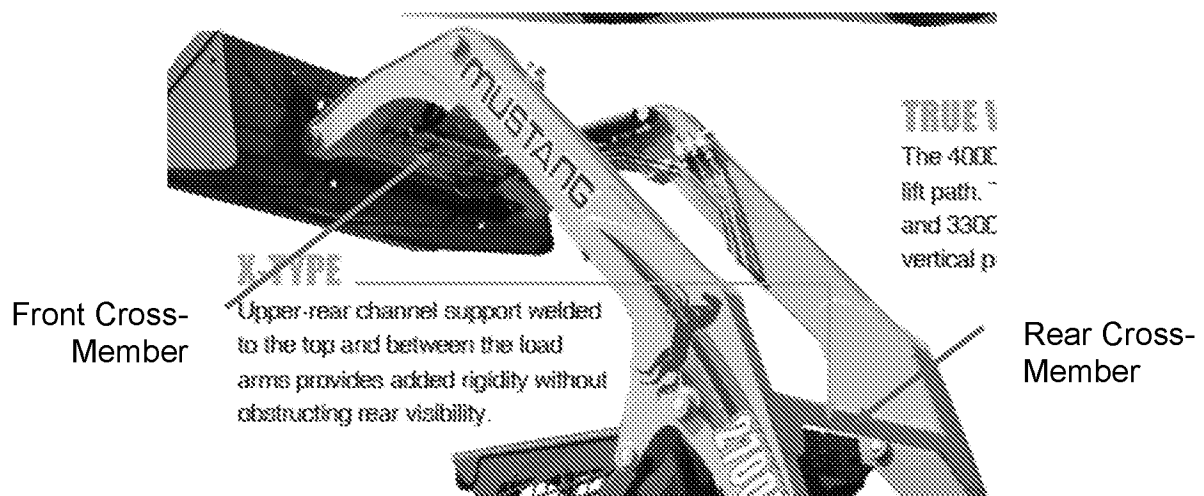
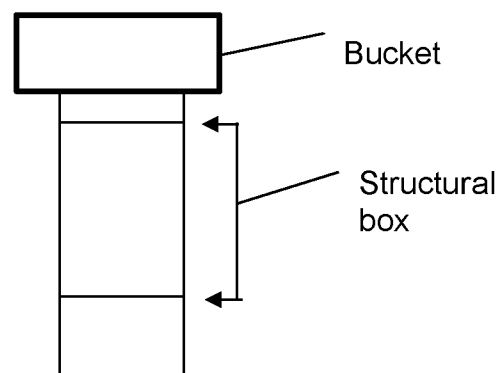


Fig. 5 of Mustang Brochure

The rear cross-member is said to “provide added rigidity without obstructing visibility.” As shown in the sketch below, the front and rear cross-members of the Mustang 2700V loader allow the loader to behave as a structural “box” in which forces may be distributed side-to-side across the loader.



With reference to Figure 3 of the application in which an example compact tool carrier is shown, in the compact tool carrier of independent claim 42, the loader includes at least one cross-member with each of the cross-members being *forward of the operator platform* in the vertically raised position.

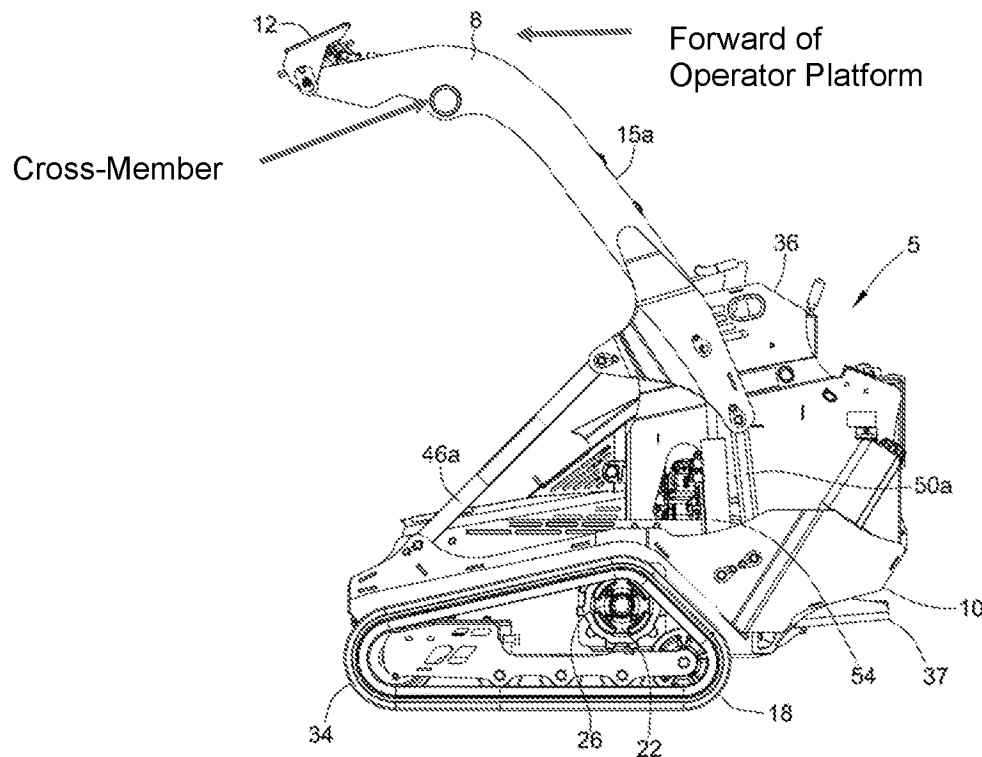


Fig. 3 of the Application

To modify Mustang 2700V as recited in claim 42, the rear cross-member must be eliminated and/or moved forward of the operator platform which affects the behavior of the loader. As stated during the October 10 interview, this significantly increases the complexity in designing a compact tool carrier with a vertical lift loader as the forces applied to each loader arm are not well communicated laterally across the loader. For example, during lifting, an uneven load may cause one arm to be under compression while the other arm is under tension. This different division of forces across the loader is absorbed by the mainframe which increases the complexity in designing the machine.

For at least these reasons, independent claim 42 and claims 43-44 and 50-55 depending therefrom are patentable over the cited references.

New claim 54 recites that the compact tool carrier comprise a *single* cross-member. As shown above in Figure 5 of the Mustang Brochure, Mustang 2700V

includes *two* cross-members. Elimination of a cross-member from the loader arrangement of Mustang 2700V changes the behavior of the loader and increases the complexity in designing the mainframe. For at least this reason, claim 54 is further patentable over the cited references.

New claim 55 recites that each cross-member is disposed forward of the first linkage pivot point and the second linkage pivot point. As shown in Figure 13 of the Mustang Brochure reproduced below, Mustang 2700V includes a cross-member between the first and second linkage pivot points.



Page 13 of the Mustang Brochure

To eliminate or move the cross-member such that each cross-member is forward of the first and second linkage pivot points as set forth in claim 55 would affect the performance of the loader and there is no expectation that moving the cross-member as recited in claim 55 would allow the machine to withstand the forces applied during lifting under load. For at least this reason claim 55 is patentable over the cited references.

CONCLUSION

Applicant respectfully requests reconsideration and allowance of all pending claims. The undersigned requests a phone call from the Examiner if this might expedite prosecution.

Applicant does not concede the propriety of the rejections, but amends only to expedite prosecution. Applicant reserves the right to file one or more continuation applications.

Applicant authorizes the Commissioner to charge any fees which may be due in connection with this Amendment D and RCE to Deposit Account No. 012384 in the name of Armstrong Teasdale LLP.

Respectfully submitted,

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MJV/asb

AMENDMENTS TO THE DRAWINGS

Please replace drawing sheets 1/7 to 3/7 with replacement drawing sheets 1/7 to 3/7.

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0018] with the following paragraph:

[0018] An embodiment of a compact tool carrier is generally referred as “5” in FIG. 1. The compact tool carrier 5 includes a loader 8 supported by a mainframe 10. The loader 8 includes an attachment plate 12 for interchangeably attaching any one of a number of tools (not shown). In this regard, such interchangeable tools do not form part of the compact tool carrier 5 unless stated otherwise. The attachment plate 12 is connected to an actuator 14 for tilting of tools connected to the attachment plate 12. The loader 8 has a first arm 15a and a second arm 15b generally opposite the first arm 15a. A cross-member 16 extends from the first arm 15a to the second arm 15b. The actuator 14 is connected to the cross-member 16. Each arm 15a, 15b may be a single weldment or may include various components attached by fasteners (e.g., nuts and bolts). The first and second arms 15a, 15b each include a bracket portion 17a, 17b (FIG. 1) for fastening various linkages.

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1-20. (Cancelled)

21. (Previously presented) A compact tool carrier configured for standing operator control and having a longitudinal axis and a mass of less than about 1500 kg, the compact tool carrier comprising:

a loader having an arm, the loader being adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a first linkage pivotally attached to the first side of the mainframe at a first pivot point and pivotally attached to the loader arm at a second pivot point;

a second linkage pivotally attached to the first side of the mainframe at a third pivot point and pivotally attached to the loader arm at a fourth pivot point;

an actuator directly pivotally attached to the first side of the mainframe at a fifth pivot point and directly pivotally attached to the loader arm at a sixth pivot point, the fifth pivot point being distinct from the first pivot point and the third pivot point;

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward of the operator platform relative to the longitudinal axis.

22. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the mainframe incorporates a single weldment.

23. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the loader arm is a first loader arm the loader comprising a second loader arm and the compact tool carrier comprising a third linkage pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

24. (Previously presented) The compact tool carrier as set forth in claim 23 wherein the actuator is a first actuator, the compact tool carrier comprising a second actuator, the second actuator being pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

25. (Previously presented) The compact tool carrier as set forth in claim 21 comprising a drive mechanism comprising tracks or wheels, the drive mechanism being attached to the mainframe.

26. (Previously presented) The compact tool carrier as set forth in claim 21 comprising a drive mechanism propelled by the engine.

27. (Currently amended) The compact tool carrier as set forth in claim 21 wherein the first, second, [[and]] third, fourth, fifth and sixth pivot points are (1) disposed between the operator controls and a bottom of the mainframe or (2) disposed forward of the control station as the loader moves from a down position to a vertically raised position.

28. (Cancelled)

29. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the loader arm incorporates a single weldment.

30. (Cancelled)

31. (Previously presented) The compact tool carrier as set forth in claim 21 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

32-33. (Cancelled)

34. (Previously presented) A method for operating the compact tool carrier as set forth in claim 21, the method comprising standing on the operator platform and operating the control station to propel the compact tool carrier forward and/or raise or lower the loader.

35. (Currently amended) A compact tool carrier having a longitudinal axis and comprising:

a loader adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a first linkage pivotally attached to the first side of the mainframe at a first pivot point and pivotally attached to the loader at a second pivot point;

a second linkage pivotally attached to the first side of the mainframe at a third pivot point and pivotally attached to the loader at a fourth pivot point;

an actuator pivotally attached to the first side of the mainframe at a fifth pivot point and directly pivotally attached to the loader at a sixth pivot point;

a drive mechanism for propelling the compact tool carrier over a supporting surface, the drive mechanism having a drive **[[shaft]] sprocket** defining a rotational axis R, the compact tool carrier having a bottom at which the drive mechanism contacts the supporting surface, the rotational axis R and the bottom of the compact tool carrier being separated by a vertical distance D1, **the rotational axis R and a bottom of the first side of the mainframe being separated by a vertical distance D5,** the rotational axis R and each of the first, third, and fifth pivot points being separated by a vertical distance, the vertical distance between the rotational axis R and the first pivot point being less than 1.5 times D1, the vertical distance between the rotational axis R and the third pivot point also being less than 1.5 times D1, the vertical distance between the rotational axis R and the fifth pivot point also being less than 1.5 times D1, **the first side of the mainframe comprising a forward-most pivot point, the first pivot point, the third pivot point, or the fifth pivot point being the forward-most pivot point, the vertical distance between the rotational axis R and the forward-most pivot point being less than twice D5;**

a control station having operator controls for propelling the compact tool carrier forward and for raising and/or lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward of the operator platform relative to the longitudinal axis.

36. (Cancelled)

37. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the second side of the mainframe comprises at least two pivot points, each

vertical distance between the rotational axis R and the respective pivot point being less than 1.5 times D1.

38. (Cancelled)

39. (Currently amended) The compact tool carrier as set forth in claim 35 wherein ~~the rotational axis R and a bottom of the first side of the mainframe are separated by a vertical distance D5~~, the first side of the mainframe **comprises** ~~comprising~~ a top-most pivot point, the first pivot point, the third pivot point, or the fifth pivot point being the top-most pivot point, the top most pivot point and a top of the first side of the mainframe being separated by a vertical distance D6, D6 being less than about 1.5 times D5.

40. (Previously presented) The compact tool carrier as set forth in claim 35 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

41. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the mainframe incorporates a single weldment.

42. (Currently amended) A compact tool carrier comprising:

a loader adapted to carry a tool, the loader being moveable between a down position and a vertically raised position, **the loader comprising:**

a first loader arm;

a second loader arm; and

at least one cross-member that extends from the first loader arm to the second loader arm;

a first linkage pivotally attached to the loader at a first linkage pivot point;

a second linkage pivotally attached to the loader at a second linkage pivot point;

an actuator pivotally attached to the loader at an actuator pivot point;

a drive mechanism comprising tracks;

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader; and

an operator platform for standing operation of the operator controls of the control station, the operator platform being located toward the rear of the compact tool carrier such that **each cross-member and** each of the first linkage pivot point, the second linkage pivot point and the actuator pivot point are disposed completely forward of the operator platform when the loader travels from the down position to the vertically raised position.

43. (Currently amended) compact tool carrier as set forth in claim 42 **further comprising a wherein the-mainframe, the first linkage, second linkage and actuator being pivotally attached to the mainframe, the loader being free from direct attachment to the mainframe incorporates a single weldment.**

44. (Previously presented) The compact tool carrier as set forth in claim 42 having a longitudinal axis and further comprising an engine disposed forward of the operator platform relative to the longitudinal axis.

45. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the loader is supported by no more than three linkages and actuators.

46. (Previously presented) The compact tool carrier as set forth in claim 21 wherein a single actuator is attached to the first side of the mainframe.

47. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the loader is moveable between a down position and a vertically raised

position, the operator platform having a rear and a front relative to the longitudinal axis, the second pivot point, fourth pivot point, and sixth pivot point being disposed forward of the rear and front of the operator platform when the loader travels from the down position to the vertically raised position.

48. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the loader is supported by no more than three linkages and actuators.

49. (Previously presented) The compact tool carrier as set forth in claim 35 wherein a single actuator is attached to the first side of the mainframe.

50. (Previously presented) The compact tool carrier as set forth in claim 42 wherein the loader is supported by no more than three linkages and actuators.

51. (Previously presented) The compact tool carrier as set forth in claim 42 wherein a single actuator supports the loader.

52. (New) The compact tool carrier as set forth in claim 42 further comprising an attachment plate for removably attaching a tool to the compact tool carrier, the cross-member being spaced from the attachment plate.

53. (New) The compact tool carrier as set forth in claim 42 wherein the drive mechanism has a drive sprocket, the cross-member being disposed forward of the drive sprocket in the vertically raised position and the down position of the loader.

54. (New) The compact tool carrier as set forth in claim 42 wherein the compact tool carrier comprises a single cross-member.

55. (New) The compact tool carrier as set forth in claim 42 wherein each cross-member is disposed forward of the first linkage pivot point and the second linkage pivot point.

56. (New) The compact tool carrier as set forth in claim 21 wherein the loader is moveable between a down position and a vertically raised position, the arm of the loader being a first arm and the loader comprising a second arm and at least one cross-member that extends from the first loader arm to the second loader arm, wherein each cross-member is disposed forward of the operator platform relative to the longitudinal axis in the vertically raised position of the loader.

57. (New) The compact tool carrier as set forth in claim 56 further comprising an attachment plate for removably attaching a tool to the compact tool carrier, the cross-member being spaced from the attachment plate.

58. (New) The compact tool carrier as set forth in claim 56 further comprising a drive mechanism for propelling the compact tool carrier over a supporting surface, the drive mechanism having a drive sprocket, the cross-member being disposed forward of the drive sprocket in the vertically raised position and the down position of the loader.

59. (New) The compact tool carrier as set forth in claim 56 wherein the compact tool carrier comprises a single cross-member.

60. (New) The compact tool carrier as set forth in claim 56 wherein each cross-member is disposed forward of the second pivot point and the fourth pivot point.

61. (New) The compact tool carrier as set forth in claim 35 wherein the vertical distance between the rotational axis R and the forward-most pivot point is less than 1.75 D5.

62. (New) The compact tool carrier as set forth in claim 35 wherein the vertical distance between the rotational axis R and the forward-most pivot point is less than 1.5 D5.

63. (New) The compact tool carrier as set forth in claim 35 wherein the vertical distance between the rotational axis R and the forward-most pivot point is less than D1.

64. (New) The compact tool carrier as set forth in claim 35 wherein the vertical distance between the rotational axis R and the forward-most pivot point is less than 0.75 D1.

65. (New) The compact tool carrier as set forth in claim 35 wherein the loader is moveable between a down position and a vertically raised position, the loader comprising:

a first arm;

a second arm; and

at least one cross-member that extends from the first loader arm to the second loader arm, wherein each cross-member is disposed forward of the operator platform relative to the longitudinal axis in the vertically raised position of the loader.

66. (New) The compact tool carrier as set forth in claim 65 further comprising an attachment plate for removably attaching a tool to the compact tool carrier, the cross-member being spaced from the attachment plate.

67. (New) The compact tool carrier as set forth in claim 65 wherein the cross-member is disposed forward of the drive sprocket in the vertically raised position and the down position of the loader.

68. (New) The compact tool carrier as set forth in claim 65 wherein the compact tool carrier comprises a single cross-member.

69. (New) The compact tool carrier as set forth in claim 65 wherein each cross-member is disposed forward of the second pivot point and the fourth pivot point.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Brad Thomas et al.
Serial No.: 15/062,801
Filed On: March 7, 2016
Confirmation No.: 8886
For: LOW PROFILE COMPACT TOOL CARRIERS
Examiner: Dean J. Kramer

Art Unit: 3652

November 10, 2017

AMENDMENT D and RCE

TO THE COMMISSIONER FOR PATENTS,
SIR:

Please enter the following amendments and consider the following remarks:

Amendments to the Claims are reflected in the Listing of Claims which begins on page 2;

Amendments to the Specification begin on page 11;

Amendments to the Drawings begin on page 12; and

Remarks begin on page 13.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	03/07/2016	Brad Thomas	31681-41	8886

76656 7590 10/24/2017

Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MO 63105

EXAMINER

KRAMER, DEAN J

ART UNIT	PAPER NUMBER
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3652

NOTIFICATION DATE	DELIVERY MODE
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10/24/2017

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

<i>Applicant-Initiated Interview Summary</i>	Application No. 15/062,801	Applicant(s) THOMAS ET AL.	
	Examiner DEAN KRAMER	Art Unit 3652	

All participants (applicant, applicant's representative, PTO personnel):

(1) DEAN KRAMER. (3) Louis Hartke.

(2) Michael J. Vander Molen. (4) Mike Munsell.

Date of Interview: 10 October 2017.

Type: ☐ Telephonic ☐ Video Conference
 ☒ Personal [copy given to: ☐ applicant ☒ applicant's representative]

Exhibit shown or demonstration conducted: ☒ Yes ☐ No.
 If Yes, brief description: models of the instant invention and prior art were demonstrated.

Issues Discussed ☐101 ☐112 ☐102 ☒103 ☐Others
 (For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: all pending.

Identification of prior art discussed: all of record (generally).

Substance of Interview
 (For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Discussed the rejections in the last Office action. Also discussed the differences between the prior art and the instant invention. Applicant demonstrated the commercial success of the invention as well as the unexpected results of the instant invention.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/DEAN KRAMER/ Primary Examiner, Art Unit 3652	
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Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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76656 7590 08/30/2017

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EXAMINER

KRAMER, DEAN J

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08/30/2017

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

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USpatents@armstrongteasdale.com

Office Action Summary	Application No. 15/062,801	Applicant(s) THOMAS ET AL.	
	Examiner DEAN KRAMER	Art Unit 3652	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/26/17.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 21-29,31,34,35 and 37-51 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 21-29,31,34,35 and 37-51 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some** c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☐ Notice of References Cited (PTO-892) | 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____. | 4) ☐ Other: ____. |

DETAILED ACTION

The amendment filed July 26, 2017 and the remarks presented therewith have been carefully considered. However, they are not deemed to be fully persuasive. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 21-29, 31, 34, 35, and 37-51 is/are rejected under 35 U.S.C. 103 as being unpatentable over the “S450TX Mini Skid Steer” document, published by Vermeer, copyright 2013 (hereinafter “Vermeer”) in view of the “Skid Steer Loaders, Radial & Vertical Lift” document, published by Mustang, copyright 2014 (hereinafter “Mustang”).

Vermeer shows a compact tool carrier configured for standing operator control (see top photograph on page 1 of document) having a mass of 961.6 kg (see page 2 of document) comprising a loader having a loader arm adapted to carry a tool at its distal end, a mainframe, an actuator pivoted directly between the mainframe and loader arm, and a rearwardly positioned control station with operator controls for propelling the compact tool carrier forward and for raising and lowering the loader. Vermeer does not show its loader arm being free from direct attachment to the mainframe or a pair of

linkages pivotally attaching the loader arm to one side of the mainframe as set forth in the above claims.

However, Mustang shows an embodiment of a vertical lift loader arm which is *not* directly connected to the mainframe but instead is pivoted to front and rear linkage members that are directly pivoted to the mainframe (see embodiment on page 18 of the Mustang document). This pivotal arrangement enables Mustang's embodiment to provide vertical lift and creates more reach at full lift height which is optimal for applications that require loading or stacking at elevated locations. The Mustang document also states that "By keeping the load closer to the machine, lift capacities are increased over radial lift models.

Thus, it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to pivotally attach the loader arm of Vermeer to its mainframe through two linkage member and an actuator in an arrangement similar to that shown on page 18 of the Mustang document in order to obtain better forward reach at full lift height and to increase the load that could be lifted as compared to a radial lift model.

Regarding claims 22, 29, 41, and 43, it would have been a matter of obvious engineering design choice to form the mainframe, linkage, or loader arms as a one-piece construction. *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349(CCPA 1965) (A claim to a fluid transporting vehicle was rejected as obvious over a prior art reference which differed from the prior art in claiming a brake drum integral with a clamping means, whereas the brake disc and clamp of the prior art comprise several parts rigidly

secured together as a single unit. The court affirmed the rejection holding, among other reasons, “that the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice”).

In regard to claims 35 and 37-39, the exact distances between the pivot points of the various links or actuators and the drive shaft are not specified in the Vermeer or Mustang. However, Mustang appears to show each vertical distance between the drive shaft rotational axis and a respective pivot point being less than 1.5 times the distance separating the rotational axis and ground. Such an arrangement allows Mustang’s embodiment to provide vertical lift and more reach at full lift height which is optimal for applications that require loading or stacking at elevated locations. The low pivot points would improve the stability of the resulting loader when in an extended position and form the most compact vehicle size for operating in confined spaces.

Response to Arguments

Applicant’s arguments with respect to claims 21-29, 31, 34, 35, and 37-51 have been considered but are moot because the arguments do not apply to the Mustang document being used in the current rejection.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEAN KRAMER whose telephone number is (571)272-6926. The examiner can normally be reached on Monday-Friday.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saul Rodriguez can be reached on (571) 272-7097. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3652

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DEAN KRAMER/
Primary Examiner, Art Unit 3652

Djk
8/16/17

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Brad Thomas et al. Art Unit: 3652
Serial No.: 15/062,801
Filed On: March 7, 2016
Confirmation No.: 8886
For: LOW PROFILE COMPACT TOOL CARRIERS
Examiner: Dean J. Kramer

July 26, 2017

AMENDMENT C

TO THE COMMISSIONER FOR PATENTS,
SIR:

Please enter the following amendments and consider the following remarks:

Amendments to the Claims are reflected in the Listing of Claims which begins on page 2; and

Remarks begin on page 11.

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

21. (Currently amended) A compact tool carrier configured for standing operator control and having a longitudinal axis and a mass of less than about 1500 kg, the compact tool carrier comprising:

a loader having an arm, the loader being adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a first linkage pivotally attached to the first side of the mainframe at a first pivot point and pivotally attached to the loader arm at a second pivot point;

a second linkage pivotally attached to the first side of the mainframe at a third pivot point and pivotally attached to the loader arm at a fourth pivot point;

an actuator directly pivotally attached to the first side of the mainframe at a fifth pivot point and directly pivotally attached to the loader arm at a sixth pivot point, the fifth pivot point being distinct from the first pivot point and the third pivot point;

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward of the operator platform relative to the longitudinal axis.

22. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the mainframe incorporates a single weldment.

23. (Currently amended) The compact tool carrier as set forth in claim 21 wherein the loader arm is a first loader arm ~~and the linkage is a first linkage,~~ the loader comprising a second loader arm and the compact tool carrier comprising a third ~~second~~ linkage pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

24. (Previously presented) The compact tool carrier as set forth in claim 23 wherein the actuator is a first actuator, the compact tool carrier comprising a second actuator, the second actuator being pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

25. (Previously presented) The compact tool carrier as set forth in claim 21 comprising a drive mechanism comprising tracks or wheels, the drive mechanism being attached to the mainframe.

26. (Previously presented) The compact tool carrier as set forth in claim 21 comprising a drive mechanism propelled by the engine.

27. (Currently amended) The compact tool carrier as set forth in claim 21 wherein the first and third pivot points are linkage is pivotally attached to the first side of the mainframe at a linkage pivot point, the linkage pivot point being (1) disposed between the operator controls and a bottom of the mainframe or (2) disposed forward of the control station.

28. (Currently amended) The compact tool carrier as set forth in claim 27 wherein the fifth pivot point is actuator is pivotally attached to the first side of the mainframe at an actuator pivot point, the actuator pivot point being (1) disposed between the operator controls and a bottom of the mainframe or (2) disposed forward of the control station.

29. (Previously presented) The compact tool carrier as set forth in claim 21 wherein the loader arm incorporates a single weldment.

30. (Cancelled)

31. (Previously presented) The compact tool carrier as set forth in claim 21 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

32-33. (Cancelled)

34. (Previously presented) A method for operating the compact tool carrier as set forth in claim 21, the method comprising standing on the operator platform and operating the control station to propel the compact tool carrier forward and/or raise or lower the loader.

35. (Currently amended) A compact tool carrier having a longitudinal axis and comprising:

a loader adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a first linkage pivotally attached to the first side of the mainframe at a first pivot point and pivotally attached to the loader at a second pivot point;

a second linkage pivotally attached to the first side of the mainframe at a third pivot point and pivotally attached to the loader at a fourth pivot point;

an actuator pivotally attached to the first side of the mainframe at a fifth ~~third~~ pivot point and directly pivotally attached to the loader at a sixth ~~fourth~~ pivot point;

a drive mechanism for propelling the compact tool carrier over a supporting surface, the drive mechanism having a drive shaft defining a rotational axis R, the compact tool carrier having a bottom at which the drive mechanism contacts the supporting surface, the rotational axis R and the bottom of the

compact tool carrier being separated by a vertical distance $D1$, the rotational axis R and each of the first, and third, and fifth pivot points being separated by a vertical distance, the vertical distance between the rotational axis R and the first pivot point being less than 1.5 times $D1$, the vertical distance between the rotational axis R and the third pivot point also being less than 1.5 times $D1$, the vertical distance between the rotational axis R and the fifth pivot point also being less than 1.5 times $D1$;

a control station having operator controls for propelling the compact tool carrier forward and for raising and/or lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward of the operator platform relative to the longitudinal axis.

36. (Cancelled)

37. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the second side of the mainframe comprises at least two pivot points, each vertical distance between the rotational axis R and the respective pivot point being less than 1.5 times $D1$.

38. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the rotational axis R and a bottom of the first side of the mainframe are separated by a vertical

distance D5, the first side of the mainframe comprising a forward-most pivot point, the first pivot point, [[or]] the third pivot point, or the fifth pivot point being the forward-most pivot point, the vertical distance between the rotational axis R and the forward-most pivot point being less than twice D5.

39. (Currently amended) The compact tool carrier as set forth in claim 35 wherein the rotational axis R and a bottom of the first side of the mainframe are separated by a vertical distance D5, the first side of the mainframe comprising ~~comprises~~ a top-most pivot point, the first pivot point, [[or]] the third pivot point, or the fifth pivot point being the top-most pivot point, the top most pivot point and a top of the first side of the mainframe being separated by a vertical distance D6, D6 being less than about 1.5 times D5.

40. (Previously presented) The compact tool carrier as set forth in claim 35 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

41. (Previously presented) The compact tool carrier as set forth in claim 35 wherein the mainframe incorporates a single weldment.

42. (Currently amended) A compact tool carrier comprising:

a loader adapted to carry a tool, the loader being moveable between a down position and a vertically raised position;

a first linkage pivotally attached to the loader at a first linkage pivot point;

a second linkage pivotally attached to the loader at a second linkage pivot point;

an actuator pivotally attached to the loader at an actuator pivot point;

a drive mechanism comprising tracks;

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader; and

an operator platform for standing operation of the operator controls of the control station, the operator platform being located toward the rear of the compact tool carrier such that each of the first linkage pivot point, the second linkage pivot point and the actuator pivot point are disposed completely forward of the operator platform when the loader travels from the down position to ~~[[in]]~~ the vertically raised position.

43. (Currently amended) The compact tool carrier as set forth in claim 42 wherein ~~each of the first linkage pivot point, the second linkage pivot point and the actuator pivot point are disposed forward of the operator platform as the loader travels from the down position to the vertically raised position~~ the mainframe incorporates a single weldment.

44. (Currently amended) The compact tool carrier as set forth in claim 42 ~~wherein each of the first linkage pivot point,~~

~~the second linkage pivot point and the actuator pivot point are disposed below the operator controls of the control station in the down position having a longitudinal axis and further comprising an engine disposed forward of the operator platform relative to the longitudinal axis.~~

45. (New) The compact tool carrier as set forth in claim 21 wherein the loader is supported by no more than three linkages and actuators.

46. (New) The compact tool carrier as set forth in claim 21 wherein a single actuator is attached to the first side of the mainframe.

47. (New) The compact tool carrier as set forth in claim 21 wherein the loader is moveable between a down position and a vertically raised position, the operator platform having a rear and a front relative to the longitudinal axis, the second pivot point, fourth pivot point, and sixth pivot point being disposed forward of the rear and front of the operator platform when the loader travels from the down position to the vertically raised position.

48. (New) The compact tool carrier as set forth in claim 35 wherein the loader is supported by no more than three linkages and actuators.

49. (New) The compact tool carrier as set forth in claim 35 wherein a single actuator is attached to the first side of the mainframe.

50. (New) The compact tool carrier as set forth in claim 42 wherein the loader is supported by no more than three linkages and actuators.

51. (New) The compact tool carrier as set forth in claim 42 wherein a single actuator supports the loader.

REMARKS

Applicant has amended claims 21, 23, 27-28, 33, 35, 38-39 and 42-44 and added claims 45-51. Claims 30, 32-33 and 36 are cancelled. Claims 21-29, 31, 34-35, 37-51 are pending.

The Office action of April 26, 2017 has been carefully reviewed and the following remarks are made in response.

Claim Objections

Applicant has cancelled claim 32, thereby obviating the objection.

Rejections under 35 U.S.C. §112(b)

Claim 39 has been amended to provide antecedent basis for "D5", thereby obviating the rejection.

Rejections under 35 U.S.C. §103

The Office has rejected claims 21-44 under 35 U.S.C. §103 as being obvious over U.S. Patent No. 3,074,572 to Ulinski ("Ulinski") in view of the S450TX Mini Skid Steer brochure ("S450TX Brochure"). Claims 21-35 and 37-44 are also rejected under 35 U.S.C. §103 as being obvious over the S450TX Brochure in view of U.S. Patent No. 5,609,464 to Moffitt ("Moffitt"). The pending claims are patentable over the cited references for the reasons set forth below.

Claims 21-29, 31 and 34

- i. Ulinski in view of the S450TX Brochure

With reference to Figure 3 of the application reproduced below, as amended, independent claim 21 recites a compact tool carrier having, among other features, first and second linkages pivotally attached to the first side of the mainframe and the loader arm and an actuator that is directly pivotally attached to the loader arm.

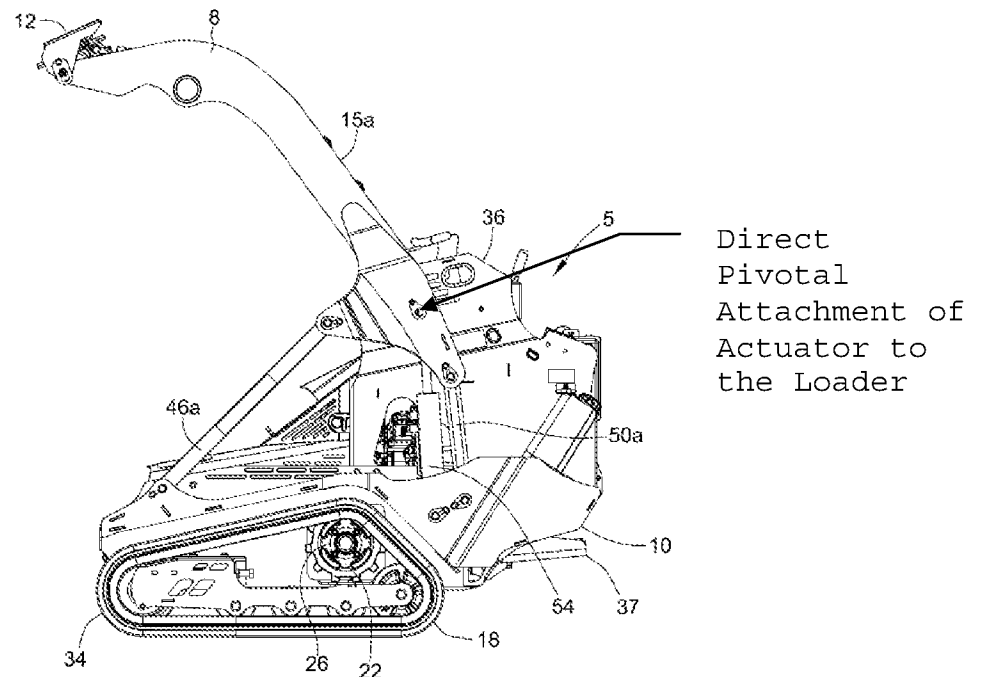


Fig. 3 of the Application (annotated)

Ulinski does not disclose or suggest a loader in which the actuator is directly attached to the loader.

With reference to Figure 4 of Ulinski reproduced below, the lift cylinder 29 is directly connected to a "bell crank" 32, and not directly connected to the "lever" 19.

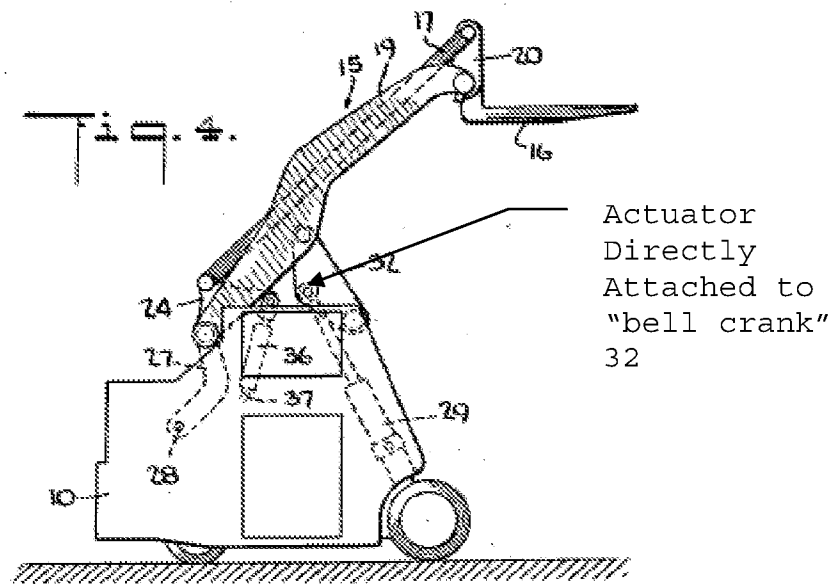


Figure 4 of Ulinski (annotated)

By connecting the cylinder 29 to the bell crank 32 rather than extending the cylinder 9 to the lever 19, Ulinski can maintain a "large space 41" (Fig. 2) which includes a compartment 45 (Fig. 1 below) with an access opening 50 covered by removable closure 51 to access battery B (col. 2, lines 30-60).

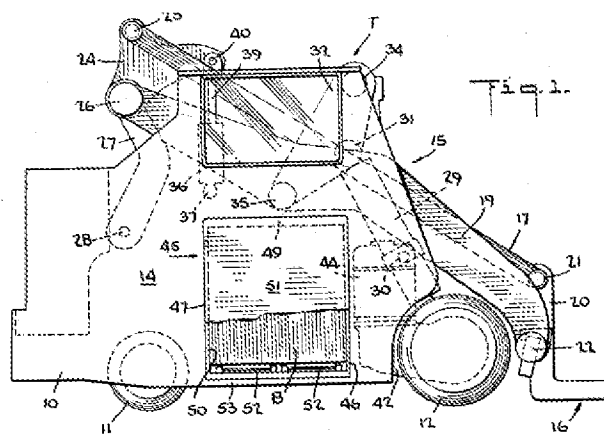


Fig. 1 of Ulinski

As stated by Ulinski, the cylinder 29 may be maintained forward to the compartment 45 and "the leverage system 15 then will allow access to the compartment 45, while supported through the pivots 28, 30 that may be placed at points below the top of the compartment" (col. 2, lines 49-57).

Further, by attaching the cylinder 29 to the bell crank 32, actuation of the cylinder 29 from the lowered fork position (Fig. 1) causes the bell crank 32 to pivot and the rear arm 27 to move rearward (Fig. 3) and then forward (Fig. 4). The fork 16 is thus raised in "**substantially a straight line**" (see col. 3, lines 23, emphasis added).

The proposed modification of Ulinski by attaching the cylinder 27 directly to the loader renders Ulinski unsuitable for its intended purpose. Ulinski provides access to the battery/engine compartment and allows the rear arm to move in an alternating rearward and forward motion. Ulinski does not state that these features are optional. "If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." MPEP §2143.01(V). For at least this reason, one of skill in the art would not modify Ulinski by directly attaching the cylinder to the loader.

Ulinski also teaches away from a lift in which the actuator is directly pivotally attached to the loader. Ulinski states at column 1, lines 21-39 that its loader lift is an improvement

over that of U.S. Patent No. 2,980,271, in which the actuator is directly attached to the loader (see Fig. 3 of Pat. No. 2,980,271 cited in the Information Disclosure Statement submitted with this Amendment). A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. MPEP §2141.02. A prior art reference that "teaches away" from the claimed invention is a significant factor to be considered in determining obviousness. MPEP §2145(X)(D)(1).

For at least these reasons independent claim 21 as amended and claims 22-29, 31 and 34 are patentable over Ulinski in view of the S450TX Brochure.

In regard to new dependent claims 45-47, **Ulinski does not disclose or suggest a compact tool carrier with no more than three linkages and actuators that support the loader as recited in claim 45** (see cylinder 36 and col. 1, lines 26-29 of Ulinski). Ulinski also does not disclose a machine that includes a single actuator attached to the first side of the mainframe, as recited in independent claim 46 or that includes pivot points formed between the loader and the first linkage, second linkage, and actuator that are disposed forward of the rear and front of the operator platform when the loader travels from the down position to the vertically raised position.

ii. The S450TX Brochure in view of Moffitt

Referring to Figure 3 of the present application, independent claim 21 as amended recites that the pivot point at which the actuator is pivotally attached to the first side of the mainframe be distinct from the pivot point formed between the first linkage and the first side of the mainframe and the pivot point formed between the second linkage and the first side of the mainframe.

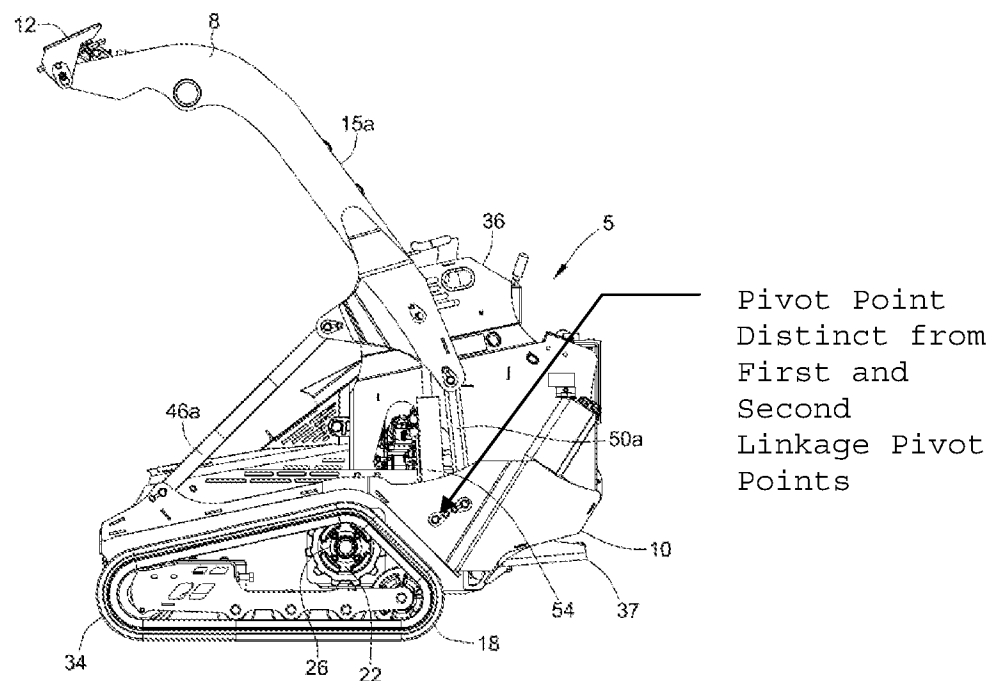


Fig. 3 of the Application (annotated)

Claim 21 also recites that the actuator be directly pivotally attached to the first side of the mainframe.

The machine of the S450TX Brochure does not include first and second linkages each pivotally attached to the first side of

the mainframe and to the loader as recited in independent claim 21.

Moffitt is directed to a loader machine. Moffitt discloses two embodiments of the loader machine which are shown in Figures 2 and 6, reproduced below. The two embodiments of the machines of Moffitt include a driver 76, control arm 64 and lift link 42 on each side of the mainframe which support the main lift links 40. In neither the embodiment of Figure 2 of Moffitt nor the embodiment of Figure 6 does the actuator directly pivotally attach to the frame with the pivot point being distinct from the pivot point of the linkages. As stated by Moffitt:

In one embodiment of the invention, each driver is articulately connected to the loader frame at substantially the same location as the control arm. In an alternative embodiment, each driver is articulately connected intermediate the ends of the respective control arm. (col. 2, lines 29-34)

With reference to the embodiment of Figure 2 of Moffitt, Moffitt states that "[i]n the most preferred form of the invention, the cylinder end of each driver 74 is connected to at a common location with the lower end of the respective control arm 64 as by pivot pin 68" (col. 5, lines 51-54).

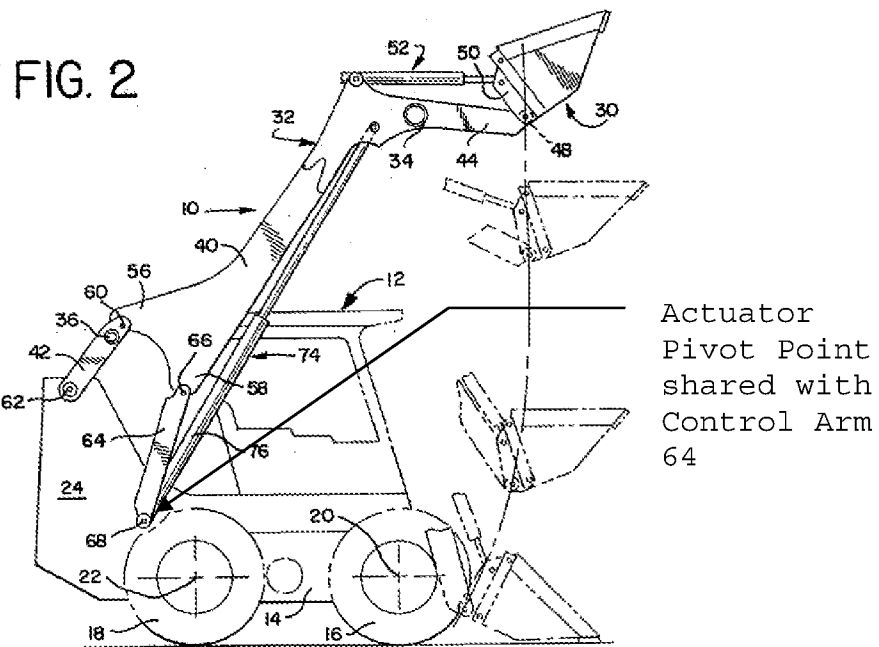


Fig. 2 of Moffitt (annotated)

With reference to Figure 6 of Moffitt, Moffitt states that "[i]n this alternative form of the invention, each driver 174 is . . . articulately connected to the respective control arm 164 intermediate the ends thereof preferably by a pivot pin 184."

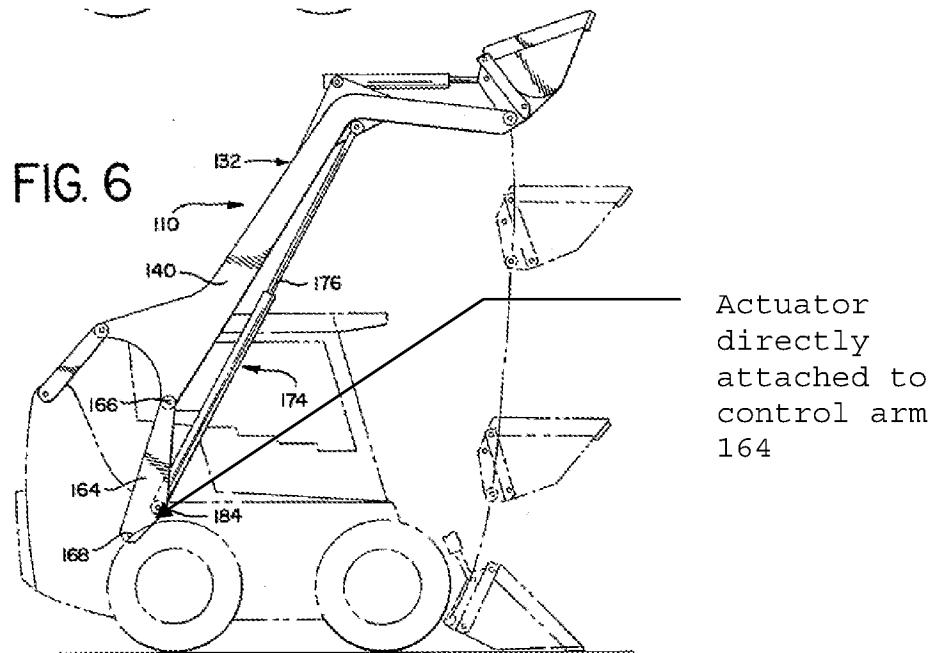


Fig. 6 of Moffitt (annotated)

If one of skill in the art were to indirectly mount the loader arms of the machine of the S450TX Brochure to its mainframe through a series of links and actuators as disclosed in Moffitt as suggested by the Office on page 5 Of the Office action, the resulting machine would not include an actuator directly pivotally attached to the first side of the mainframe with a pivot point distinct from the pivot points of the first and second linkages. For at least this reason, independent claims 21 and claims 22-29, 31 and 34 are patentable over the S450TX Brochure in view of Moffitt.

Claims 35 and 37-41

i. Ulinski in view of the S450TX Brochure

To the extent that independent claim 35 has been amended similar to claim 21 to recite that the actuator is *directly* pivotally attached to the loader, independent claim 35 is patentable over Ulinski in view of the S450TX Brochure for at least the reasons given above relating to independent claim 21.

With reference to Figures 2 and 5 of the application reproduced below, independent claim 35 also recites a drive mechanism having a drive shaft that defines a rotational axis R.

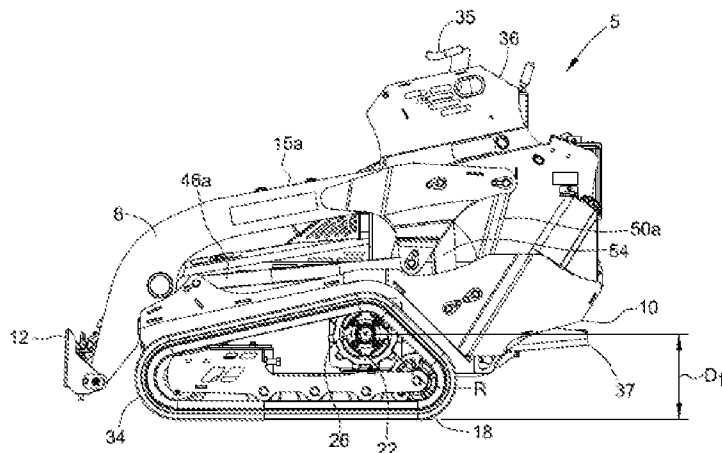


Fig. 2 of the Application

The rotational axis R and bottom of the compact tool carrier 5 are separated by a distance D1. The vertical distances (D2, D3, D4) between the rotational axis R1 and each of the pivot points (P₁, P₂, P₃ in Fig. 5 below) formed between first side of the mainframe 38a and the first linkage 46a/50a, second linkage 46a/50a, and actuator 54 are each less than 1.5 times D1.

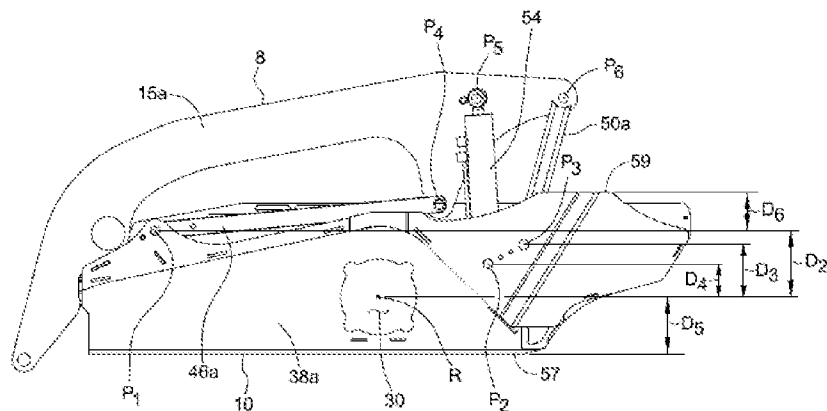


Fig. 5 of the Application

Ulinski discloses a fork truck with the distances between R1 and the pivot points formed between the linkages and mainframe being greater than 1.5 times D1 as shown in Figure 4 below.

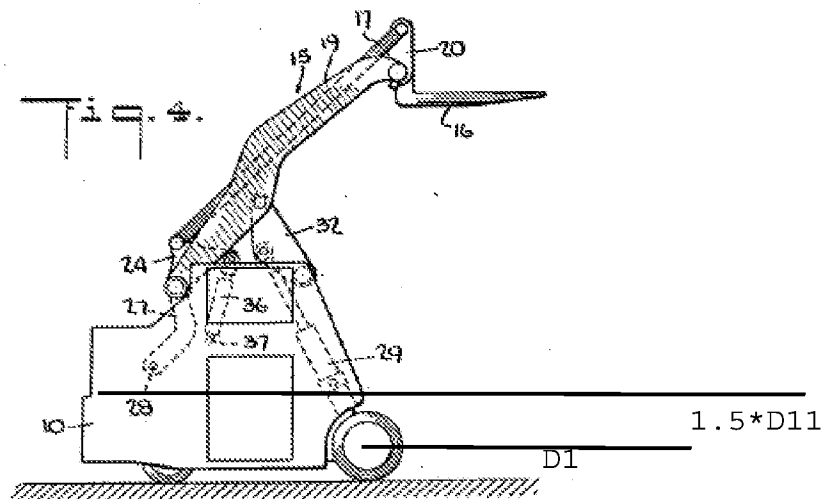


Fig. 4 of Ulinski (annotated)

The reasoning for the Office's rejection of independent claim 35 over Ulinski in view of the S450TX Brochure is that it "would be obvious to design the positions of these pivot points

as low as possible in order to improve the sightlines of a user standing on the platform and to form the most compact vehicle size for operating in confined spaces" (page 4 of the Office action). **The reasoning stated by the Office is incorrect because Ulinski actually teaches away from lowering the pivot points formed between the linkages and the mainframe of the machine recited therein.**

Ulinski is a divisional of US 2,953,264 ("Ulinski '264", cited in the Information Disclosure Statement submitted with this Amendment) and discloses the same fork truck and lift as Ulinski. Ulinski '264 states:

I have recognized that the leverage system, *of necessity*, must extend longitudinally of a substantial portion of the truck frame, and *must be mounted at the upper rear portion of the truck*. (Col. 1, lines 30-33; Emphasis added)

Because Ulinski '264 discloses that it is necessary to mount the leverage system at an upper portion of the truck, Ulinski '264 and its divisional teach away from lowering the pivot points of the linkages. One of skill in the art would not lower the pivot points of the linkages as suggested by the Office as it is necessary that they be positioned at the upper rear portion of the truck as stated by Ulinski '264.

For at least these reasons, independent claim 35 and claims 37-41 are patentable over Ulinski in view of the S450TX Brochure.

In regard to new dependent claims 48 and 49, Ulinski does not disclose or suggest a compact tool carrier with no more than three linkages and actuators that support the loader as recited in claim 45 or that includes a single actuator attached to the first side of the mainframe is recited in independent claim 46.

ii. The S450TX Brochure in view of Moffitt

Dependent claim 36 was not rejected by the Office over the S450TX Brochure in view of Moffitt. Applicant has amended independent claim 35 by incorporating the recitations of now cancelled dependent claim 36. For this reason it is unnecessary to address the rejection of claim 35 over the S450TX Brochure in view of Moffitt.

Claims 42-44

i. Ulinski in view of the S450TX Brochure

Independent claim 42 recites a compact tool carrier having a first linkage, second linkage and actuator, with each of the first linkage, second linkage, and actuator forming a pivot point with the loader (see pivot points P4, P5, P6 in Figure 5 above). As amended, claim 42 recites that each of the first linkage pivot point, second linkage pivot point and actuator pivot point are disposed *completely* forward of the operator platform as the loader travels from the down position to the vertically raised position.

The basis for the Office's rejection of independent claim 42 over Ulinski in view of the S450TX Brochure is that "all of Ulinski's pivot points are located forward of at least the

rearward-most point of the platform in all positions of operations (see Figs. 3-5)" (page 4 of the Office action). As noted above, claim 42 as amended recites that the pivot points are disposed *completely* forward of the operator platform.

With reference to Figure 3 of Ulinski reproduced below, the rear linkage overlaps the operator platform 54 (shown in Figure 2) as the fork 16 is lifted.

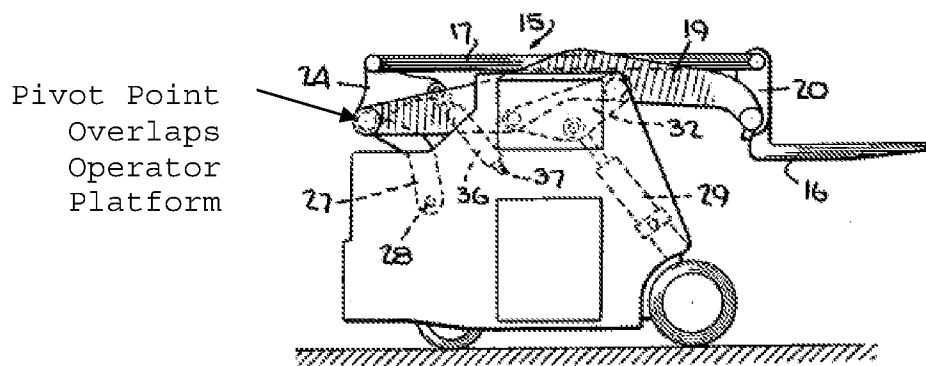


Fig. 3 of Ulinski (annotated)

One of skill in the art would not rearrange the lift of Ulinski such that the pivot point between the loader and the rear linkage 27 is completely forward of the operator platform because Ulinski '264 teaches that the leverage system "of necessity . . . must be mounted at the upper rear portion of the truck" (col. 1, lines 30-33; Emphasis added). As Ulinski '264 teaches away from moving the rear linkage forward, independent claim 42 and claims 43-44 depending therefrom are patentable over Ulinski in view of the S450TX Brochure.

ii. The S450TX Brochure in view of Moffitt

One of skill in the art would not modify the machine of the S450TX Brochure by incorporating the lift of Moffitt and by disposing the first linkage pivot point, second linkage pivot point and actuator pivot point *completely* forward of the operator platform as the loader travels from the down position to the vertically raised position because Moffitt teaches that the rear linkage should be adjacent the rear of the machine. In particular, Moffitt states that a "lower end of each control arm is pivotally connected to the frame adjacent to the rear end of the frame" (col. 1, lines 61-63; see also col. 4, lines 53-56). The Office has not articulated any reason why one of skill in the art would move the rear link forward, and especially no reason why one of ordinary skill would do so against the teaching of Moffitt.

For at least the above reasons, independent claim 42 and claims 43-44 depending therefrom are patentable over the S450TX Brochure in view of Moffitt.

CONCLUSION

Applicant respectfully requests reconsideration and allowance of all pending claims. The undersigned requests a phone call from the Examiner if this might expedite prosecution.

Applicant authorizes the Commissioner to charge any fees which may be due in connection with this Amendment C to Deposit Account No. 012384 in the name of Armstrong Teasdale LLP.

Respectfully submitted,

/Michael J. Vander Molen/

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	03/07/2016	Brad Thomas	31681-41	8886

76656 7590 04/26/2017

Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MO 63105

EXAMINER

KRAMER, DEAN J

ART UNIT	PAPER NUMBER
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3652

NOTIFICATION DATE	DELIVERY MODE
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04/26/2017

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

Office Action Summary	Application No. 15/062,801	Applicant(s) THOMAS ET AL.	
	Examiner DEAN KRAMER	Art Unit 3652	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/3/17.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 21-44 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 21-44 is/are rejected.
- 8) ☒ Claim(s) 32 is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some** c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____.
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 4) ☐ Other: ____.

DETAILED ACTION

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/3/17 has been entered.

Claim Objections

2. Claim 32 objected to because of the following informalities: In the last line of claim 32, it appears that the term "loaded" should be changed to --loader--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 39 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the

Art Unit: 3652

subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

There is no clear antecedent basis for "D5" as recited in the last line of claim 39.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 21-44, as understood, is/are rejected under 35 U.S.C. 103 as being unpatentable over Ulinski (3,074,572) in view of the Vermeer S450TX Mini Skid Steer documents submitted on the IDS received 4/5/17.

Ulinski shows a compact tool carrier comprising a pair of loader arm assemblies (19,24,32), a tool (16), a mainframe (10), a linkage assembly (27,32), actuators (36,29), and a control station with a platform (54). The Ulinski patent does not specifically disclose the mass of its vehicle being less than 1500kg as is called for in claim 21 of the instant application.

However, the documents included on the IDS submitted by applicant on 4/5/17 describe the Vermeer S450TX Mini Skid Steer as having a weight of 1043 kilograms. The Vermeer S450TX Mini Skid Steer also shows its drive mechanism as tracks.

It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to form Ulinski's vehicle less than 1043 kilograms in

weight, as taught by the Vermeer S450TX Mini Skid Steer documents submitted on the IDS received 4/5/17, in order to create a generally lightweight structure.

Regarding claims 22, 29, and 41, it would have been a matter of obvious engineering design choice to form the mainframe, linkage, or loader arms as a one-piece construction. *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349(CCPA 1965) (A claim to a fluid transporting vehicle was rejected as obvious over a prior art reference which differed from the prior art in claiming a brake drum integral with a clamping means, whereas the brake disc and clamp of the prior art comprise several parts rigidly secured together as a single unit. The court affirmed the rejection holding, among other reasons, “that the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice”).

In regard to claims 35-41, the distances between the pivot points of the various links or actuators and the drive shaft are not specified in the Ulinski patent. However, it would have been obvious to design the positions of these pivot points as low as possible in order to improve the sightlines of a user standing on the platform and to form the most compact vehicle size for operating in confined spaces.

Regarding claims 42-44, all of Ulinski’s pivot points are located forward of at least the rearward-most point of the platform in all positions of operations (see Figs. 3-5).

7. Claims 21-35 and 37-44, as understood, is/are rejected under 35 U.S.C. 103 as being unpatentable over the Vermeer S450TX Mini Skid Steer documents submitted on the IDS received 4/5/17 in view of Moffitt et al. (5,609,464).

The Vermeer S450TX Mini Skid Steer documents submitted on the IDS received 4/5/17 show a compact tool carrier having its loader arm directly pivoted to its mainframe.

The Moffitt et al. patent shows a compact vehicle comprising a loader (32) connected to its mainframe through actuators (74) and a series of links (64,42). This arrangement allows a working tool (30) attached to the distal ends of the loader to pivot to higher vertical positions (see Figs. 2 and 6).

It would have been obvious to a person having ordinary skill in the art to indirectly mount the loader arms of the Vermeer S450TX Mini Skid Steer to its mainframe through a series of links and actuators, similar to the arrangement shown in the Moffitt et al. patent, as an alternative yet functionally equivalent means of allowing a distally mounted tool to swing to greater heights. The resulting pivot points on the mainframe would obviously need to be positioned below the sightlines of a user standing on the platform of the carrier.

Regarding claims 22, 29, and 41, it would have been a matter of obvious engineering design choice to form the mainframe, linkage, or loader arms as a one-piece construction. *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349(CCPA 1965) (A claim to a fluid transporting vehicle was rejected as obvious over a prior art reference which differed from the prior art in claiming a brake drum integral with a clamping

Art Unit: 3652

means, whereas the brake disc and clamp of the prior art comprise several parts rigidly secured together as a single unit. The court affirmed the rejection holding, among other reasons, “that the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice”).

In regard to claims 35 and 37-41, the distances between the pivot points of the various links or actuators and the drive shaft are not specified in the Moffitt et al. patent. However, in the combination suggested above it would have been obvious to design the positions of the resulting pivot points as low as possible in order to improve the sightlines of a user standing on the platform and to form the most compact vehicle size for operating in confined spaces.

Response to Arguments

8. Applicant’s arguments with respect to claims 1-20 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Design patents to Rayner (Des. 359,497) and Porter (Des. 431,574) show compact tool carriers having a platform on which a user stands during operation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEAN KRAMER whose telephone number is (571)272-6926. The examiner can normally be reached on Monday-Friday.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saul Rodriguez can be reached on (571) 272-7097. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DEAN KRAMER/
Primary Examiner, Art Unit 3652

djk
4/20/17

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Brad Thomas et al. Art Unit: 3652
Serial No.: 15/062,801
Filed On: March 7, 2016
Confirmation No.: 8886
For: LOW PROFILE COMPACT TOOL CARRIERS
Examiner: Dean J. Kramer

April 5, 2017

NOTICE OF CONCURRENT PROCEEDINGS

The patent granted from the parent application, U.S. Patent No. 9,321,386, is involved in the following litigation:

- *Vermeer Corporation v. The Toro Company*, Case No. 4:17-cv-00076-CRW-HCA (S.D. IA. filed February 28, 2017)

A third party Request for Ex Parte Reexamination of U.S. Patent No. 9,321,386 has been assigned the following serial number:

- Serial No. 90/013,915 (filed February 28, 2017).

Respectfully submitted,

/Michael J. Vander Molen/

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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL (Submitted Only via EFS-Web)

Application Number	15062801	Filing Date	2016-03-07	Docket Number (if applicable)	31681-41	Art Unit	3652
First Named Inventor	Brad Thomas			Examiner Name	Dean J. Kramer		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, to any international application that does not comply with the requirements of 35 U.S.C. 371, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV.

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to
Deposit Account No 012384

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

Signature of Registered U.S. Patent Practitioner			
Signature	Michael J. Vander Molen/	Date (YYYY-MM-DD)	2017-04-03
Name	Michael J. Vander Molen	Registration Number	57274

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

REMARKS

Applicant has cancelled claims 1-20 and added claims 21-43. Claims 21-43 are currently pending.

The Office action of November 4, 2016 has been carefully reviewed and the following remarks are made in response.

Interview Summary

The undersigned attorneys of record thank the Examiner for the courteous telephone interview of March 27. The Examiner, the undersigned attorneys, and Scott Rempe (Reg. No. 47,018) agent for Applicant, took part in the interview. The pending claims and prior art of record (e.g., Yasuda, Bares) were discussed. Potential amendments that would overcome the outstanding rejections were also discussed. Applicant agreed to present the amendment and further arguments in a response filed with a Request for Continued Examination for consideration by the Examiner.

Objection to the Specification

Applicant has amended paragraph [0021] of the application as requested by the Examiner on page 6 of the Office action.

Rejections under 35 U.S.C. §103(a)

The Office rejected claims 1-8, 10-13 and 15-20 (now cancelled) under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 8,821,104 to Yasuda et al. ("Yasuda") in view of U.S. Patent No. 6,695,568 to Bares et al. ("Bares"). Alternatively, claims 1-8, 10-13 and 15-20 were rejected under 35 U.S.C.

§103(a) as being obvious over Bares in view of Yasuda. Claims 9 and 14 (now cancelled) are rejected under 35 U.S.C. §103(a) as being obvious over Yasuda in view of Bares in further view of U.S. Patent Pub. No. 2009/0116943 to Valere ("Valere"). Alternatively, claims 9 and 14 are rejected under 35 U.S.C. §103(a) as obvious over Bares in view of Yasuda and in further view of Valere. Applicant submits that new claims 21-43 are patentable over the cited references for the reasons set forth below.

Yasuda in view of Bares

With reference to Figure 3 of the application (reproduced below) in which an example compact tool carrier is shown, independent claim 21 recites a compact tool carrier 5 configured for standing operator control and having a mass of less than 1500 kg.

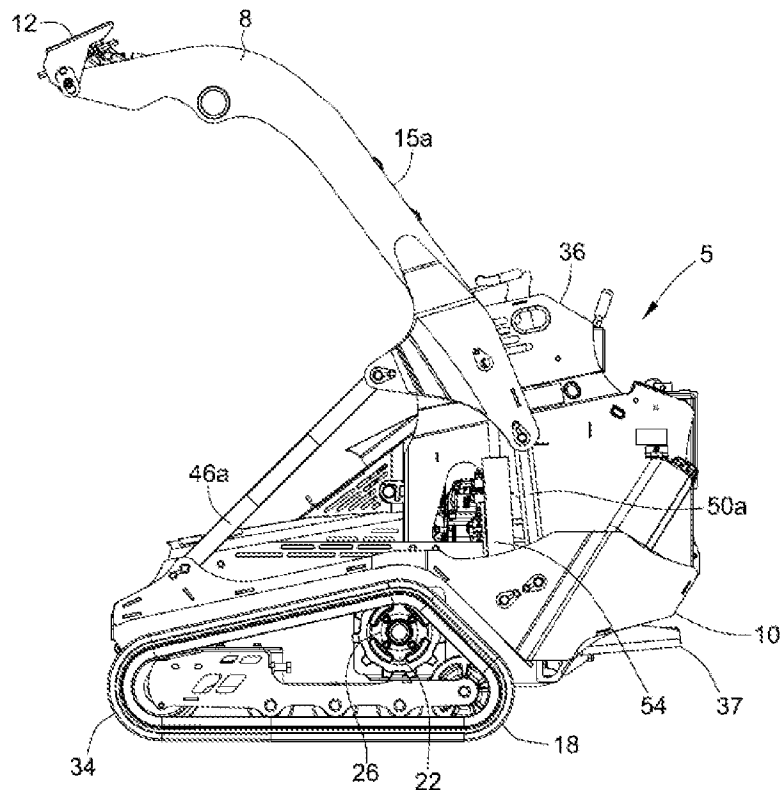


Fig. 3 of the Application

The compact tool carrier 5 includes a loader 8 having an arm 15a that is adapted to carry a tool. The carrier 5 includes a mainframe 10 for supporting the loader 8 with the mainframe 10 having a first side and a second side. The loader 8 is free from direct attachment to the mainframe 10. A linkage (46a or 50a) is pivotally attached to the first side of the mainframe 10 and pivotally attached to the loader arm 15a. An actuator 54 is pivotally attached to the first side of the mainframe 10 and pivotally attached to the loader arm 15a. A control station 36 has operator controls for propelling the compact tool carrier 5 forward and for raising and lowering the loader 8. The control station 36 is mounted toward the rear of the compact tool

carrier 5. The compact tool carrier 5 includes an operator platform 37 for standing operation of the operator controls 36 of the control station. An engine is disposed forward of the operator platform 37.

The Office's rationale as to why the previous claims were obvious over Yasuda in view of Bares is set forth on page 3 of the Office action:

[i]t would have been obvious to one of ordinary skill in the art . . . to form the control station of the Yasuda et al. carrier at the rear portion of its mainframe, similar to that shown in the Bares et al. patent, so that an operator could walk behind the resulting vehicle while controlling its movement.

One of skill in the art would not modify Yasuda to arrive at the compact tool carrier recited in independent claim 21. For example, claim 21 recites an engine that is disposed forward of the operator platform. One of skill in the art would not modify the skid steer of Yasuda as suggested by the Office as this would require the engine to be moved from the rear of the machine and that the operator be positioned outside of the protective cage.

As shown in Figure 6 of Yasuda, the engine 101 is mounted to an elongate member 28 at the rear of the "frame main body 9" (col. 8, lines 37-57). A partition plate 80, bottom wall body 58, and back wall body 51 shield the operator from the heat of the engine 101 (col 27, lines 38-49).

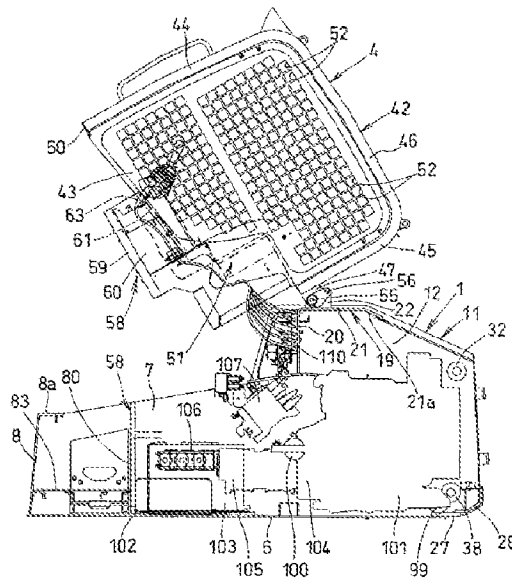


Fig. 21 of Yasuda

One of skill in the art would not modify Yasuda by placing the operator controls near the engine 101. As stated in Yasuda, it is important to isolate the operator from the engine:

[0236] By the partition plate 80 and the bottom wall body 58 and back wall body 51 of the cabin 4, the portions frontward of the back wall body 51 of the cabin 4 and the front portion of the body frame 1 are shielded from the rear portion of the body frame 1 on which the engine 101 is mounted. Therefore, heated air from the engine 101 in the rear portion of the body frame 1 can be surely blocked by the partition plate 80 and the bottom wall body 8 and back wall body 51 of the cabin 4. Accordingly, the heated air from the engine 101 never reach the driver in the cabin 4 who is seated on the driver's seat 63 or driver's legs or

the like extending in the body frame 1, and the driver can be **surely protected from the heat of the engine.**

Yasuda, Col. 27, lines 38-49, emphasis added.

To move the engine forward of an operator platform in Yasuda would cause an operator standing on the platform to be exposed to the heat of the engine which would be a change in the principle of operation of the apparatus. MPEP 2143.01(VI)) Further, moving the engine from the rear of the apparatus would change the weight distribution of the apparatus which may cause undesired consequences, such as making the apparatus less stable and more prone to tip.

Indeed, the Office acknowledged in the parent patent application (U.S. Patent Application No. 14/691,649, now U.S. Patent No. 9,321,386) that Yasuda "requires its engine to be located at the rear of the mainframe away from the cabin (4)" (see the Office's January 22, 2016 Interview Summary). As independent claim 21 recites that the engine is disposed forward of the operator platform, independent claim 21 and claims depending therefrom are patentable over Yasuda in view of Bares. In regard to Valere which is cited by the Office to reject several of the dependent claims, Valere does not cure the deficiencies of Yasuda in view of Bares noted above.

Independent claim 35 also recites that the engine be disposed forward of an operator platform. Claim 35 and claims depending therefrom are patentable over Yasuda in view of Bares for at least the same reasons set forth above relating to independent claim 21.

Independent claim 41 recites, in part, a compact tool carrier having a first linkage pivotally attached to the loader at a first linkage pivot point, a second linkage pivotally attached to the loader at a second linkage pivot point and an actuator pivotally attached to the loader at an actuator pivot point. In the raised position of the loader, each of the first linkage pivot point, the second linkage pivot point and the actuator pivot point are disposed forward of the operator platform in the vertically raised position. Neither Yasuda nor Bares disclose a machine having a first linkage pivot point, a second linkage pivot point and an actuator pivot point with each of these pivot points being forward of the position at which an operator operates the machine (see, for example, Figure 1 of Yasuda and Figure 3 of Bares). Independent claim 41 and claims depending therefrom are patentable over Yasuda in view of Bares for at least this reason.

Bares in view of Yasuda

One page 4 of the Office action, the Office indicates that, alternatively, it would be obvious to pivotally attach the loader arms of Bares to its mainframe through an actuator and linkage as shown in Yasuda "in order to create a more versatile device that could maneuver a tool attached to its load arms in farther reaching positions." Applicant disagrees with the conclusion of the Office that the purported combination would be obvious.

AS shown in Figure 2 of Bares, reproduced below, Bares' loader 10 is attached to upright supports 22 at pivot 21.

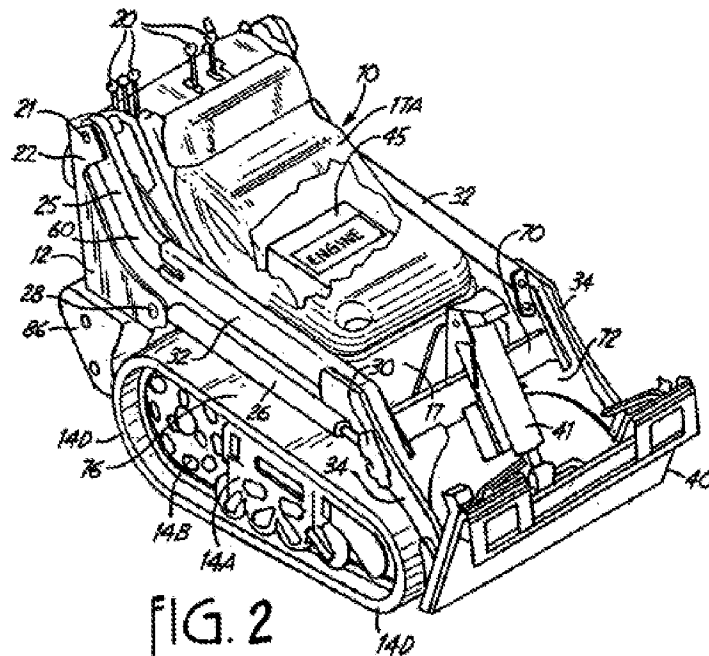


Fig. 2 of Bares

The pivot 21 is in relatively close proximity to controls 20 and to where the operator is positioned during operation of the apparatus. To substitute the lift assembly of Yasuda for the assembly of Bares as suggested by the Office would cause the rear linkage to extend upward from the pivot 21 and be positioned in close proximity to the operator and the operator controls. In the lift profile of Yasuda, the upper portion of the rear linkage 81 (e.g., near the first arm shaft 88) moves forward and back as the loader is raised and lowered (see Figures 1 and 2 of Yasuda below).

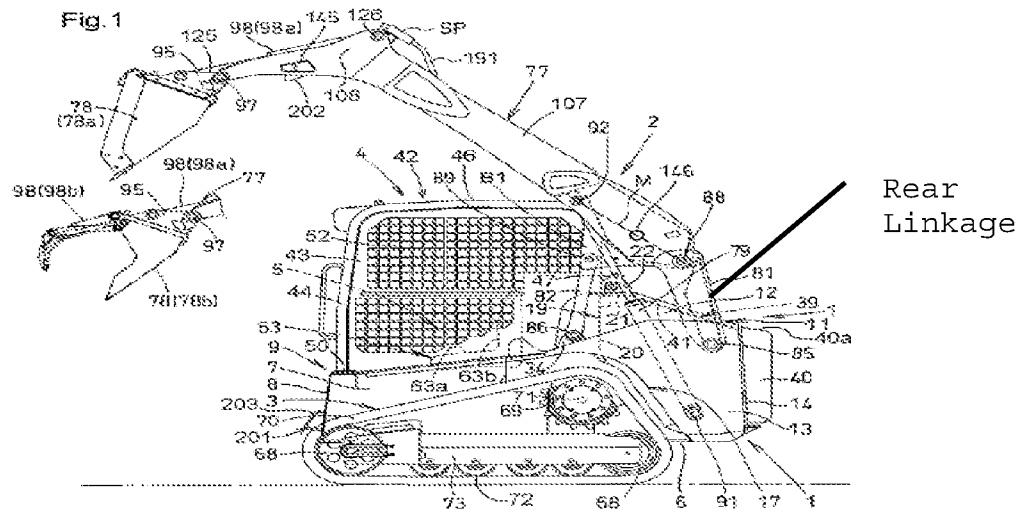


Fig. 2 of Yasuda (marked-up)

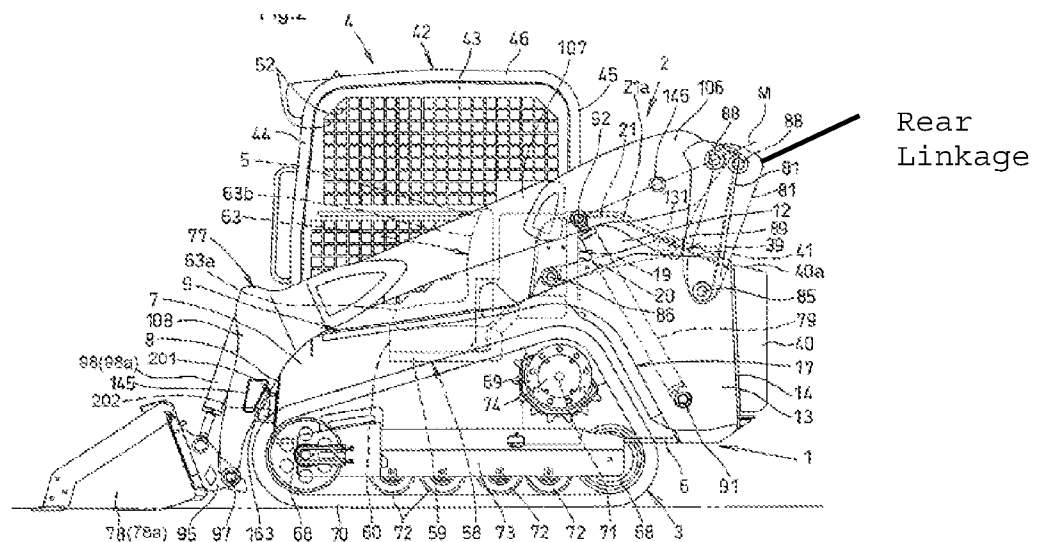


Fig. 2 of Yasuda (marked-up)

Once substituted onto the machine of Bares, the upper portion of the rear linkage near the first arm shaft 88 would move longitudinally near where the operator's hands are positioned to operate the controls which creates hazards, such as multiple pinch points, for the operator. One of skill in the art would

not position a linkage near the operator because this would expose the operator to greater risk of injury. Further, due to the reduced size of the walk-behind machine of Bares relative to standard size skid steers, one of skill in the art would not expect that the loader lift arrangement of Yasuda having two linkages and an actuator could be used on a machine such as Bares without positioning at least one of the linkages or actuator in close proximity to the operator. For at least this reason one of skill in the art would not include the lift mechanism of Yasuda on the machine of Bares.

Further, Bares is designed to increase side-to-side visibility:

[0001] The present invention relates to a small loader that is manually operated by a standing operator at the rear of the loader. The loader has a low lift arm profile, so that an operator standing at the rear of the loader can see the work area. **The low profile lift arms aid side-to-side visibility.**

* * * * *

[0005] The present invention relates to a small self-propelled loader that is designed for operation by an operator standing at the rear of the loader, and which has forwardly extending lift arms that have center portions that are **formed downwardly** to have **side portions at a low level, closely adjacent to the top of the components that are used for driving**. The dropped or lowered side portions permit easy access to

the center of the machine frame when the arms are lowered, **and also keeps a low profile of the side portions of the arms they raise to insure good side-to-side visibility for the operator.**

* * * * *

[0008] **The lift arms taper downwardly from the pivot points to a position along the sides of the machine,** and in the form shown extend forwardly substantially parallel to the top lengths of the tracks used for driving the machine. The forward ends of the lift arms then are recessed on the lower side so that they **curve downwardly around the rounded forward ends of the tracks,** where the tracks go over a front sprocket or guide wheel. When in a lowered position, the forward ends of the lift arms will support a bucket on the ground or support surface over which the tracks are moving.

Bares, col. 1, emphasis added.

As shown in Figures 1 and 2 of Yasuda reproduced above, the linkages and actuator of Yasuda extend upward and partially above the body frame 1 in both the down and vertically raised positions of the loader. To modify Bares by including linkages and actuators that extend upward from the frame to support the loader renders Bares unsuitable for its intended purpose of providing side-to-side visibility. Indeed, Bares formed the loader arms thereof to taper and curve downwardly to lower the profile of the

arms to provide such visibility (See paragraph [0008] and claim 1). To raise the profile of the loader by including one or more linkages would render such a loader arm design useless. "If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." MPEP §2143.01(V). For at least this reason, one of skill in the art would not modify Bares by using the lift assembly of Yasuda.

In regard to Valere which is cited by the Office to reject several of the dependent claims, Valere does not cure the deficiencies of Bares in view of Yasuda noted above.

Inasmuch as independent claim 35 also recites a compact tool carrier with a loader being free from direct attachment to the mainframe, independent claim 35 and claims depending therefrom are patentable over Bares in view of Yasuda for the reasons set forth above relating to claim 21.

In regard to independent claim 41, as stated above, neither Yasuda nor Bares disclose a machine having a first linkage pivot point, a second linkage pivot point and an actuator pivot point with each of the pivot points being forward of the position at which an operator operates the machine. Claim 41 and claims depending therefrom are patentable over Bares in view of Yasuda for at least this reason.

Valere

The Examiner noted during the March 27 interview that Valere includes an engine disposed forward of an operator platform. One of skill in the art would not modify the apparatus of Valere by substituting its loader arrangement for the loader arrangement of Yasuda because Valere indicates that its loader arrangement is needed to stabilize the machine (see paragraph [0025], lines 1-6). For at least this reason, one of skill in the art would not modify Valere by using the lift assembly of Yasuda.

CONCLUSION

Applicant respectfully requests reconsideration and allowance of this application. The undersigned request a telephone call from the Examiner if this might expedite allowance.

Applicant authorizes the Commissioner to charge any fees which may be due in connection with this Amendment B to Deposit Account No. 012384 in the name of Armstrong Teasdale LLP.

Respectfully submitted,

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MJV/MGM/asb

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0021] with the following rewritten paragraph:

-- [0021] The compact tool carrier 5 includes a drive mechanism 18 attached to the mainframe 10. In the illustrated embodiment, the drive mechanism 18 is directly mounted (i.e., connected without intermediary parts) to the mainframe 10 by way of drive sprocket 22 connected to a hub 26 (Fig. 2). The hub 26 is attached to a shaft (not shown) that extends through a drive opening 30 (Fig. 4) of the mainframe 10. The sprocket 22, hub 26 and shaft (not shown) rotate about a rotational axis R (Fig. 5). As shown, the drive mechanism 18 includes tracks 34. In other embodiments, the drive mechanism 18 ~~[[10]]~~ includes wheels. --

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1-20. (Cancelled)

21. (New) A compact tool carrier configured for standing operator control and having a longitudinal axis and a mass of less than about 1500 kg, the compact tool carrier comprising:

a loader having an arm, the loader being adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a linkage pivotally attached to the first side of the mainframe and pivotally attached to the loader arm;

an actuator pivotally attached to the first side of the mainframe and pivotally attached to the loader arm;

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward of the operator platform relative to the longitudinal axis.

22. (New) The compact tool carrier as set forth in claim 21 wherein the mainframe incorporates a single weldment.

23. (New) The compact tool carrier as set forth in claim 21 wherein the loader arm is a first loader arm and the linkage is a first linkage, the loader comprising a second loader arm and the compact tool carrier comprising a second linkage pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

24. (New) The compact tool carrier as set forth in claim 23 wherein the actuator is a first actuator, the compact tool carrier comprising a second actuator, the second actuator being pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

25. (New) The compact tool carrier as set forth in claim 21 comprising a drive mechanism comprising tracks or wheels, the drive mechanism being attached to the mainframe.

26. (New) The compact tool carrier as set forth in claim 21 comprising a drive mechanism propelled by the engine.

27. (New) The compact tool carrier as set forth in claim 21 wherein the linkage is pivotally attached to the first side of the mainframe at a linkage pivot point, the linkage pivot point being (1) disposed between the operator controls and a bottom of the mainframe or (2) disposed forward of the control station.

28. (New) The compact tool carrier as set forth in claim 27 wherein the actuator is pivotally attached to the first side of the mainframe at an actuator pivot point, the actuator pivot point being (1) disposed between the operator controls and a bottom of the mainframe or (2) disposed forward of the control station.

29. (New) The compact tool carrier as set forth in claim 21 wherein the loader arm incorporates a single weldment.

30. (New) The compact tool carrier as set forth in claim 21 wherein a single linkage is attached to the first side of the mainframe and pivotally attached to the loader arm.

31. (New) The compact tool carrier as set forth in claim 21 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

32. (New) The compact tool carrier as set forth in claim 21 wherein the linkage is a first linkage, the compact tool carrier further comprising a second linkage pivotally attached to the first side of the mainframe and pivotally attached to the loader arm.

33. (New) The compact tool carrier as set forth in claim 32 wherein the first linkage is pivotally attached to the first side of the mainframe at a first linkage pivot point, the second linkage being pivotally attached to the first side of the mainframe at a second linkage pivot point, the first and second linkage pivot points each being (1) disposed between the

operator controls and a bottom of the mainframe or (2) disposed forward of the control station.

34. (New) A method for operating the compact tool carrier as set forth in claim 21, the method comprising standing on the operator platform and operating the control station to propel the compact tool carrier forward and/or raise or lower the loader.

35. (New) A compact tool carrier having a longitudinal axis and comprising:

a loader adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a linkage pivotally attached to the first side of the mainframe at a first pivot point and pivotally attached to the loader at a second pivot point;

an actuator pivotally attached to the first side of the mainframe at a third pivot point and pivotally attached to the loader at a fourth pivot point;

a drive mechanism for propelling the compact tool carrier over a supporting surface, the drive mechanism having a drive shaft defining a rotational axis R, the compact tool carrier having a bottom at which the drive mechanism contacts the supporting surface, the rotational axis R and the bottom of the compact tool carrier being separated by a vertical distance D1,

the rotational axis R and each of the first and third pivot points being separated by a vertical distance, the vertical distance between the rotational axis R and the first pivot point being less than 1.5 times D1, the vertical distance between the rotational axis R and the third pivot point also being less than 1.5 times D1;

a control station having operator controls for propelling the compact tool carrier forward and for raising and/or lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward of the operator platform relative to the longitudinal axis.

36. (New) The compact tool carrier as set forth in claim 35 wherein the linkage is a first linkage, the compact tool carrier further comprising a second linkage pivotally attached to the first side of the mainframe at a fifth pivot point and pivotally attached to the loader at a sixth pivot point, the rotational axis R and the fifth pivot point being separated by a vertical distance, the vertical distance between the rotational axis R and the fifth pivot point being less than 1.5 times D1.

37. (New) The compact tool carrier as set forth in claim 35 wherein the second side of the mainframe comprises at least two pivot points, each vertical distance between the rotational axis R and the respective pivot point being less than 1.5 times D1.

38. (New) The compact tool carrier as set forth in claim 35 wherein the rotational axis R and a bottom of the first side of the mainframe are separated by a vertical distance D5, the first side of the mainframe comprising a forward-most pivot point, the first pivot point or the third pivot point being the forward-most pivot point, the vertical distance between the rotational axis R and the forward-most pivot point being less than twice D5.

39. (New) The compact tool carrier as set forth in claim 35 wherein the first side of the mainframe comprises a top-most pivot point, the first pivot point or the third pivot point being the top-most pivot point, the top most pivot point and a top of the first side of the mainframe being separated by a vertical distance D6, D6 being less than about 1.5 times D5.

40. (New) The compact tool carrier as set forth in claim 35 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

41. (New) The compact tool carrier as set forth in claim 35 wherein the mainframe incorporates a single weldment.

42. (New) A compact tool carrier comprising:

a loader adapted to carry a tool, the loader being moveable between a down position and a vertically raised position;

a first linkage pivotally attached to the loader at a first linkage pivot point;

a second linkage pivotally attached to the loader at a second linkage pivot point

an actuator pivotally attached to the loader at an actuator pivot point;

a drive mechanism comprising tracks;

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader; and

an operator platform for standing operation of the operator controls of the control station, the operator platform being located toward the rear of the compact tool carrier such that each of the first linkage pivot point, the second linkage pivot point and the actuator pivot point are disposed forward of the operator platform in the vertically raised position.

43. (New) The compact tool carrier as set forth in claim 42 wherein each of the first linkage pivot point, the second linkage pivot point and the actuator pivot point are disposed forward of the operator platform as the loader travels from the down position to the vertically raised position.

44. (New) The compact tool carrier as set forth in claim 42 wherein each of the first linkage pivot point, the second linkage pivot point and the actuator pivot point are disposed below the operator controls of the control station in the down position.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Brad Thomas et al. Art Unit: 3652
Serial No.: 15/062,801
Filed On: March 7, 2016
Confirmation No.: 8886
For: LOW PROFILE COMPACT TOOL CARRIERS
Examiner: Dean J. Kramer

April 3, 2017

AMENDMENT B

TO THE COMMISSIONER FOR PATENTS,
SIR:

Please enter the following amendments and consider the following remarks submitted concurrently with a Request for Continued Examination (RCE):

Amendments to the Claims are reflected in the Listing of Claims which begins on page 2;

Amendments to the Specification begin on page 9; and

Remarks begin on page 10.



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	03/07/2016	Brad Thomas	31681-41	8886

76656 7590 03/31/2017

Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
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St. Louis, MO 63105

EXAMINER

KRAMER, DEAN J

ART UNIT	PAPER NUMBER
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3652

NOTIFICATION DATE	DELIVERY MODE
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03/31/2017

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

<i>Applicant-Initiated Interview Summary</i>	Application No.	Applicant(s)		
	15/062,801	THOMAS ET AL.		
	Examiner	Art Unit	AIA (First Inventor to File) Status	Page
	DEAN KRAMER	3652	Yes	1 of 1

All participants (applicant, applicant's representative, PTO personnel):

1. DEAN KRAMER (Primary Examiner); Telephonic
2. Michael J. Vander Molen (Attorney of Record); Telephonic
3. Michael Munsell (Attorney of Record); Telephonic

Date of Interview: 27 March 2017

Claim(s) discussed: A1, B1, 42

Identification of prior art discussed: all of record (generally)

Amendment Proposed: Applicant proposed amendments to claim 1 and a newly presented claim 42.

Issues Discussed:

Proposed Amendments:

Discussed proposed changes to claim 1 adding an engine disposed forward relative to an operator platform. The examiner pointed out that the Valere publication (2009/0116943) shows a platform (4) at the very rear of its vehicle such that every other part of the vehicle (including the engine) must be located forward relative thereto. Also discussed a newly presented claim 42 (see attachment). The attorneys of record explained how the linkages and actuator are pivotally attached to the loader of the instant invention in a manner not fairly taught or suggested by the prior art.

Attachment(s): Proposed Amendments

/DEAN KRAMER/ Primary Examiner, Art Unit 3652	
Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable time limit of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview. Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised. Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicant's responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04 Please further see: MPEP 713.04 Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b) 37 CFR § 1.2 Business to be transacted in writing	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Brad Thomas et al. Art Unit: 3652
Serial No.: 15/062,801
Filed On: March 7, 2016
Confirmation No.: 8886
For: LOW PROFILE COMPACT TOOL CARRIERS
Examiner: Dean J. Kramer

**** DRAFT CLAIMS FOR MARCH 27 INTERVIEW ****

Do Not Enter into File Wrapper

A1. (New) A compact tool carrier configured for standing operator control and having a longitudinal axis and a mass of less than about 1500 kg, the compact tool carrier comprising:

a loader having an arm, the loader being adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a linkage pivotally attached to the first side of the mainframe and pivotally attached to the loader arm;

an actuator pivotally attached to the first side of the mainframe and pivotally attached to the loader arm;

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward of the operator platform relative to the longitudinal axis.

B1. (New) A compact tool carrier having a longitudinal axis and comprising:

a loader adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader being free from direct attachment to the mainframe;

a linkage pivotally attached to the first side of the mainframe at a first pivot point and pivotally attached to the loader at a second pivot point;

an actuator pivotally attached to the first side of the mainframe at a third pivot point and pivotally attached to the loader at a fourth pivot point;

a drive mechanism for propelling the compact tool carrier over a supporting surface, the drive mechanism having a drive shaft defining a rotational axis R, the compact tool carrier

having a bottom at which the drive mechanism contacts the supporting surface, the rotational axis R and the bottom of the compact tool carrier being separated by a vertical distance D1, the rotational axis R and each of the first and third pivot points being separated by a vertical distance, the vertical distance between the rotational axis R and the first pivot point being less than 1.5 times D1, the vertical distance between the rotational axis R and the third pivot point also being less than 1.5 times D1;

a control station having operator controls for propelling the compact tool carrier forward and for raising and/or lowering the loader, the control station being mounted toward the rear of the compact tool carrier;

an operator platform for standing operation of the operator controls of the control station; and

an engine disposed forward the operator platform relative to the longitudinal axis.

42. (New) A compact tool carrier comprising:

a loader adapted to carry a tool, the loader being moveable between a down position and a vertically raised position;

a first linkage pivotally attached to the loader at a first linkage pivot point;

a second linkage pivotally attached to the loader at a second linkage pivot point

an actuator pivotally attached to the loader at an actuator pivot point;

a drive mechanism comprising tracks;

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader; and

an operator platform for standing operation of the operator controls of the control station, the operator platform being located toward the rear of the compact tool carrier such that each of the first linkage pivot point, the second linkage pivot point and the actuator pivot point are disposed forward to the operator platform in the vertically raised position.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	03/07/2016	Brad Thomas	31681-41	8886

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Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MO 63105

EXAMINER

KRAMER, DEAN J

ART UNIT	PAPER NUMBER
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3652

NOTIFICATION DATE	DELIVERY MODE
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11/04/2016

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

Office Action Summary	Application No. 15/062,801	Applicant(s) THOMAS ET AL.	
	Examiner DEAN KRAMER	Art Unit 3652	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/14/16.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 1-20 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-20 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☒ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some** c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☐ Notice of References Cited (PTO-892) | 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____. | 4) ☐ Other: ____. |

DETAILED ACTION

The amendment filed October 14, 2016 and the remarks presented therewith have been carefully considered. However, they are not deemed to be fully persuasive. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 103

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 10-13, and 15-20 are rejected under 35 U.S.C. 103 as being unpatentable over Yasuda et al. (8,821,104) in view of Bares et al. (6,695,568).

Alternatively, claims 1-8, 10-13, and 15-20 are rejected under 35 U.S.C. 103 as being unpatentable over Bares et al. (6,695,568) in view of Yasuda et al. (8,821,104).

The patent to Yasuda et al. shows a compact tool carrier comprising a loader (2,77,78), a mainframe (1), a drive wheel (69) attached to the mainframe about a rotational axis (71), an actuator (79) pivoted to the mainframe at point (91), and linkage (81,82) pivoted to the mainframe at points (85,86). The Yasuda et al. loader arms (77) are not directly attached to the mainframe. The Yasuda et al. carrier does not show its control station mounted to the rear of the mainframe for walk-behind operation as is called for in the above claims.

However, the patent to Bares et al. shows a low profile carrier substantially similar to the Yasuda et al. device, but the Bares et al. carrier includes a control station (20) at the rear portion of its mainframe for allowing an operator to walk behind during use. It is noted that while the position of the control stations in Bares et al. and Yasuda et al. are different, both of these patents are similarly directed to vehicles having load-handling tools pivotally attached thereto wherein the attached tools are operated through actuators and linkages.

It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to form the control station of the Yasuda et al. carrier at the rear portion of its mainframe, similar to that shown in the Bares et al. patent, so that an operator could walk behind the resulting vehicle while controlling its movement. This rear-mounted control station would result in a more compact and lighter weight assembly (e.g. having a mass less than 1500 kg.) enabling better maneuverability over certain terrain and in congested spaces.

In the alternative, it would have been obvious to a person having ordinary skill in the art before the effective filing date of the claimed invention to pivotally attach the Bares et al. loader arms (32) to its mainframe through an actuator and linkage similar to that shown in the Yasuda et al. patent in order to create a more versatile device that could maneuver a tool attached to its load arms in farther reaching positions. It is pointed out that the concerns in the Bares et al. patent regarding the pivot points being "relatively high" in order to adequately reach, the extended lengths of the linkages in the resulting combination (see linkage 81 and 82 of Yasuda et al.) would allow the pivot points to be lower while still achieving an extended reach.

Regarding claims 2, 8, and 11, it would have been a matter of obvious engineering design choice to form the mainframe, linkage, or loader arms as a one-piece construction. *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965) (A claim to a fluid transporting vehicle was rejected as obvious over a prior art reference which differed from the prior art in claiming a brake drum integral with a clamping means, whereas the brake disc and clamp of the prior art comprise several parts rigidly secured together as a single unit. The court affirmed the rejection holding, among other reasons, "that the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice.")

In regard to claims 12 and 20, the Yasuda et al. patent discloses a bucket (78a) attached to its loader arm assembly.

Response to Arguments

In response to applicant's argument that the Yasuda et al. patent is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both Yasuda et al. and Bares et al. are concerned with relative small or compact loaders that are capable of operating in small or confined areas. Both of these references are at least "reasonably pertinent" to the particular problems associated with handling loads over potentially uneven terrain in tight areas and the mechanics or design considerations involved therewith.

4. Claims 9 and 14 are rejected under 35 U.S.C. 103 as being unpatentable over Yasuda et al. in view of Bares et al. as applied to claims 1-8, 10-13, and 15-20 above, and further in view of Valere (2009/0116943). Alternatively, claims 9 and 14 are rejected under 35 U.S.C. 103 as being unpatentable over Bares et al. (6,695,568) in view of Yasuda et al. (8,821,104) as applied to claims 1-8, 10-13, and 15-20 above, and further in view of Valere (2009/0116943).

Valere shows a compact tool carrier having a platform (4) mounted at the rear of the carrier on which a user can stand during operation.

It would have been obvious to a person having ordinary skill in the art to mount a platform below the control station of the modified Yasuda et al. device (or the modified

Bares et al. device), as was presented above in section 7, similar to that shown in the Valere publication so that an operator would not have to laboriously walk behind the carrier during use.

Specification

5. The disclosure is objected to because of the following informalities: In the last line of paragraph [0021], the number “10” should be changed to –18--. Appropriate correction is required.

Conclusion

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEAN KRAMER whose telephone number is (571)272-6926. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saul Rodriguez can be reached on (571) 272-7097. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DEAN KRAMER/
Primary Examiner, Art Unit 3652

djk
10/31/16

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Brad Thomas
Serial No.: 15/062,801
Filed On: March 7, 2016
Confirmation No.: 8886
For: LOW PROFILE COMPACT TOOL CARRIERS
Examiner: Dean J. Kramer

Art Unit: 3652

October 6, 2016

AMENDMENT A

TO THE COMMISSIONER FOR PATENTS,

SIR:

In response to the non-final Office Action dated April 15, 2016, please enter the following amendments and consider the following remarks:

Amendments to the Specification begin on page 2;

Amendments to the Claims are reflected in the Listing of Claims which begins on page 5; and

Remarks begin on page 10.

AMENDMENTS TO THE SPECIFICATION

Please replace the abstract of the application with the following rewritten abstract:

ABSTRACT

Compact tool carriers having a loader mounted to a low-profile mainframe are disclosed. In some embodiments, the pivot points of the mainframe about which the loader is pivoted are low relative to the mainframe to reduce the mainframe size and to lower the center of gravity to improve the stability of the compact tool carrier during use.

* * * * *

Please replace paragraph [0025] of the application with the following rewritten paragraph:

[0025] The mainframe 10 includes a first side 38a and a second side 38b generally opposite the first side 38a. As used herein, the term "mainframe" generally refers to a single weldment to which the loader 8 is attached, optionally through one or more pivotal linkages. The mainframe 10 includes bracket portions 40a, 40b (Fig. 4) through which various pivot linkages are attached. In the illustrated embodiment, the engine (not shown) and the drive mechanism 18 ~~[[10]]~~ comprising tracks or wheels are directly connected to the mainframe 10.

* * * * *

Please replace paragraph [0027] of the application with the following rewritten paragraph:

[0027] An actuator 54, shown as a hydraulic cylinder, is attached to the first side 38a of the mainframe 10 at its center pivot point P₂ [[P₄]] and is attached to the loader arm 15a at its center pivot point P5 to raise the loader 8. The compact tool carrier 5 may include a single actuator 54, or, as in other embodiments, a second actuator (not shown) is connected to the second side 38b (Fig. 4) of the mainframe 10 and the second arm 15b (Fig. 1). The actuator 54 is powered to raise the loader 8 and, in some embodiments, is also powered to lower the loader 8 (as opposed to a one-way actuator lowered by gravity alone).

* * * * *

Please replace paragraph [0030] of the application with the following rewritten paragraph:

[0030] In some embodiments, the mainframe 10 is characterized by a relatively low profile (i.e., the pivot points are positioned relatively low on the mainframe allowing its height to be reduced). The rotational axis R (Fig. 5) and the bottom of the compact tool carrier 5 (Fig. 2) are separated by a distance D1. Generally, the bottom of the compact tool carrier 5 corresponds to the point at which the drive mechanism 18 contacts the surface supporting the compact tool carrier 5. The rotational axis R and the forward pivot point P₁ of the first side 38a of the mainframe 10 are separated by a vertical distance D2. The rotational axis R and the rear pivot point P₃ are separated by a vertical distance D3. The rotational axis R and the central pivot point P₂ [[P₄]] are separated by a vertical distance D4. Each of D2, D3 and D4 is less than about 1.5 times

D1 ($1.5 \times D1$). In some embodiments, each of D2, D3 and D4 is less than D1 or even less than about 0.75 times D1 ($0.75 \times D1$).

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Original) A compact tool carrier configured for standing or walk-behind operator control and having a mass of less than about 1500 kg, the compact tool carrier comprising:

a loader having an arm, the loader being adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader arm not being directly attached to the mainframe;

a linkage pivotally attached to the first side of the mainframe and pivotally attached to the loader arm;

an actuator pivotally attached to the first side of the mainframe and pivotally attached to the loader arm; and

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader, the control station being mounted toward the rear of the compact tool carrier and adapted to allow for standing or walk-behind operation.

2. (Original) The compact tool carrier as set forth in claim 1 wherein the mainframe incorporates a single weldment.

3. (Original) The compact tool carrier as set forth in claim 1 wherein the loader arm is a first loader arm and the

linkage is a first linkage, the loader comprising a second loader arm and the compact tool carrier comprising a second linkage pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

4. (Original) The compact tool carrier as set forth in claim 3 wherein the actuator is a first actuator, the compact tool carrier comprising a second actuator, the second actuator being pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

5. (Original) The compact tool carrier as set forth in claim 1 comprising a drive mechanism comprising tracks or wheels, the drive mechanism being attached to the mainframe.

6. (Original) The compact tool carrier as set forth in claim 1 comprising an engine to propel a drive mechanism, the engine being attached to the mainframe.

7. (Original) The compact tool carrier as set forth in claim 1 wherein the actuator is a hydraulic cylinder.

8. (Original) The compact tool carrier as set forth in claim 1 wherein each loader arm incorporates a single weldment.

9. (Original) The compact tool carrier as set forth in claim 1 wherein the control station is mounted toward the rear of the compact tool carrier, the compact tool carrier comprising an operator platform for standing operation of the compact tool carrier, the difference between the height of the control station and the height of the platform being at least 90 cm.

10. (Original) The compact tool carrier as set forth in claim 1 wherein the control station is mounted toward the rear of the compact tool carrier, and the height of the control station from a surface supporting the compact tool carrier is at least 90 cm.

11. (Original) The compact tool carrier as set forth in claim 1 wherein a single linkage is attached to the first side of the mainframe and pivotally attached to the loader arm.

12. (Original) The compact tool carrier as set forth in claim 1 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

13. (Original) A method for operating the compact tool carrier as set forth in claim 1, the method comprising standing behind the compact tool carrier and operating the control station to propel the compact tool carrier forward and/or raise or lower the loader.

14. (Original) The method as set forth in claim 13 wherein the control station is operated while standing on an operator platform or while standing on a surface supporting the compact tool carrier.

15. (Original) A compact tool carrier comprising:

a loader adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, each side having a top and a bottom, the first side of the mainframe having at least

two pivot points relative to the loader, the loader not being directly attached to the mainframe;

a linkage pivotally attached to the first side of the mainframe at a pivot point and pivotally attached to the loader;

an actuator pivotally attached to the first side of the mainframe at a pivot point and pivotally attached to the loader;

a drive mechanism comprising tracks or wheels for propelling the compact tool carrier over a supporting surface, the drive mechanism being attached to the mainframe about a rotational axis, the compact tool carrier having a bottom at which the drive mechanism contacts the supporting surface, the rotational axis and bottom of the compact tool carrier being separated by a vertical distance $D1$, the rotational axis and each pivot point being separated by a vertical distance, each vertical distance between the rotational axis and a pivot point being less than 1.5 times $D1$; and

a control station having operator controls for propelling the compact tool carrier forward and for raising and/or lowering the loader, the control station being mounted toward the rear of the compact tool carrier and adapted to allow for standing or walk-behind operation.

16. (Original) The compact tool carrier as set forth in claim 15 wherein the rotational axis and the pivot point at which the linkage is attached are separated by a vertical distance $D2$, the rotational axis and the pivot point at which the actuator is attached are separated by a vertical distance $D3$, both $D2$ and $D3$ being less than 1.5 times $D1$.

17. (Currently amended) The compact tool carrier as set forth in claim 16 ~~[[15]]~~ wherein the second side of the mainframe comprises two pivot points, each vertical distance between the rotational axis and a pivot point being less than 1.5 times D1.

18. (Currently amended) The compact tool carrier as set forth in claim 16 ~~[[15]]~~ wherein the rotational axis and the bottom of the first side of the mainframe are separated by a vertical distance D5, both D2 and D3 being less than twice D5.

19. (Original) The compact tool carrier as set forth in claim 18 wherein the first side of the mainframe comprises a top most pivot point, the top most pivot point and the top of the first side of the mainframe being separated by a vertical distance D6, D6 being less than about 1.5 times D5.

20. (Original) The compact tool carrier as set forth in claim 15 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

REMARKS

Applicant respectfully requests reconsideration and allowance of all pending claims.

Status of the Claims

Applicant has amended claims 17 and 18. Claims 1-20 are pending in the application.

Rejections under 35 U.S.C. §112, Second Paragraph

Applicant has amended claim 18 by changing its claim dependency to claim 16. Claim 16 recites both D2 and D3 and provides antecedent basis for these claim terms in claim 18, thereby obviating the rejection of the Office.

Non-obvious Double Patenting Rejection

The Office has rejected claims 1-20 as being unpatentable under the doctrine of non-obvious double patenting over claims 1-20 of U.S. Patent No. 9,321,386. Applicant herewith submits a terminal disclaimer disclaiming the term of any patent that issues from the present application that extends beyond the term of U.S. Patent No. 9,321,386, thereby obviating the double patenting rejection.

Objections to the Specification

Applicant has amended the abstract to be at least 50 words in length as requested by the Office. Applicant has also changed reference number "10" to "18" in paragraph [0025] and "P4" to "P2" in paragraphs [0027] and [0030] as requested by the Office.

Rejections under 35 U.S.C. §103

The Office has rejected claims 1-8, 10-13 and 15-20 under 35 U.S.C. §103 as being obvious over U.S. Patent No. 8,821,104 to Yasuda et al. ("Yasuda") in view of U.S. Patent No. 6,695,568 to Bares et al. ("Bares"). Alternatively, claims 1-8, 10-13 and 15-20 are rejected under 35 U.S.C. §103 as being obvious over Bares in view of Yasuda. Claims 9 and 14 are rejected under 35 U.S.C. §103 as being obvious over Yasuda in view of Bares and in further view of U.S. Patent Pub. No. 2009/0116943 to Valere ("Valere"). Alternatively, claims 9 and 14 are rejected under 35 U.S.C. §103 as being obvious over Bares in view of Yasuda and in further view of Valere. Applicant submits that the pending claims are patentable over the cited references for the reasons set forth below.

Independent claims 1 and 15 are directed to compact tool carriers. The compact tool carrier of claim 1 includes an advantageous loader arrangement in which the loader arm is not directly attached to the mainframe and includes a linkage and actuator that are both pivotally attached to the first side of the mainframe and pivotally attached to the loader arm. The compact tool carrier of independent claim 15, in part, advantageously requires the distances between the pivot points of the linkage and actuator and the rotational axis at which a drive mechanism is attached to the mainframe to be less than 1.5 times the distance between the rotational axis and the bottom of the compact tool carrier.

The compact tool carriers of independent claims 1 and 15 are not obvious over Yasuda in view of Bares. The Office's basis for obviousness of the pending claims is that the compact

tool carrier of Bares is "substantially similar" to the Yasuda device (see page 5 of the Office action). Applicant submits that the machines of Bares and Yasuda are not "substantially similar" and one of skill in the art would not use the loading mechanism of a standard skid loader as in Yasuda in a compact tool carrier apparatus as disclosed by Bares.

Compact tool carriers such as the compact tool carriers of Bares and of independent claims 1 and 15 are significantly different than standard skid loaders such as the loader of Yasuda. In fact, compact tool carriers are recognized by those of skill in the art to be a completely separate category of machine. Indeed, the International Organization for Standardization (ISO) has assigned Compact Tool Carriers to a distinct class of earth moving machines (See ISO 6165 (2012) entitled "Earth-moving Machinery - Basic Types - Identification and Terms and Definitions"). Further, both the Society of Automotive Engineers (SAE) and International Organization for Standardization (ISO) has assigned compact tool carriers to separate design standards such as standards for personal protection (see SAE J2752 entitled "Personal Protection - Compact Tool Carriers" and ISO/NP 20474-15 entitled "Earth-moving machinery - Safety - Part 15: Requirement of Compact Tool Carriers")¹.

As stated in these standards, compact tool carriers are "a self-propelled crawler or wheeled machine having an operating mass of less than 1500 kg with a rigid frame, having either a

¹ Please advise if you would like a courtesy copy of ISO 6165:2012 (propriety), SAE J2752 (propriety) or ISO/NP 20474-15 (propriety). These references are considered to be favorable toward patentability of the pending claims.

pedestrian operating position or a standing operator platform at the rear of the machine and either front-mounted interchangeable equipment or lift arms with an attachment bracket capable of coupling to interchangeable, front-mounted attachments."

Compact tool carriers are so small (less than 1500 kg) that they are less than a third of the weight of what is referred to in the art as a "compact machine" for moving material (defined as 4500 kg or less in ISO 6165 (2012)).

The significance of the difference between standard loaders and compact tool carriers is also recognized by Bares itself which is cited by the Office. Bares indicates the importance of allowing the operator to be at the rear of the loader and maneuverability of the device in small areas:

The present invention relates to a small loader that is manually operated by a standing operator at the rear of the loader. The loader has a low lift arm profile, so that an operator standing at the rear of the loader can see the work area. The low profile lift arms aid side-to-side visibility.

Various small self-propelled loaders have been advanced, where an **operator will either stand or walk on the ground behind the loader or stand on a platform on the loader frame to manipulate the work element** that is attached to the forward ends of pivoting lift arms.

These loaders find utility in **small load applications**, where loads that are too heavy for a person to lift can be hoisted. The ability of the

loaders to be **operated in small areas** is important. Ease of manipulation of the bucket or work tool, as well as the ability to see the work that is being carried out is also important. (col. 1, lines 6-22; emphasis added)

One of skill in the art would not resort to conversion of a standard size loader, as per Yasuda, into a compact skid steer, like Bares, or, alternatively, modify the compact skid steer of Bares to include a loading mechanism such as that provided with Yasuda due to the variations in the weight, complexity, size, and intended use of each of these apparatus types (see paragraph [0004] of the application).

It is worth considering the construction of Yasuda as a compact machine, complete with a cabin for the operator. Yasuda (col. 7, lines 22-27) sets forth for a "driving part 5" that "is provided above the body frame 1, with a driver's seat 63 ..., control levers etc. mounted thereon. On a front portion of the body frame 1, a cabin (driver protector) 4 surrounding the driving part 5 is mounted. ..." One of the principles of operation of Yasuda et al., thus, is to have the driver's seat 63 and the control levers to be located with the driving part 5 and for the driving part 5 to be surrounded by the "cabin (driver protector) 4". Therefore, moving the control levers of Yasuda to the back of the machine and, accordingly, outside the protection offered by the cabin 4 would constitute a change in principle of operation (MPEP 2143.01(VI)) of Yasuda, thus pointing to the non-obviousness of the proposed modification.

Applicant also submits that one of skill in the art would not resort to conversion of the particular loading apparatus of

Yasuda into a compact tool carrier or, alternatively, using the loading mechanism thereof with a compact tool carrier. Compact tool carriers may be characterized by an already relatively high center of gravity, particularly during loading. Those of skill in the art would consider the vertical lift profile of the loader of Yasuda to raise the center of gravity of the compact tool carrier when the loader is raised, which would increase the likelihood of the tool carrier to tip. The general weight distribution in a standard carrier such as that of Yasuda can accommodate a higher lift profile that might otherwise pose a concern in a lighter weight compact tool carrier like that of Bares. Applicant found that such design obstacles could be overcome by using a loader with linkages and actuators with relatively low pivot points relative to the mainframe (see, for example, paragraphs [0030] and [0034]; and claims 15 and 18 in which features related to the low-profile nature of the loader are provided).

Further, one of skill in the art would not modify the apparatus of Bares by pivotally attaching the lower arms of Bares to its mainframe through an actuator and linkage as shown by Yasuda as suggested by the Office on page 6 of the Office action. Bares teaches that the pivot points of the loader relative to the mainframe should be as high as possible:

While it is desirable to have the pivot points for the boom near the rear of the small loader, **and relatively high so that the reach is adequate for operation**, conventional, straight lift arms tend to block vision to the side, as they are raised. (col. 1, lines 23-26; emphasis added)

* * * * *

The lift arms are **pivoted at the uppermost**, rear portion of the frame, and extend forwardly to support a bucket, or other work implement at the forward ends of the arms. Hydraulic actuators are utilized for raising and lowering the lift arms, in a normal manner. (col. 1, lines 42-44; emphasis added)

Clearly, between the above passage and the illustrated embodiment (e.g., Figs. 2 & 3), Bares teaches toward having higher pivot points (including the advantages thereof) and, thus, teaches away from its modification to use a loader assembly in which the pivot points are positioned lower on the frame, as in Yasuda (Fig. 1; first link shaft 85). A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. MPEP §2141.02. A prior art reference that "teaches away" from the claimed invention is a significant factor to be considered in determining obviousness. MPEP §2145(X)(D)(1).

For at least these reasons independent claims 1 and 15 and claims 2-8, 10-13 and 15-20 depending therefrom are patentable over Yasuda in view of Bares or, alternatively, over Bares in view of Yasuda. In regard to Valere which is cited by the Office to reject several of the dependent claims, Valere does not cure the deficiencies noted above relating to Yasuda and Bares.

Applicant respectfully requests allowance of this application. Applicant authorizes the Commissioner to charge any fees due in connection with this Amendment A, including the

fees for a three (3) month extension of time, to Deposit Account No. 012384 in the name of Armstrong Teasdale LLP.

Respectfully submitted,

/Michael J. Vander Molen/

Michael J. Vander Molen
Reg. No. 57,274
Armstrong Teasdale, LLP
7700 Forsyth Blvd, Suite 1800
St. Louis, Missouri 63105
(314) 621-5070

MJV/asb

**TERMINAL DISCLAIMER TO OBIATE A DOUBLE PATENTING
REJECTION OVER A "PRIOR" PATENT**

Docket Number (Optional)

31681-41

In re Application of: Brad Thomas et al.

Application No.: 15/062,801

Filed: March 7, 2016

For: LOW PROFILE COMPACT TOOL CARRIERS

The applicant, Vermeer Manufacturing Company, owner of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 9,321,386 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The applicant hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the applicant does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the **prior patent**, "as the term of said **prior patent** is presently shortened by any terminal disclaimer," in the event that said **prior patent** later:

expires for failure to pay a maintenance fee;

is held unenforceable;

is found invalid by a court of competent jurisdiction;

is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;

has all claims canceled by a reexamination certificate;

is reissued; or

is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee.

I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

2. ☒ The undersigned is an attorney or agent of record. Reg. No. 57,274

/Michael J. Vander Molen/

Signature

10/14/2016

Date

Michael J. Vander Molen

Typed or printed name

Attorney of Record

Title

(314) 621-5070

Telephone Number

- ☒ Terminal disclaimer fee under 37 CFR 1.20(d) included.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.321. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

CERTIFICATION STATEMENT

In accordance with 37 C.F.R. § 1.704(d), Applicant hereby certifies that each item of information contained in the information disclosure statement was first cited in a communication from a patent office in a counterpart foreign or international application or from the Office, and this communication was not received by an individual designated in § 1.56(c) more than thirty days prior to the filing of the information disclosure statement.

Respectfully submitted,

/Michael J. Vander Molen/

Michael J. Vander Molen
Reg. No. 57,274
ARMSTRONG TEASDALE LLP
7700 Forsyth Blvd., Suite 1800
St. Louis, Missouri 63105
(314) 621-5070



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/062,801	03/07/2016	Brad Thomas	31681-41

CONFIRMATION NO. 8886

PUBLICATION NOTICE



OC000000085354092

76656
Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MO 63105

Title:LOW PROFILE COMPACT TOOL CARRIERS

Publication No.US-2016-0244308-A1

Publication Date:08/25/2016

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/062,801	03/07/2016	Brad Thomas	31681-41

76656
Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MO 63105

CONFIRMATION NO. 8886
POA ACCEPTANCE LETTER



OC000000083867791

Date Mailed: 06/23/2016

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/13/2016.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/mtekle michael/

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	15/062,801
Filing Date	March 7, 2016
First Named Inventor	Brad Thomas
Title	LOW PROFILE COMPACT TOOL CARRIERS
Art Unit	3652
Examiner Name	Not Yet Assigned
Attorney Docket Number	31681-41

SIGNATURE of Applicant or Patent Practitioner

Signature	/Michael J. Vander Molen/	Date (Optional)	6/13/16
Name	Michael J. Vander Molen	Registration Number	57,274
Title (if Applicant is a juristic entity)	Attorney for Applicant		
Applicant Name (if Applicant is a juristic entity)	Vermeer Manufacturing Company		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.



*Total of ONE forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

76656

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter to:

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

--

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	15 August 2013
Name	Bob Smith		
Title	General Counsel Vermeer Manufacturing Company		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Vermeer Manufacturing CompanyApplication No./Patent No.: 15/062,801Filed/Issue Date: March 7, 2016Titled: LOW PROFILE COMPACT TOOL CARRIERSVermeer Manufacturing Company, a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 037911, Frame 0749, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:
1. From: _____ To: _____
- The document was recorded in the United States Patent and Trademark Office at
- Reel _____, Frame _____, or for which a copy thereof is attached.
2. From: _____ To: _____
- The document was recorded in the United States Patent and Trademark Office at
- Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

EX1002 / Page 193 of 258

Kubota North America Corporation et al

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Michael J. Vander Molen/

6/13/16

Signature

Date

Michael J. Vander Molen

57,274

Printed or Typed Name

Title or Registration Number



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/062,801	03/07/2016	Brad Thomas	31681-41	8886

76656 7590 04/15/2016

Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MO 63105

EXAMINER

KRAMER, DEAN J

ART UNIT	PAPER NUMBER
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3652

NOTIFICATION DATE	DELIVERY MODE
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04/15/2016

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

Office Action Summary	Application No. 15/062,801	Applicant(s) THOMAS ET AL.	
	Examiner DEAN KRAMER	Art Unit 3652	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 1-20 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) _____ is/are allowed.
- 7) ☒ Claim(s) 1-20 is/are rejected.
- 8) ☐ Claim(s) _____ is/are objected to.
- 9) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☒ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some** c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☐ Notice of References Cited (PTO-892) | 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____ | 4) ☐ Other: _____ |

DETAILED ACTION

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 112

1. The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 18 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

There is no clear antecedent basis for “both D2 and D3” as recited in line 4 of claim 18.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s)

because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit <http://www.uspto.gov/forms/>. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to <http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp>.

4. Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-10; 14; 13; 11; 12; and 15-20, respectively, of U.S. Patent

No. 9,321,386. Although the claims at issue are not identical, they are not patentably distinct from each other because claims 1-20 are generic to all that is recited in claims 1-10; 14; 13; 11; 12; and 15-20, respectively, of U.S. Patent No. 9,321,386. In other words, claims 1-10; 14; 13; 11; 12; and 15-20 of the ('386) patent fully encompass the subject matter of claims 1-20 of the instant application.

Claim Rejections - 35 USC § 103

5. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

6. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-8, 10-13, and 15-20, as understood, are rejected under 35 U.S.C. 103 as being unpatentable over Yasuda et al. (8,821,104) in view of Bares et al. (6,695,568). Alternatively, claims 1-8, 10-13, and 15-20, as understood, are rejected under 35 U.S.C. 103 as being unpatentable over Bares et al. (6,695,568) in view of Yasuda et al. (8,821,104).

The patent to Yasuda et al. shows a compact tool carrier comprising a loader (2,77,78), a mainframe (1), a drive wheel (69) attached to the mainframe about a rotational axis (71), an actuator (79) pivoted to the mainframe at point (91), and linkage (81,82) pivoted to the mainframe at points (85,86). The Yasuda et al. loader arms (77) are not directly attached to the mainframe. The Yasuda et al. carrier does not show its control station mounted to the rear of the mainframe for walk-behind operation as is called for in the above claims.

However, the patent to Bares et al. shows a low profile carrier substantially similar to the Yasuda et al. device, but the Bares et al. carrier includes a control station (20) at the rear portion of its mainframe for allowing an operator to walk behind during use. It is noted that while the position of the control stations in Bares et al. and Yasuda et al. are different, both of these patents are similarly directed to vehicles having load-handling tools pivotally attached thereto wherein the attached tools are operated through actuators and linkages.

It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to form the control station of the Yasuda et al. carrier at the rear portion of its mainframe, similar to that shown in the Bares et al. patent, so that an operator could walk behind the resulting vehicle while controlling its movement. This rear-mounted control station would result in a more compact and lighter weight assembly (e.g. having a mass less than 1500 kg.) enabling better maneuverability over certain terrain and in congested spaces.

In the alternative, it would have been obvious to a person having ordinary skill in the art before the effective filing date of the claimed invention to pivotally attach the Bares et al. loader arms (32) to its mainframe through an actuator and linkage similar to that shown in the Yasuda et al. patent in order to create a more versatile device that could maneuver a tool attached to its load arms in farther reaching positions. It is pointed out that the concerns in the Bares et al. patent regarding the pivot points being "relatively high" in order to adequately reach, the extended lengths of the linkages in the resulting combination (see linkage 81 and 82 of Yasuda et al.) would allow the pivot points to be lower while still achieving an extended reach.

Regarding claims 2, 8, and 11, it would have been a matter of obvious engineering design choice to form the mainframe, linkage, or loader arms as a one-piece construction. *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965) (A claim to a fluid transporting vehicle was rejected as obvious over a prior art reference which differed from the prior art in claiming a brake drum integral with a clamping means, whereas the brake disc and clamp of the prior art comprise several parts rigidly secured together as a single unit. The court affirmed the rejection holding, among other reasons, "that the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice.")

In regard to claims 12 and 20, the Yasuda et al. patent discloses a bucket (78a) attached to its loader arm assembly.

Art Unit: 3652

8. Claims 9 and 14 are rejected under 35 U.S.C. 103 as being unpatentable over Yasuda et al. in view of Bares et al. as applied to claims 1-8, 10-13, and 15-20 above, and further in view of Valere (2009/0116943). Alternatively, claims 9 and 14 are rejected under 35 U.S.C. 103 as being unpatentable over Bares et al. (6,695,568) in view of Yasuda et al. (8,821,104) as applied to claims 1-8, 10-13, and 15-20 above, and further in view of Valere (2009/0116943).

Valere shows a compact tool carrier having a platform (4) mounted at the rear of the carrier on which a user can stand during operation.

It would have been obvious to a person having ordinary skill in the art to mount a platform below the control station of the modified Yasuda et al. device (or the modified Bares et al. device), as was presented above in section 7, similar to that shown in the Valere publication so that an operator would not have to laboriously walk behind the carrier during use.

Specification

9. The abstract of the disclosure is objected to because it is less than 50 words in length. Correction is required. See MPEP § 608.01(b).

10. The disclosure is objected to because of the following informalities: In paragraph [0021], last line, and in paragraph [0025], line 9, the number "10" should be changed to --18--. In paragraph [0027], line 3, and in paragraph [0030], line 14, the reference character "P4" should be changed to --P2--.

Appropriate correction is required.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEAN KRAMER whose telephone number is (571)272-6926. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saul Rodriguez can be reached on (571) 272-7097. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DEAN KRAMER/
Primary Examiner, Art Unit 3652

djk
4/9/16



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
15/062,801	03/07/2016	3652	1600	31681-41	20	2

CONFIRMATION NO. 8886

FILING RECEIPT



0000000081589134

76656
Patent Docket Department
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
St. Louis, MO 63105

Date Mailed: 03/23/2016

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Brad Thomas, Pleasant Hill, IA;
Louis Hartke, Pella, IA;
Greg Langenfeld, Bettendorf, IA;
Matt Hutchinson, Pella, IA;

Applicant(s)

Vermeer Manufacturing Company, Pella, IA;

Assignment For Published Patent Application

Vermeer Manufacturing Company, Pella, IA

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 14/691,649 04/21/2015
which claims benefit of 62/118,860 02/20/2015

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/21/2016

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/062,801**

Projected Publication Date: 08/25/2016

Non-Publication Request: No

Early Publication Request: No
Title

LOW PROFILE COMPACT TOOL CARRIERS

Preliminary Class

414

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	31681-41
		Application Number	
Title of Invention	LOW PROFILE COMPACT TOOL CARRIERS		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor	1				Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Brad		Thomas		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Pleasant Hill	State/Province	IA	Country of Residence	US

Mailing Address of Inventor:

Address 1	465 Hillside Court				
Address 2					
City	Pleasant Hill	State/Province	IA		
Postal Code	50327	Country	US		

Inventor	2				Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Louis		Hartke		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Pella	State/Province	IA	Country of Residence	US

Mailing Address of Inventor:

Address 1	2005 Highway 163				
Address 2					
City	Pella	State/Province	IA		
Postal Code	50219	Country	US		

Inventor	3				Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Greg		Langenfeld		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	31681-41
		Application Number	
Title of Invention	LOW PROFILE COMPACT TOOL CARRIERS		

City	Bettendorf	State/Province	IA	Country of Residence	US
------	------------	----------------	----	----------------------	----

Mailing Address of Inventor:

Address 1	2425 Baron Court				
Address 2					
City	Bettendorf	State/Province	IA		
Postal Code	52722	Country	US		
Inventor	4				Remove
Legal Name					

Prefix	Given Name	Middle Name	Family Name	Suffix	
	Matt		Hutchinson		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Pella	State/Province	IA	Country of Residence	US

Mailing Address of Inventor:

Address 1	410 Highway T14				
Address 2					
City	Pella	State/Province	IA		
Postal Code	50219	Country	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add					

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	76656		
Email Address	uspatents@armstrongteasdale.com	Add Email	Remove Email

Application Information:

Title of the Invention	LOW PROFILE COMPACT TOOL CARRIERS		
Attorney Docket Number	31681-41	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	7	Suggested Figure for Publication (if any)	1

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	31681-41
		Application Number	
Title of Invention	LOW PROFILE COMPACT TOOL CARRIERS		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	76656		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	14691649	2015-04-21

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	31681-41
		Application Number	
Title of Invention	LOW PROFILE COMPACT TOOL CARRIERS		
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14691649	Claims benefit of provisional	62118860	2015-02-20
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			Remove
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	31681-41
	Application Number	
Title of Invention	LOW PROFILE COMPACT TOOL CARRIERS	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	31681-41
		Application Number	
Title of Invention	LOW PROFILE COMPACT TOOL CARRIERS		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant	1	Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section. Clear		
☒ Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:		
Name of the Deceased or Legally Incapacitated Inventor:		
If the Applicant is an Organization check here. ☒		
Organization Name	Vermeer Manufacturing Company	
Mailing Address Information For Applicant:		
Address 1	1210 Vermeer Road East	
Address 2		
City	Pella	State/Province IA
Country	US	Postal Code 50219
Phone Number		Fax Number
Email Address		
Additional Applicant Data may be generated within this form by selecting the Add button. Add		

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	31681-41
		Application Number	
Title of Invention	LOW PROFILE COMPACT TOOL CARRIERS		

Assignee	1		
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.			
			Remove
If the Assignee or Non-Applicant Assignee is an Organization check here.			☒
Organization Name	Vermeer Manufacturing Company		
Mailing Address Information For Assignee including Non-Applicant Assignee:			
Address 1	1210 Vermeer Road East		
Address 2			
City	Pella	State/Province	IA
Country ⁱ	US	Postal Code	50219
Phone Number		Fax Number	
Email Address			
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.			Add

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the **INITIAL** filing of the application and either box A or B is **not** checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Michael J. Vander Molen/		Date (YYYY-MM-DD)	2016-03-07	
First Name	Michael J.	Last Name	Vander Molen	Registration Number	57274
Additional Signature may be generated within this form by selecting the Add button.				Add	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	31681-41
		Application Number	
Title of Invention	LOW PROFILE COMPACT TOOL CARRIERS		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

LOW PROFILE COMPACT TOOL CARRIERS

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] This application is a continuation of U.S. Patent Application No. 14/691,649, filed April 21, 2015, which claims the benefit of U.S. Provisional Patent Application No. 62/118,860, filed February 20, 2015, both of which are incorporated herein by reference in their entirety.

FIELD OF THE DISCLOSURE

[0002] The field of the disclosure relates to compact tool carriers having a loader mounted to a low-profile mainframe.

BACKGROUND

[0003] Compact tool carriers are tool-mounted machines that are capable of working in tight spaces for utility or do-it-yourself home projects. Compact tool carriers are walk-behind units or include a platform on which the operator may stand during use. Compact tool carriers are generally defined (e.g., ISO 6165 (2012) and SAE J2752) as "a self-propelled crawler or wheeled machine having an operating mass of less than 1500 kg with a rigid frame, having either a pedestrian operating position or a standing operator platform at the

rear of the machine and either front-mounted interchangeable equipment or lift arms with an attachment bracket capable of coupling to interchangeable, front-mounted attachments." The tool carriers may be attached to a variety of interchangeable tools such as buckets, augers, forks, stump grinders, tillers, rollers and the like.

[0004] Compact tool carriers may be distinguished from much larger conventional skid steers in which an operator is seated in the operating position. Compact tool carriers pose difficulty in design relative to full-size skid steers due to variation in weight, complexity and size.

[0005] A continuing need exists for compact tool carriers with a relatively low-profile, compact design and/or that are characterized by a more effective loader lifting profile.

[0006] This section is intended to introduce the reader to various aspects of art that may be related to various aspects of the disclosure, which are described and/or claimed below. This discussion is believed to be helpful in providing the reader with background information to facilitate a better understanding of the various aspects of the present disclosure. Accordingly, it should be understood that these statements are to be read in this light, and not as admissions of prior art.

SUMMARY

[0007] One aspect of the present disclosure is directed to a compact tool carrier configured for standing or walk-behind operator control. The carrier has a mass of less than about 1500 kg and includes a loader having an arm and a linkage pivotally attached to the loader arm. An actuator is pivotally attached to the loader arm. The carrier includes a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader. The control station is configured for remote operation or is mounted toward the rear of the compact tool carrier and is adapted to allow for standing or walk-behind operation.

[0008] Another aspect of the present disclosure is directed to a compact tool carrier. The carrier comprises a loader and a mainframe for supporting the loader. The mainframe has a first side and a second side with each side having a top and a bottom. The first side of the mainframe has at least two pivot points relative to the loader. The carrier includes a drive mechanism comprising tracks or wheels for propelling the apparatus over a supporting surface. The drive mechanism is attached to the mainframe about a rotational axis. The compact tool carrier has a bottom at which the drive mechanism contacts the supporting surface. The rotational axis and bottom of the compact tool carrier are separated by a vertical distance D_1 . The rotational axis and each pivot point are separated by a vertical

distance. Each vertical distance between the rotational axis and a pivot point is less than 1.5 times D1.

[0009] Various refinements exist of the features noted in relation to the above-mentioned aspects of the present disclosure. Further features may also be incorporated in the above-mentioned aspects of the present disclosure as well. These refinements and additional features may exist individually or in any combination. For instance, various features discussed below in relation to any of the illustrated embodiments of the present disclosure may be incorporated into any of the above-described aspects of the present disclosure, alone or in any combination.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Figure 1 is a perspective view of a compact tool carrier with the loader in a down position;

[0011] Figure 2 is a side view of the compact tool carrier with the loader in a down position;

[0012] Figure 3 is a side view of the compact tool carrier with the loader in a raised position;

[0013] Figure 4 is a perspective view of a mainframe of the compact tool carrier;

[0014] Figure 5 is a side view of the mainframe and loader of the compact tool carrier;

[0015] Figure 6 is a cross-section side view of the mainframe; and

[0016] Figure 7 is an exploded perspective view of the mainframe and an upper frame of the compact tool carrier.

[0017] Corresponding reference characters indicate corresponding parts throughout the drawings.

DETAILED DESCRIPTION

[0018] An embodiment of a compact tool carrier is generally referred as "5" in Figure 1. The compact tool carrier 5 includes a loader 8 supported by a mainframe 10. The loader 8 includes an attachment plate 12 for interchangeably attaching any one of a number of tools (not shown). In this regard, such interchangeable tools do not form part of the compact tool carrier 5 unless stated otherwise. The attachment plate 12 is connected to an actuator 14 for tilting of tools connected to the attachment plate 12. The loader 8 has a first arm 15a and a second arm 15b generally opposite the first arm 15a. Each arm 15a, 15b may be a single weldment or may include various components attached by fasteners (e.g., nuts and bolts). The first and second arms 15a, 15b each include a bracket portion 17a, 17b (Fig. 1) for fastening various linkages.

[0019] As used herein, "compact tool carrier" refers to machines that are self-propelled and are capable of carrying interchangeable equipment and

that generally have a mass (not including the interchangeable tool) of less than about 1500 kg (about 3307 lb). Use of the term "compact tool carrier" herein is intended to exclude full size skid steers (e.g., seat-operated units) due to a large variation in weight, complexity and size. In some embodiments, the compact tool carrier 5 meets the definition of a compact tool carrier provided in ISO 6165 (2012) and SAE J2752 set forth above, both standards being incorporated herein by reference for all relevant and consistent purposes.

[0020] The compact tool carrier 5 includes a longitudinal axis A that is parallel to the direction of travel of the carrier (i.e., parallel to its length). The compact tool carrier 5 is generally longitudinally symmetrical (i.e., relative to the longitudinal axis A) in that several components have a corresponding component with the same function opposite the component (i.e., across the axis A). Corresponding components of the pair may be indicated herein by use of a reference number followed by "A" and "B" and may be referred to as a "first" component and a "second" component, respectively. While the compact tool carrier 5 may be described herein with reference to the components of one side of the compact tool carrier 5, any component designated by "A" or "B" herein or shown in Figures 1-7 includes a corresponding component with the same function opposite the component.

[0021] The compact tool carrier 5 includes a drive mechanism 18 attached to the mainframe 10. In the illustrated embodiment, the drive mechanism 18 is

directly mounted (i.e., connected without intermediary parts) to the mainframe 10 by way of drive sprocket 22 connected to a hub 26 (Fig. 2). The hub 26 is attached to a shaft (not shown) that extends through a drive opening 30 (Fig. 4) of the mainframe 10. The sprocket 22, hub 26 and shaft (not shown) rotate about a rotational axis R (Fig. 5). As shown, the drive mechanism 18 includes tracks 34. In other embodiments, the drive mechanism 10 includes wheels.

[0022] The compact tool carrier 5 includes a control station 36 (Fig. 1) which may include controls (not all controls being shown) for propelling the compact tool carrier 5 forward and/or for raising and lowering the loader 8. The control station 36 may be mounted toward the rear of the compact tool carrier 5 (i.e., opposite the attachment plate 12) and is generally adapted to allow for standing or walk-behind operation. As used herein, "standing operation" generally refers to operation in which the operator stands on a platform attached to the compact tool carrier while "walk-behind operation" generally refers to operation in which the operator stands on the surface supporting the compact tool carrier 5. In the illustrated embodiment, the compact tool carrier 5 includes an operator platform 37 (Fig. 2).

[0023] In embodiments in which the compact tool carrier 5 includes an operator platform 37 for standing operation, the difference between the height of the control station 36 (e.g., as measured from the highest control for operating the loader or propelling

the apparatus forward) and the platform 37 may be at least about 90 cm (e.g., from about 90 cm to about 130 cm). In embodiments in which the operator walks behind the compact tool carrier 5, the control station 36 may be at least about 90 cm (e.g., from about 90 cm to about 130 cm) from the surface supporting the compact tool carrier. Such a range generally complies with the zones of comfort and reach for controls in earth-moving equipment set forth in ISO 6682 (2008) as determined from the physical dimensions of operators and minimum operator space envelope as set forth in ISO 3411 (2007), both of which are incorporated herein by reference for all relevant and consistent purposes.

[0024] In the illustrated embodiment, the control station 36 is attached to an upper frame 39 (Fig. 7) that is attached and supported by the mainframe 10. In other embodiments, rather than being integrated as one unit in the compact tool carrier 5, the control station 36 is separate from the body (e.g., mainframe) of the carrier and is operated remotely. In such embodiments, the control station 36 may be wired or may operate wirelessly to propel the carrier 5 and/or raise and lower the loader 8.

[0025] The mainframe 10 includes a first side 38a and a second side 38b generally opposite the first side 38a. As used herein, the term "mainframe" generally refers to a single weldment to which the loader 8 is attached, optionally through one or more pivotal linkages. The mainframe 10 includes bracket portions 40a, 40b (Fig. 4) through which various pivot linkages

are attached. In the illustrated embodiment, the engine (not shown) and the drive mechanism 10 comprising tracks or wheels are directly connected to the mainframe 10.

[0026] The first loader arm 15a is pivotally connected to the first side 38a of the mainframe 10, and the second loader arm 15b is pivotally connected to the second side 38b of the mainframe 10. The loader arms 15a, 15b and sides 38a, 38b of the mainframe 10 each include three pivot points for pivoting the loader 8 relative to the mainframe 10. The first side 38a of the mainframe 10 includes a forward pivot point P_1 (Fig. 5) a rear pivot point P_3 and a central pivot point P_2 between the forward pivot point P_1 and the rear pivot point P_3 . Similarly, the first arm 15a includes a forward pivot point P_4 , a rear pivot point P_6 and a central pivot point P_5 between the forward pivot point P_4 and the rear pivot point P_6 . The compact tool carrier 5 includes a first forward linkage 46a attached to the first side 38a of the mainframe 10 at its forward pivot point P_1 and attached to the first arm 15a at its forward pivot point P_4 . A first rear linkage 50a is attached to the first side 38a of the mainframe 10 at its rear pivot point P_3 and is attached to the first arm 15a of the loader 8 at its rear pivot point P_6 . While the carrier 5 is shown with two loader linkages 46a, 50a on each side of the carrier 5, in other embodiments the carrier 5 includes a single linkage.

[0027] An actuator 54, shown as a hydraulic cylinder, is attached to the first side 38a of the mainframe 10 at its center pivot point P_2 and is attached to the loader arm 15a at its center pivot point P_5 to

raise the loader 8. The compact tool carrier 5 may include a single actuator 54, or, as in other embodiments, a second actuator (not shown) is connected to the second side 38b (Fig. 4) of the mainframe 10 and the second arm 15b (Fig. 1). The actuator 54 is powered to raise the loader 8 and, in some embodiments, is also powered to lower the loader 8 (as opposed to a one-way actuator lowered by gravity alone).

[0028] The second side 38b (Fig. 4) of the mainframe 10 may include a forward pivot point and a rear pivot point to which a second forward linkage 46b (Fig. 1) and second rear linkage (not shown) are respectively attached. The second arm 15b may also include a forward pivot point and rear pivot point to which the second forward linkage 46b and second rear linkage are attached. In embodiments in which the compact tool carrier 5 includes a second actuator (not shown), the second side 38b of the mainframe 10 includes a central pivot point between its forward pivot point and its rear pivot point, and the second arm 15b also includes a central pivot point between its forward pivot point and its rear pivot point. The second cylinder may be attached to the central pivot point of the second side 38b of the mainframe 10 and the central pivot point of the second arm 15b.

[0029] In some embodiments, the first and second ends 38a, 38b of the mainframe 10 and the first and second loader arms 15a, 15b do not include more than three pivot points at which the mainframe 10 and loader 8 pivot relative to each other. While the actuator 54 is

shown as being attached between the other two linkages 46a, 50a, in other embodiments the actuator 54 is forward to both linkages 46a, 50a or rearward to both linkages 46a, 50a. Further, each side of the carrier 5 having an actuator 54 may include a single linkage rather than two linkages.

[0030] In some embodiments, the mainframe 10 is characterized by a relatively low profile (i.e., the pivot points are positioned relatively low on the mainframe allowing its height to be reduced). The rotational axis R (Fig. 5) and the bottom of the compact tool carrier 5 (Fig. 2) are separated by a distance D1. Generally, the bottom of the compact tool carrier 5 corresponds to the point at which the drive mechanism 18 contacts the surface supporting the compact tool carrier 5. The rotational axis R and the forward pivot point P₁ of the first side 38a of the mainframe 10 are separated by a vertical distance D2. The rotational axis R and the rear pivot point P₃ are separated by a vertical distance D3. The rotational axis R and the central pivot point P₄ are separated by a vertical distance D4. Each of D2, D3 and D4 is less than about 1.5 times D1 (1.5xD1). In some embodiments, each of D2, D3 and D4 is less than D1 or even less than about 0.75 times D1 (0.75xD1).

[0031] The mainframe 10 profile may also be expressed relative to the distance D5 between the rotational axis R (Fig. 5) and the bottom 57 of the mainframe 10. Each of D2, D3 and D4 is less than about twice D5 (2xD5). In some embodiments, each of D2, D3 and D4 is less than about 1.75 times D5 (1.75xD5) or less

than about 1.5 times D_5 ($1.5 \times D_5$). P_2 and P_3 may be relatively lower than P_1 and their distances D_3 , D_4 from the rotational axis R may be even less than about 1.25 times D_5 ($1.25 \times D_5$). The distance D_6 between the top 59 of the first side 38a of the mainframe 10 and the highest pivot point (P_1 in the illustrated embodiment), is less than about 1.5 times D_5 , less than about D_5 or less than about 0.75 times D_5 .

[0032] The second side 38b (Fig. 1) of the mainframe 10 may have a similar pivot point arrangement. The rotational axis R and the forward pivot point of the second side 38b are separated by a vertical distance D_2' (not shown). The rotational axis R and the rear pivot point of the second side are separated by a vertical distance D_3' (not shown). The rotational axis R and the central pivot point (if any) of the second side 38b of mainframe 10 are separated by a vertical distance D_4' (not shown). Each of D_2' , D_3' and D_4' is less than about 1.5 times D_1 ($1.5 \times D_1$) or less than D_1 or even less than about 0.75 times D_1 ($0.75 \times D_1$). The rotational axis R and the bottom of the second side 38b of the mainframe 10 are separated by a vertical distance D_5' (not shown). Each of D_2' , D_3' and D_4' is less than twice D_5' ($2 \times D_5'$) or less than about 1.75 times D_5' ($1.75 \times D_5'$) or less than about 1.5 times D_5' ($1.5 \times D_5'$). D_3' and D_4' may be even less than about 1.25 times D_5' ($1.25 \times D_5'$). The distance D_6' between the top of the second side 38b of the mainframe 10 and the highest pivot point is less than about 1.5 times D_5' , less than about D_5' or less than about 0.75 times D_5' .

[0033] The compact tool carrier 5 includes an engine (not shown) for propelling the drive mechanism 18. As shown in Figure 6, the engine may be mounted to an engine bracket 60 that forms part of the mainframe 10. The engine may drive a hydraulic pump that powers hydraulic motors (not shown) which drive the drive mechanism 18 (Fig. 1) and which provide hydraulic power to actuator 54. The mainframe 10 includes a reservoir 64 for storing and cycling of hydraulic fluid.

[0034] Compared to conventional compact tool carriers, embodiments of the compact tool carrier 5 described above have several advantages. By positioning the pivot points relatively low on the mainframe 10, the mass of the mainframe 10 and the resulting cost of the carrier 5 may be reduced. Further, such a low-profile mainframe 10 improves visibility for the operator and allows the center of gravity of the carrier 5 to be lowered which improves its stability. In embodiments in which the carrier 5 includes an actuator 54 (Fig. 5) for lifting the loader 8 that is disposed between forward linkage 46a and a rear linkage 50a on at least one side 38a, 38b of the mainframe 10, the loader 8 is characterized by a travel path in which the loader travels vertically rather than over a radial path. The vertical travel path of the loader 8 is more effective relative to conventional travel paths for compact tool carriers 5 as the carrier 5 may operate closer to other structures.

[0035] As used herein, the terms "about," "substantially," "essentially" and "approximately" when

used in conjunction with ranges of dimensions, concentrations, temperatures or other physical or chemical properties or characteristics is meant to cover variations that may exist in the upper and/or lower limits of the ranges of the properties or characteristics, including, for example, variations resulting from rounding, measurement methodology or other statistical variation.

[0036] When introducing elements of the present disclosure or the embodiment(s) thereof, the articles "a", "an", "the" and "said" are intended to mean that there are one or more of the elements. The terms "comprising," "including," "containing" and "having" are intended to be inclusive and mean that there may be additional elements other than the listed elements. The use of terms indicating a particular orientation (e.g., "top", "bottom", "side", etc.) is for convenience of description and does not require any particular orientation of the item described.

[0037] As various changes could be made in the above constructions and methods without departing from the scope of the disclosure, it is intended that all matter contained in the above description and shown in the accompanying drawing[s] shall be interpreted as illustrative and not in a limiting sense.

WHAT IS CLAIMED IS:

1. A compact tool carrier configured for standing or walk-behind operator control and having a mass of less than about 1500 kg, the compact tool carrier comprising:

a loader having an arm, the loader being adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, the loader arm not being directly attached to the mainframe;

a linkage pivotally attached to the first side of the mainframe and pivotally attached to the loader arm;

an actuator pivotally attached to the first side of the mainframe and pivotally attached to the loader arm; and

a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader, the control station being mounted toward the rear of the compact tool carrier and adapted to allow for standing or walk-behind operation.

2. The compact tool carrier as set forth in claim 1 wherein the mainframe incorporates a single weldment.

3. The compact tool carrier as set forth in claim 1 wherein the loader arm is a first loader arm and

the linkage is a first linkage, the loader comprising a second loader arm and the compact tool carrier comprising a second linkage pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

4. The compact tool carrier as set forth in claim 3 wherein the actuator is a first actuator, the compact tool carrier comprising a second actuator, the second actuator being pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

5. The compact tool carrier as set forth in claim 1 comprising a drive mechanism comprising tracks or wheels, the drive mechanism being attached to the mainframe.

6. The compact tool carrier as set forth in claim 1 comprising an engine to propel a drive mechanism, the engine being attached to the mainframe.

7. The compact tool carrier as set forth in claim 1 wherein the actuator is a hydraulic cylinder.

8. The compact tool carrier as set forth in claim 1 wherein each loader arm incorporates a single weldment.

9. The compact tool carrier as set forth in claim 1 wherein the control station is mounted toward the rear of the compact tool carrier, the compact tool carrier comprising an operator platform for standing operation of the compact tool carrier, the difference

between the height of the control station and the height of the platform being at least 90 cm.

10. The compact tool carrier as set forth in claim 1 wherein the control station is mounted toward the rear of the compact tool carrier, and the height of the control station from a surface supporting the compact tool carrier is at least 90 cm.

11. The compact tool carrier as set forth in claim 1 wherein a single linkage is attached to the first side of the mainframe and pivotally attached to the loader arm.

12. The compact tool carrier as set forth in claim 1 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

13. A method for operating the compact tool carrier as set forth in claim 1, the method comprising standing behind the compact tool carrier and operating the control station to propel the compact tool carrier forward and/or raise or lower the loader.

14. The method as set forth in claim 13 wherein the control station is operated while standing on an operator platform or while standing on a surface supporting the compact tool carrier.

15. A compact tool carrier comprising:

a loader adapted to carry a tool;

a mainframe for supporting the loader, the mainframe having a first side and a second side, each side having a top and a bottom, the first side of the mainframe having at least two pivot points relative to the loader, the loader not being directly attached to the mainframe;

a linkage pivotally attached to the first side of the mainframe at a pivot point and pivotally attached to the loader;

an actuator pivotally attached to the first side of the mainframe at a pivot point and pivotally attached to the loader;

a drive mechanism comprising tracks or wheels for propelling the compact tool carrier over a supporting surface, the drive mechanism being attached to the mainframe about a rotational axis, the compact tool carrier having a bottom at which the drive mechanism contacts the supporting surface, the rotational axis and bottom of the compact tool carrier being separated by a vertical distance D_1 , the rotational axis and each pivot point being separated by a vertical distance, each vertical distance between the rotational axis and a pivot point being less than 1.5 times D_1 ; and

a control station having operator controls for propelling the compact tool carrier forward and for raising and/or lowering the loader, the control station being mounted toward the rear of the compact tool carrier and adapted to allow for standing or walk-behind operation.

16. The compact tool carrier as set forth in claim 15 wherein the rotational axis and the pivot point at which the linkage is attached are separated by a vertical distance D2, the rotational axis and the pivot point at which the actuator is attached are separated by a vertical distance D3, both D2 and D3 being less than 1.5 times D1.

17. The compact tool carrier as set forth in claim 15 wherein the second side of the mainframe comprises two pivot points, each vertical distance between the rotational axis and a pivot point being less than 1.5 times D1.

18. The compact tool carrier as set forth in claim 15 wherein the rotational axis and the bottom of the first side of the mainframe are separated by a vertical distance D5, both D2 and D3 being less than twice D5.

19. The compact tool carrier as set forth in claim 18 wherein the first side of the mainframe comprises a top most pivot point, the top most pivot point and the top of the first side of the mainframe being separated by a vertical distance D6, D6 being less than about 1.5 times D5.

20. The compact tool carrier as set forth in claim 15 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.

ABSTRACT

Compact tool carriers having a loader mounted to a low-profile mainframe are disclosed. In some embodiments, the pivot points of the mainframe about which the loader is pivoted are low relative to the mainframe to reduce the mainframe size.

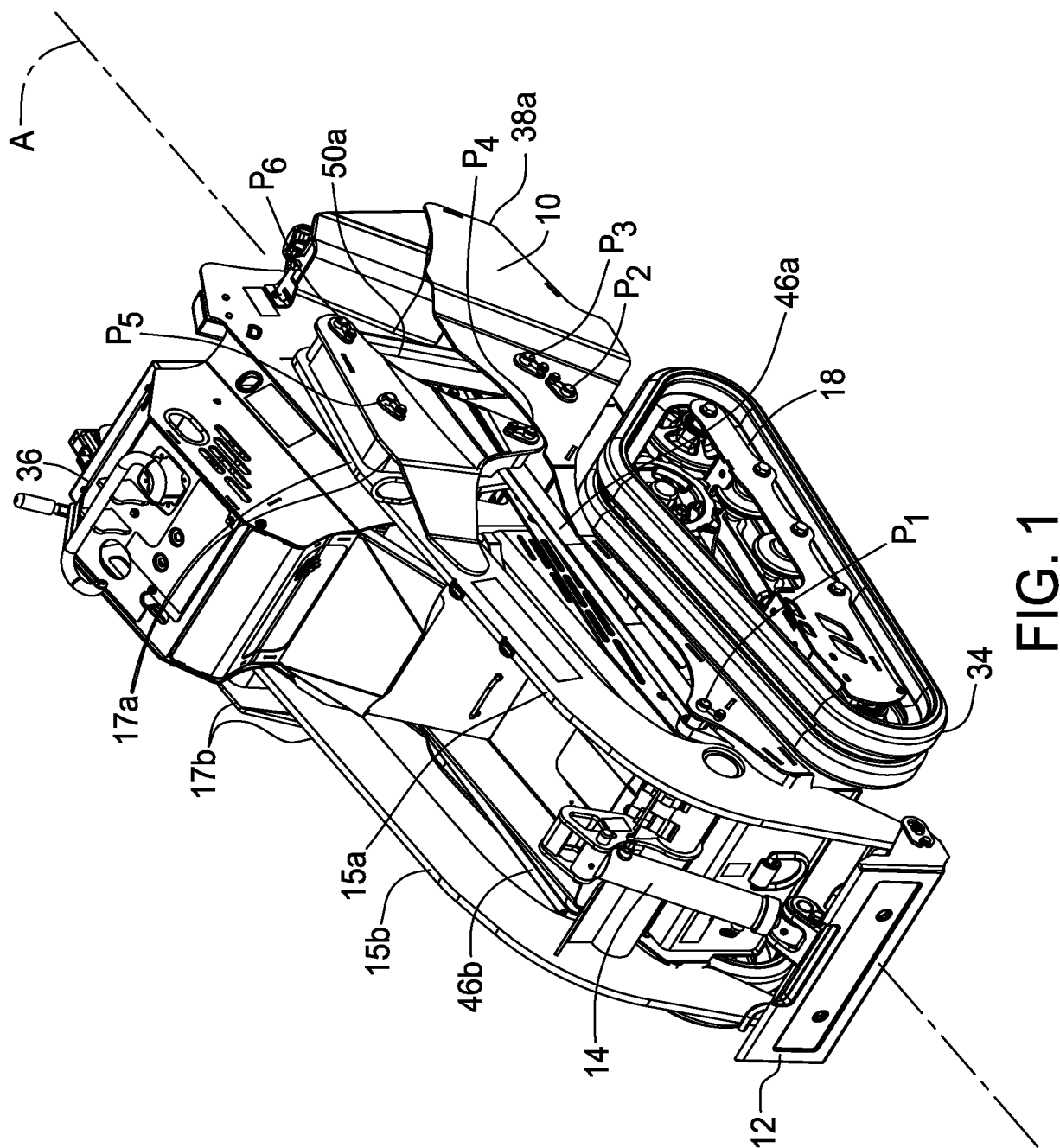


FIG. 1

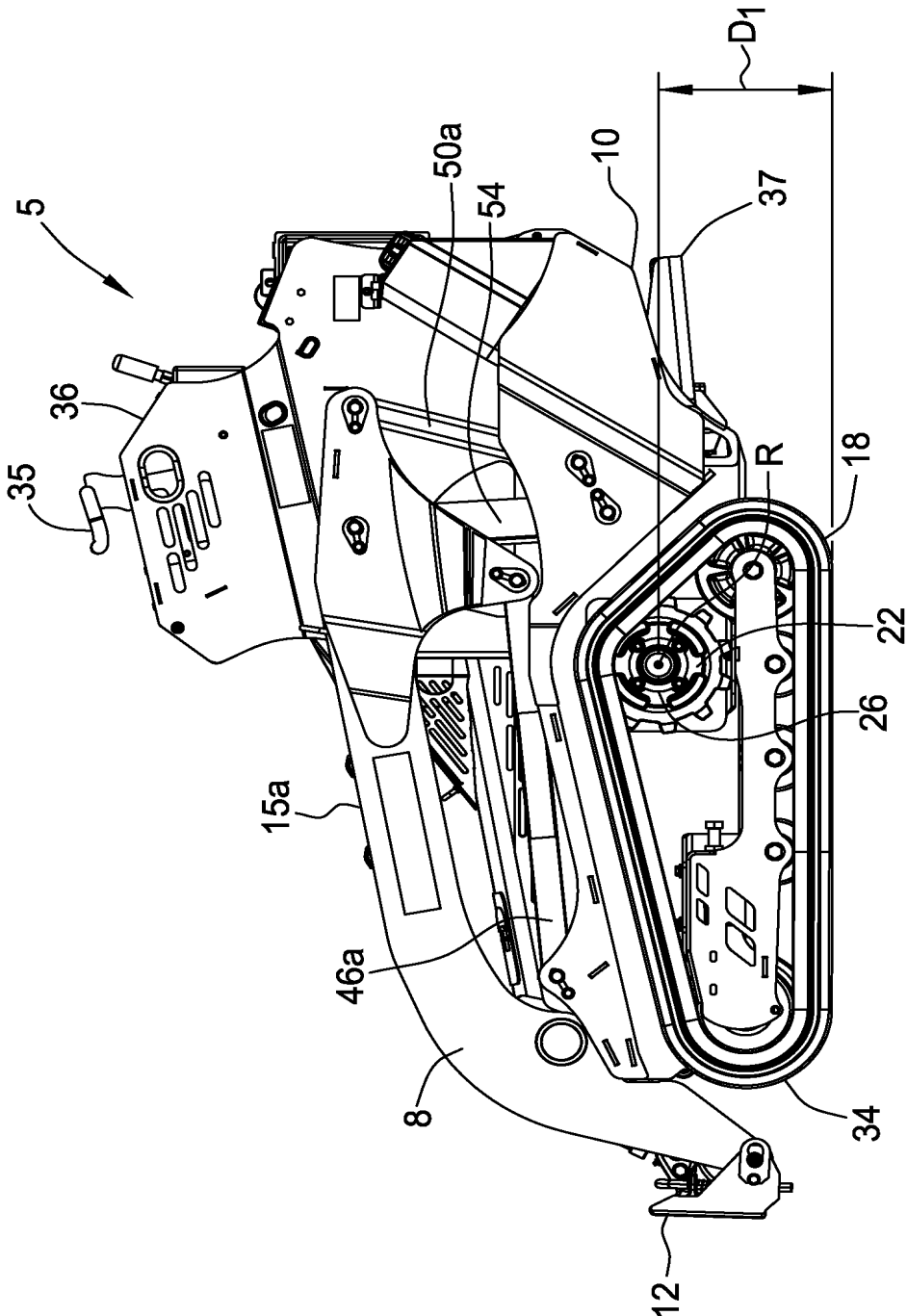


FIG. 2

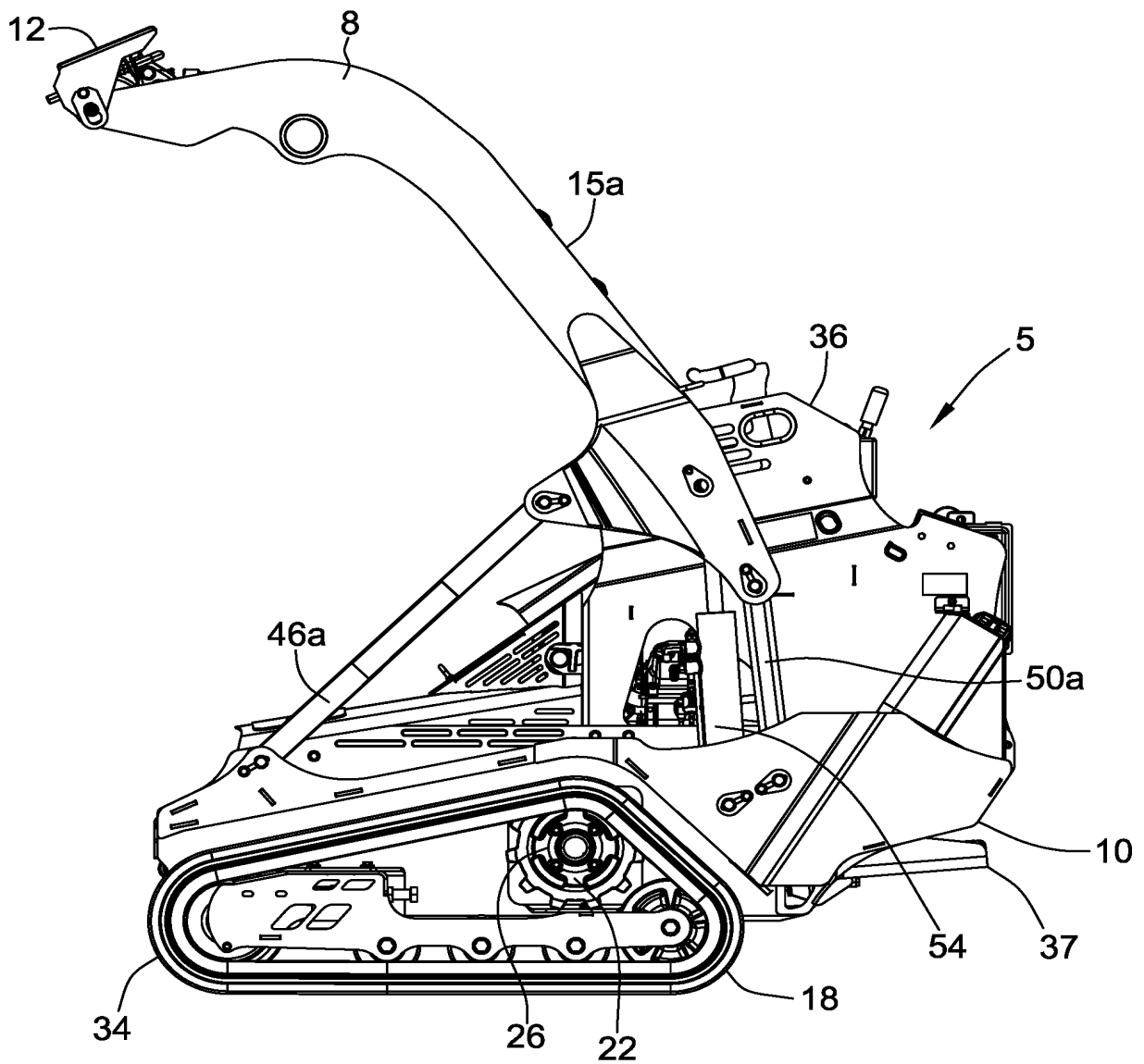


FIG. 3

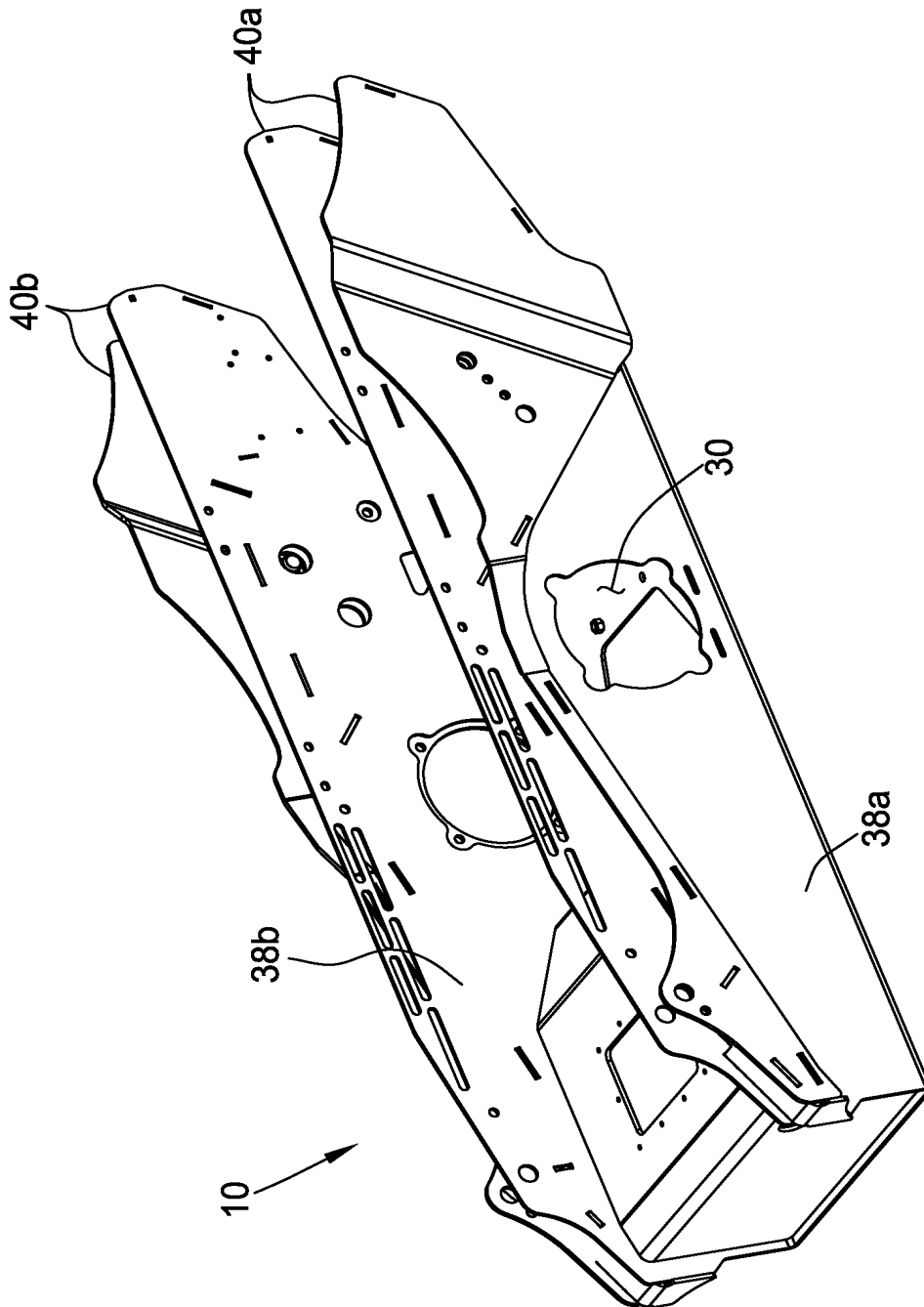


FIG. 4

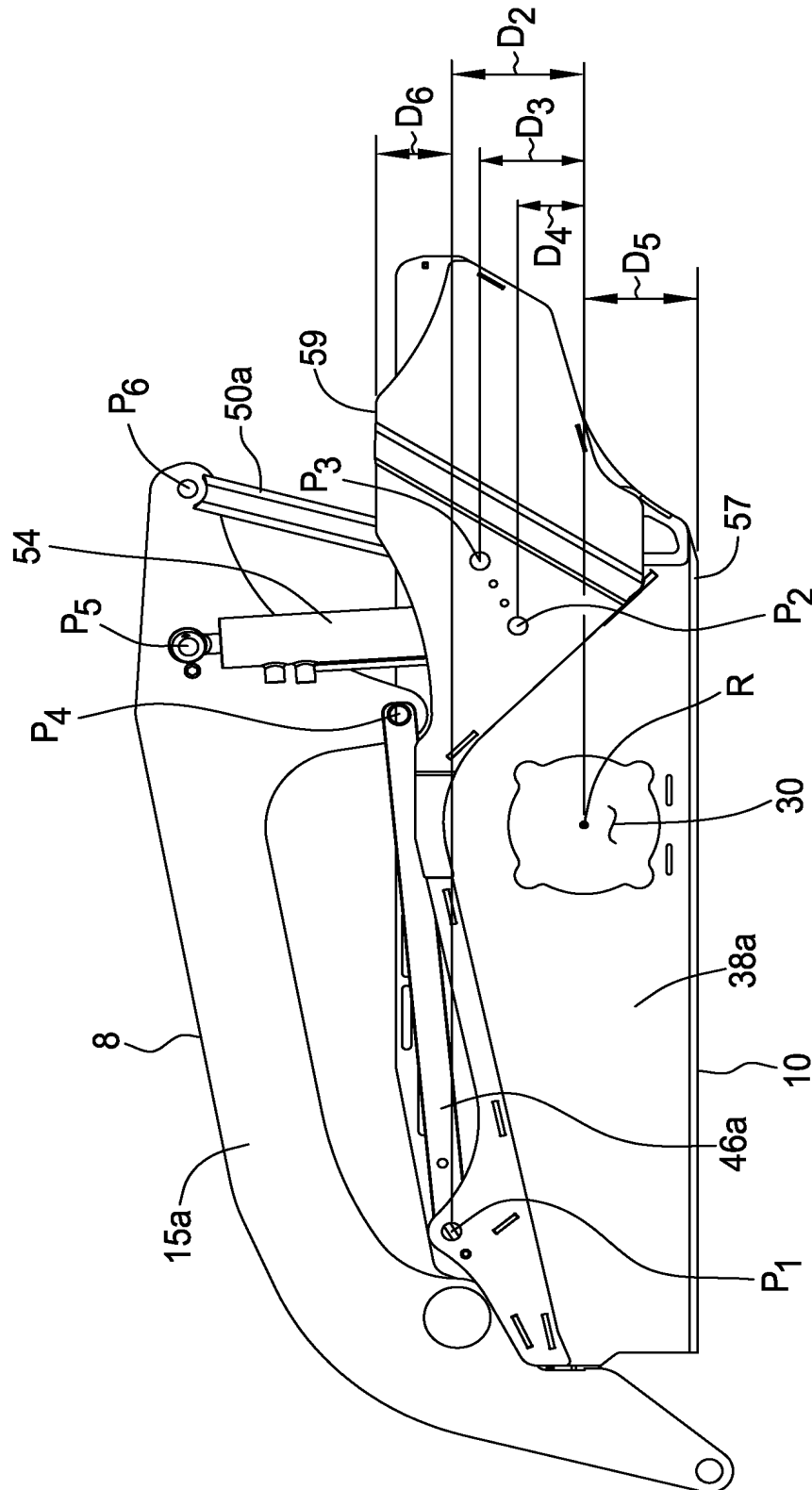


FIG. 5

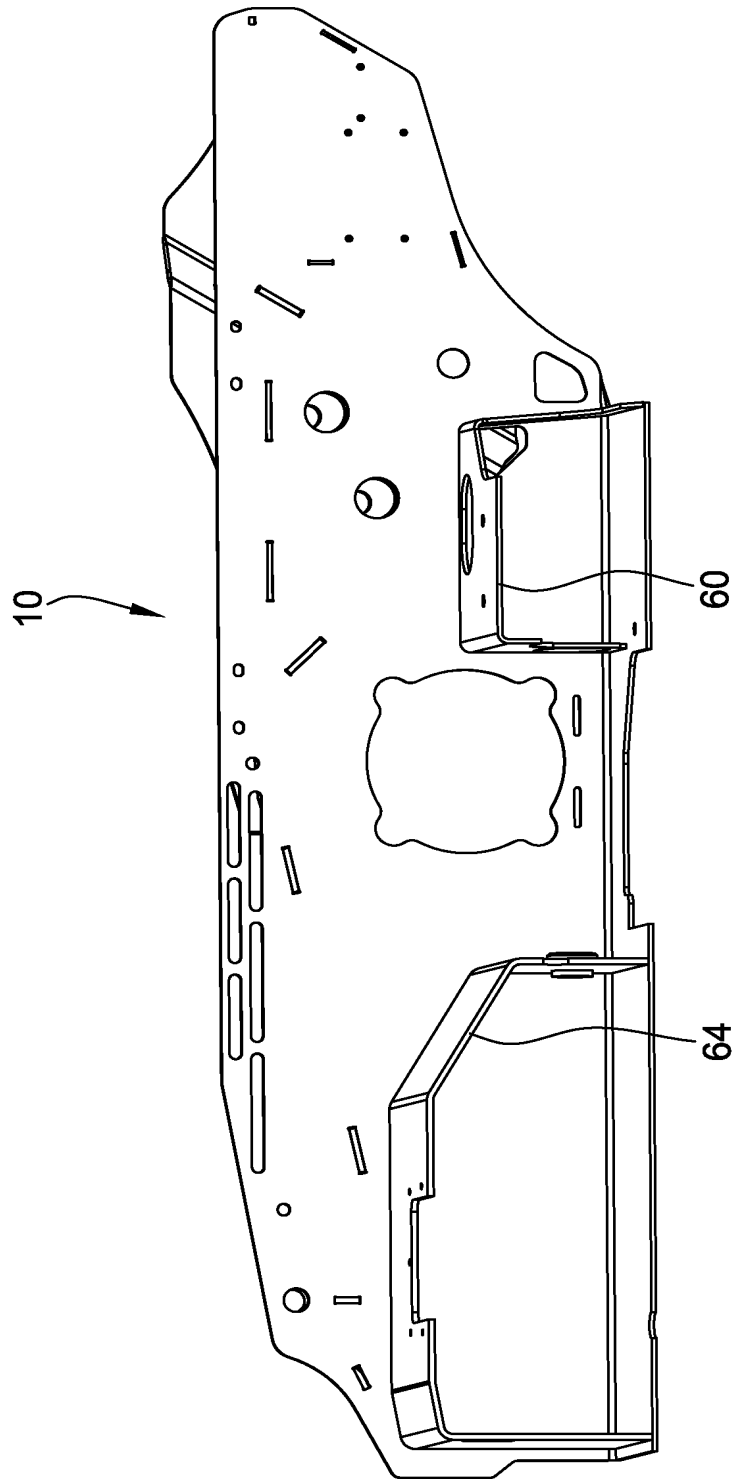


FIG. 6

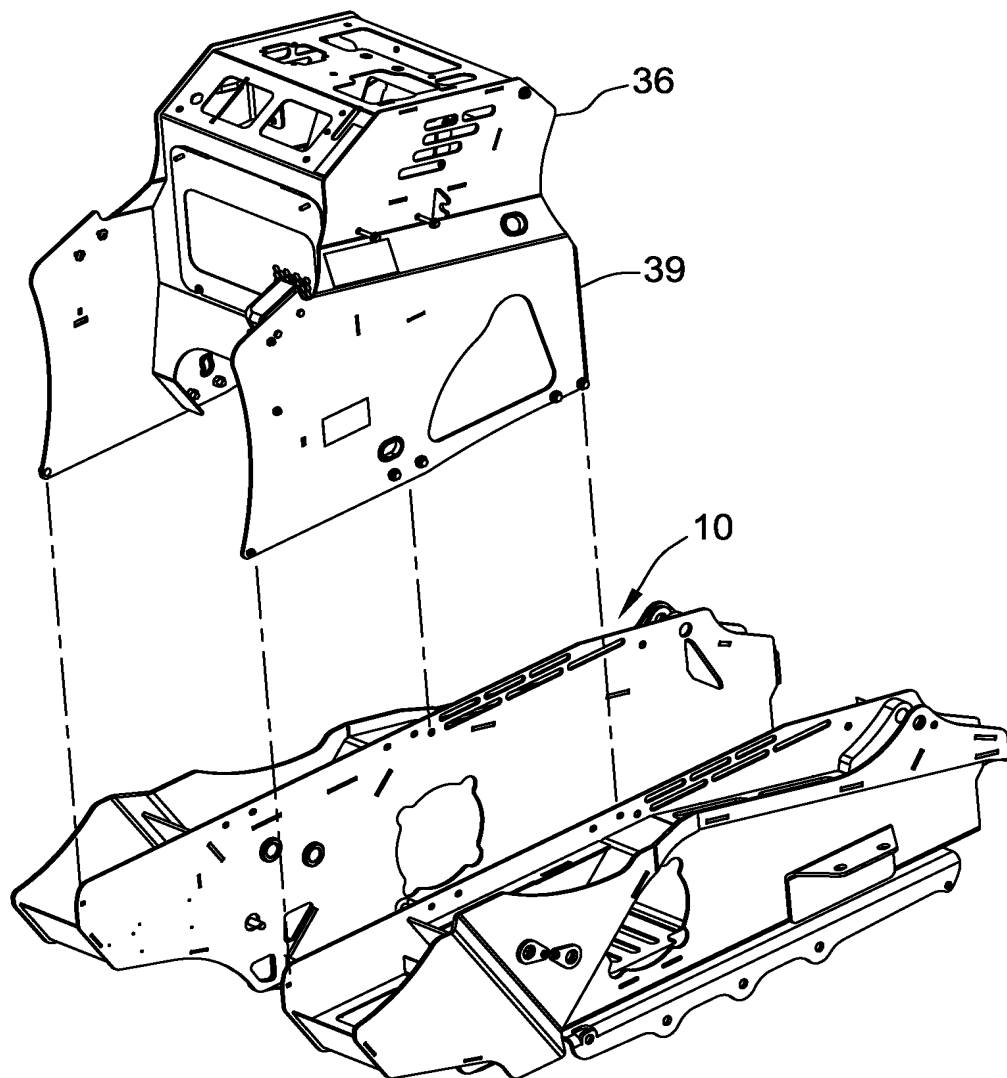


FIG. 7

First Named Inventor: Brad Thomas
 Application Number: 14/691,649
 Filing Date: April 21, 2015
 Art Unit: To Be Determined
 Confirmation No.: 7913

**DECLARATION AND ASSIGNMENT FOR
 UTILITY OR DESIGN APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and country of residence are as stated below next to my name.

I believe I am the original and sole inventor (if only one name is listed below) or an original and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

LOW PROFILE COMPACT TOOL CARRIERS

the specification of which: (check one)

☐ is attached hereto

☒ was filed on April 21, 2015 as Application Serial No. 14/691,649.

We hereby authorize and request our attorneys and agents, and the assignee or its delegated attorneys or agents, to insert above the application number and filing date of the application when known.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims and any claims amended by any amendment made prior to the date of this Declaration.

I acknowledge my duty to disclose all information which is material to patentability of this application in accordance with 37 CFR §1.56.

The above-identified application was made or was authorized to be made by me.

ASSIGNMENT

WHEREAS, the undersigned have invented improvements described in the above-identified application.

AND, WHEREAS, Vermeer Manufacturing Company of 1210 Vermeer Road East, Pella, Iowa 50219, a corporation of the State of Iowa (hereinafter referred to as "ASSIGNEE") is desirous of acquiring certain rights thereunder;

NOW, THEREFORE, for one dollar and other good and valuable consideration, receipt of all of which is hereby acknowledged, I have agreed to and do hereby sell, assign and transfer unto said ASSIGNEE the entire right, title and interest in and throughout the United States of America (including its territories and dependencies) and all countries foreign thereto in and to said invention, said United States application, any other United States applications (including provisional, non-provisional, divisional, continuing, or reissue applications) based in whole or in part on said United States application or in whole or in part on said invention, any foreign applications based in whole or in part on any of the aforesaid United States applications or in whole or in part on said invention, and any and all patents (including extensions thereof) of any country which have been or may be granted on any of the aforesaid applications or on said invention or any part thereof;

TO BE HELD AND ENJOYED by said ASSIGNEE, its successors and assigns, as fully and entirely as the same would have been held and enjoyed by me had no sale and assignment of said interest been made;

AND I hereby authorize and request the Commissioner of Patents of the United States of America to issue any and all United States patents which may be granted upon said United States applications or any of them, or upon said invention or any part thereof, to said ASSIGNEE;

AND I hereby agree for myself and for my heirs, executors and administrators, to execute without further consideration any further lawful documents and any further assurances, and any provisional, non-provisional, divisional, continuing, reissue, or other applications for patents of any country, that may be deemed necessary by said ASSIGNEE fully to secure to said ASSIGNEE its interest as aforesaid in and to said invention or any part thereof, and in and to said several patents or any of them;

AND I hereby covenant for myself and my legal representatives that I have granted no right or license to make, use or sell said invention, to anyone except said ASSIGNEE, that prior to the execution of this deed my right, title and interest in said invention had not been otherwise encumbered, and that I have not executed and will not execute any instrument in conflict herewith.

PRIORITY CLAIM

I hereby claim foreign priority benefits under 35 U.S.C. §119 (a)-(d) or (f) or 365(b) of any foreign application(s) for patent or inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below, and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed:

Priority Claimed

COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY NOT CLAIMED	CERTIFIED COPY ATTACHED
				☐ Yes ☐ No
				☐ Yes ☐ No

CLAIM FOR BENEFIT OF PROVISIONAL APPLICATION(S)

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below.

APPLICATION NUMBER(S)	FILING DATE (day, month, year)
62/118,860	20 February 2015

**CLAIM FOR BENEFIT OF EARLIER U.S. APPLICATION(S)
UNDER 35 U.S.C. §120**

(complete this part only if this is a divisional, continuation or CIP application)

I hereby claim the benefit under 35 U.S.C. §120 of any United States application(s), or 365(c) of any PCT International application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose material information as defined in 37 CFR §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

U.S. PARENT APPLICATION OR PCT PARENT NUMBER	PARENT FILING DATE (day, month, year)	STATUS (patent and number, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment of not more than five (5) years, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor Brad Thomas

Inventor's signature *Brad Thomas* Date 5/8/15

Residence Pleasant Hill, Iowa Country of Residence US

Post Office address 465 Hillside Court
Pleasant Hill, Iowa 50327

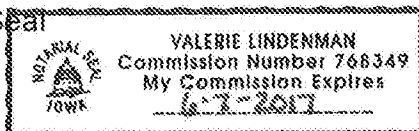
STATE OF Iowa

ss.

COUNTY OF Marion

This 8th day of May, 2015 before me personally came the above-named **Brad Thomas**, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal



Valerie Lindenman
 (Notary Public)

Full name of second joint inventor Louis HartkeInventor's signature *Louis Hartke* Date 5/5/15Residence Pella, Iowa Country of Residence USPost Office address 2005 Highway 163Pella, Iowa 50219

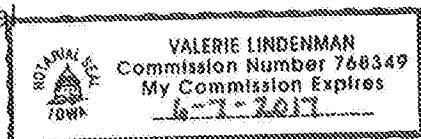
STATE OF

ss.

COUNTY OF

This 5th day of May, _____ before me personally came the above-named **Louis Hartke**, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal



Valerie Lindenman
(Notary Public)

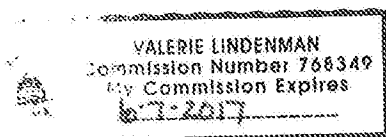
Full name of third joint inventor Greg LangenfeldInventor's signature *Greg Langenfeld* Date 5/18/2015Residence Bettendorf, Iowa Country of Residence USPost Office address 2425 Baron CourtBettendorf, Iowa 52722STATE OF Iowa

ss.

COUNTY OF Marion

This 18th day of May, 2015 before me personally came the above-named **Greg Langenfeld**, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal



Valerie Lindenman
(Notary Public)

Full name of fourth joint inventor Matt Hutchinson

Inventor's signature *Matt Hutchinson* Date 5/4/15

Residence Pella, Iowa Country of Residence US

Post Office address 410 Highway T14

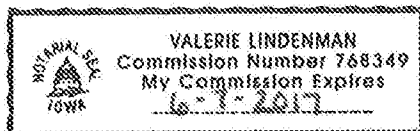
Pella, Iowa 50219

STATE OF Iowa ss.

COUNTY OF Marion

This 4th day of May, 2015 before me personally came the above-named **Matt Hutchinson**, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal



Valerie Lindenman
(Notary Public)

EXPLANATION OF ACKNOWLEDGEMENT

By signing the declaration, you acknowledge your duty to disclose to the U.S. Patent and Trademark Office information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, 1.56. Material information includes any information concerning whether:

The subject matter of this application was known or used by others in the United States before your invention thereof; or

The subject matter of this application was patented or described in any printed publication in any country before your invention thereof or more than one year prior to the date of this application; or

The subject matter of this application was in public use, offered for sale or on sale in the United States more than one year prior to the filing date of this application; or

The subject matter of this application was first patented or made the subject of an inventor's certificate issued in any country foreign to the United States as an application filed by you or your representatives or assigns more than twelve months prior to the date of this application; or

any application for patent or inventor's certificate on the subject matter of this application has been filed by your representatives or assigns in any foreign country.

In addition, you must advise us of the closest prior art (including your own patents and publications) of which you are aware so that we may bring it to the attention of the U.S. Patent and Trademark Office.

This duty to disclose material information continues after the application is filed. During the pendency of this patent application, each person substantially involved in the preparation or prosecution of this patent application, including each inventor, has a duty to disclose to the U.S. Patent and Trademark Office all known information which would be material to patentability. Failure to meet this duty can result in an unenforceable and/or invalid patent.

Any of the above information should be brought to the attention of the U.S. Patent and Trademark Office within three months of filing of this application, or within three months of acquiring such information, whichever is later. Accordingly, please promptly advise us of any of the above information, or any other information that may be material to patentability and is either presently known to you or later becomes known to you during the pendency of this application.

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT3771581

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
BRAD THOMAS	05/08/2015
LOUIS HARTKE	05/05/2015
GREG LANGENFELD	05/18/2015
MATT HUTCHINSON	05/04/2015
RECEIVING PARTY DATA	
Name:	VERMEER MANUFACTURING COMPANY
Street Address:	1210 VERMEER ROAD EAST
City:	PELLA
State/Country:	IOWA
Postal Code:	50219
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	15062801
CORRESPONDENCE DATA	
Fax Number:	(314)612-2307
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
Phone:	314-621-5070
Email:	USpatents@armstrongteasdale.com
Correspondent Name:	PATENT DOCKET DEPARTMENT ARMSTRONG TEASD
Address Line 1:	7700 FORSYTH BOULEVARD
Address Line 2:	SUITE 1800
Address Line 4:	ST. LOUIS, MISSOURI 63105
ATTORNEY DOCKET NUMBER:	31681-41
NAME OF SUBMITTER:	MICHAEL J. VANDER MOLEN
SIGNATURE:	/Michael J. Vander Molen/
DATE SIGNED:	03/07/2016
This document serves as an Oath/Declaration (37 CFR 1.63).	
Total Attachments: 8	

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First Named Inventor: Brad Thomas
 Application Number: 14/691,649
 Filing Date: April 21, 2015
 Art Unit: To Be Determined
 Confirmation No.: 7913

**DECLARATION AND ASSIGNMENT FOR
 UTILITY OR DESIGN APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and country of residence are as stated below next to my name.

I believe I am the original and sole inventor (if only one name is listed below) or an original and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

LOW PROFILE COMPACT TOOL CARRIERS

the specification of which: (check one)

☐ is attached hereto

☒ was filed on April 21, 2015 as Application Serial No. 14/691,649.

We hereby authorize and request our attorneys and agents, and the assignee or its delegated attorneys or agents, to insert above the application number and filing date of the application when known.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims and any claims amended by any amendment made prior to the date of this Declaration.

I acknowledge my duty to disclose all information which is material to patentability of this application in accordance with 37 CFR §1.56.

The above-identified application was made or was authorized to be made by me.

ASSIGNMENT

WHEREAS, the undersigned have invented improvements described in the above-identified application.

AND, WHEREAS, Vermeer Manufacturing Company of 1210 Vermeer Road East, Pella, Iowa 50219, a corporation of the State of Iowa (hereinafter referred to as "ASSIGNEE") is desirous of acquiring certain rights thereunder;

NOW, THEREFORE, for one dollar and other good and valuable consideration, receipt of all of which is hereby acknowledged, I have agreed to and do hereby sell, assign and transfer unto said ASSIGNEE the entire right, title and interest in and throughout the United States of America (including its territories and dependencies) and all countries foreign thereto in and to said invention, said United States application, any other United States applications (including provisional, non-provisional, divisional, continuing, or reissue applications) based in whole or in part on said United States application or in whole or in part on said invention, any foreign applications based in whole or in part on any of the aforesaid United States applications or in whole or in part on said invention, and any and all patents (including extensions thereof) of any country which have been or may be granted on any of the aforesaid applications or on said invention or any part thereof;

TO BE HELD AND ENJOYED by said ASSIGNEE, its successors and assigns, as fully and entirely as the same would have been held and enjoyed by me had no sale and assignment of said interest been made;

AND I hereby authorize and request the Commissioner of Patents of the United States of America to issue any and all United States patents which may be granted upon said United States applications or any of them, or upon said invention or any part thereof, to said ASSIGNEE;

AND I hereby agree for myself and for my heirs, executors and administrators, to execute without further consideration any further lawful documents and any further assurances, and any provisional, non-provisional, divisional, continuing, reissue, or other applications for patents of any country, that may be deemed necessary by said ASSIGNEE fully to secure to said ASSIGNEE its interest as aforesaid in and to said invention or any part thereof, and in and to said several patents or any of them;

AND I hereby covenant for myself and my legal representatives that I have granted no right or license to make, use or sell said invention, to anyone except said ASSIGNEE, that prior to the execution of this deed my right, title and interest in said invention had not been otherwise encumbered, and that I have not executed and will not execute any instrument in conflict herewith.

PRIORITY CLAIM

I hereby claim foreign priority benefits under 35 U.S.C. §119 (a)-(d) or (f) or 365(b) of any foreign application(s) for patent or inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below, and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed:

Priority Claimed

COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY NOT CLAIMED	CERTIFIED COPY ATTACHED
				☐ Yes ☐ No
				☐ Yes ☐ No

CLAIM FOR BENEFIT OF PROVISIONAL APPLICATION(S)

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below.

APPLICATION NUMBER(S)	FILING DATE (day, month, year)
62/118,860	20 February 2015

**CLAIM FOR BENEFIT OF EARLIER U.S. APPLICATION(S)
UNDER 35 U.S.C. §120**

(complete this part only if this is a divisional, continuation or CIP application)

I hereby claim the benefit under 35 U.S.C. §120 of any United States application(s), or 365(c) of any PCT International application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose material information as defined in 37 CFR §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

U.S. PARENT APPLICATION OR PCT PARENT NUMBER	PARENT FILING DATE (day, month, year)	STATUS (patent and number, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment of not more than five (5) years, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor Brad Thomas

Inventor's signature *Brad Thomas* Date 5/8/15

Residence Pleasant Hill, Iowa Country of Residence US

Post Office address 465 Hillside Court
Pleasant Hill, Iowa 50327

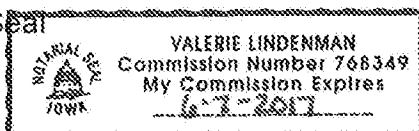
STATE OF Iowa

ss.

COUNTY OF Marion

This 8th day of May, 2015 before me personally came the above-named **Brad Thomas**, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal



Valerie Lindenman
 (Notary Public)

Full name of second joint inventor Louis HartkeInventor's signature *Louis Hartke* Date 5/5/15Residence Pella, Iowa Country of Residence USPost Office address 2005 Highway 163Pella, Iowa 50219

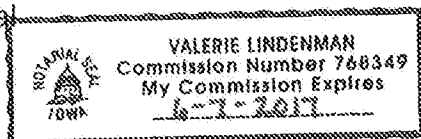
STATE OF

ss.

COUNTY OF

This 5th day of May, _____ before me personally came the above-named **Louis Hartke**, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal



Valerie Lindenman
(Notary Public)

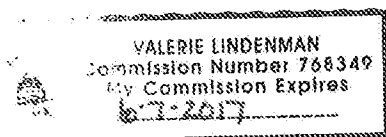
Full name of third joint inventor Greg LangenfeldInventor's signature *Greg Langenfeld* Date 5/18/2015Residence Bettendorf, Iowa Country of Residence USPost Office address 2425 Baron CourtBettendorf, Iowa 52722STATE OF Iowa

ss.

COUNTY OF Marion

This 18th day of May, 2015 before me personally came the above-named **Greg Langenfeld**, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal



Valerie Lindenman
(Notary Public)

Full name of fourth joint inventor Matt Hutchinson

Inventor's signature *Matt Hutchinson* Date 5/4/15

Residence Pella, Iowa Country of Residence US

Post Office address 410 Highway T14

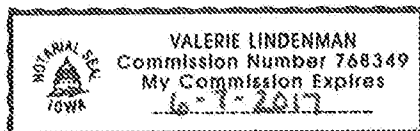
Pella, Iowa 50219

STATE OF Iowa ss.

COUNTY OF Marion

This 4th day of May, 2015 before me personally came the above-named **Matt Hutchinson**, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal



Valerie Lindenman
(Notary Public)

EXPLANATION OF ACKNOWLEDGEMENT

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The subject matter of this application was known or used by others in the United States before your invention thereof; or

The subject matter of this application was patented or described in any printed publication in any country before your invention thereof or more than one year prior to the date of this application; or

The subject matter of this application was in public use, offered for sale or on sale in the United States more than one year prior to the filing date of this application; or

The subject matter of this application was first patented or made the subject of an inventor's certificate issued in any country foreign to the United States as an application filed by you or your representatives or assigns more than twelve months prior to the date of this application; or

any application for patent or inventor's certificate on the subject matter of this application has been filed by your representatives or assigns in any foreign country.

In addition, you must advise us of the closest prior art (including your own patents and publications) of which you are aware so that we may bring it to the attention of the U.S. Patent and Trademark Office.

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