



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
16.04.2014 Bulletin 2014/16

(51) Int Cl.:
G05G 1/06^(2006.01) G05G 9/047^(2006.01)

(21) Application number: **12187987.8**

(22) Date of filing: **10.10.2012**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
 Designated Extension States:
BA ME

(72) Inventor: **Conway, Simon Richard Desford, Leicestershire LE9 9JT (GB)**

(74) Representative: **Modiano, Micaela Nadia Modiano & Partners Via Meravigli 16 20123 Milano (IT)**

(71) Applicant: **CATERPILLAR INC. Peoria IL 61629-6490 (US)**

(54) **Joystick handle sock**

(57) A joystick handle cover for removable attachment to a joystick handle of a work vehicle, the joystick handle cover comprising: a cover body configured to surround the joystick handle, the cover body having a crown and a skirt extending from the crown; and an at least one opening to receive the joystick handle.

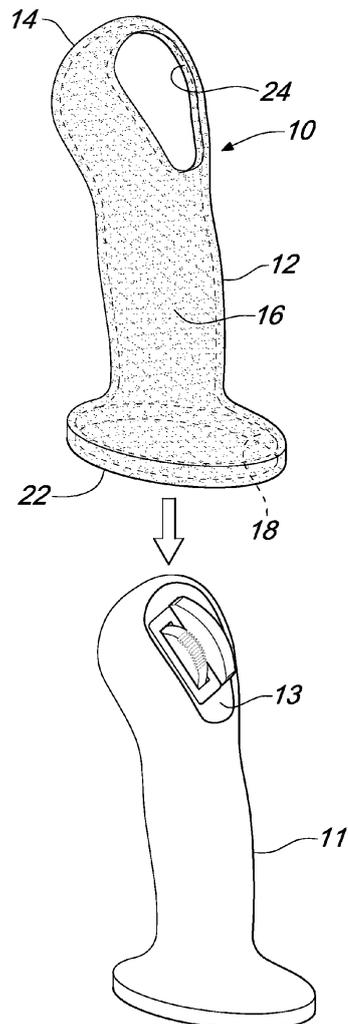


Fig. 1

Description

Technical Field

[0001] This disclosure relates generally to a control system for controlling a work implement on a work vehicle, and more particularly to a joystick controls system which provides an control interface of a work implement for the vehicle operator.

Background

[0002] Work vehicles may generally have at least one work implement. The work implement may have a variety of operations. Some work vehicles may be mobile machines (such as loaders and motor-graders). In these vehicle, the work implement may be used when the machine is traveling. In some the work implement may be used when the vehicle is static, such as excavators and cranes. The work implements may be operated manually. The operator may control at least the main functions of the machine through the use of joystick controllers.

[0003] The present disclosure is directed, at least in part, to improving or overcoming one or more aspects of the prior art system.

Brief Summary of the Invention

[0004] The present disclosure describes a joystick handle cover for removable attachment to a joystick handle of a work vehicle, the joystick handle cover comprising: a cover body configured to surround the joystick handle, the cover body having a crown and a skirt extending from the crown; and an at least one opening to receive the joystick handle.

Brief Description of the Drawings

[0005] The foregoing and other features and advantages of the present disclosure will be more fully understood from the following description of various embodiments, when read together with the accompanying drawings, in which:

Fig. 1 is an exploded view of a first embodiment of a joystick handle cover and a joystick handle according to the present disclosure;

Fig. 2 is an isometric view of the joystick handle cover of Fig. 1 positioned on the joystick handle; and

Fig. 3 is an isometric view of a second embodiment of a joystick handle cover positioned on a joystick handle according to the present disclosure.

Detailed Description

[0006] This disclosure generally relates to a joystick handle cover **10** for removable attachment onto a joystick handle **11**.

[0007] The joystick handle cover **10** may be modified according to a shape and dimension of the joystick handle **11**.

[0008] With reference Fig. 1, the joystick handle cover **10** may comprise a cover body **12**. Cover body **12** may be formed of a suitable material. Cover body **12** may be deformable. The deformable cover body **12** may enable the joystick handle cover **10** to be attached to the joystick handle **11** in a manner such that joystick handle cover **10** may easily slide onto the joystick handle **11**. The joystick handle cover **10** may not easily slide off of the joystick handle **11**.

[0009] Cover body **12** may be formed of a suitable material. In an embodiment cover body **12** may be formed of a tactile rubber. In an embodiment, cover body **12** may be formed of an elastomer. In an embodiment, cover body **12** may be formed of a thermoplastic. The thermoplastic is acrylonitrile butadiene styrene.

[0010] In an embodiment, the joystick handle **11** may have a lower portion having a first diameter and an upper portion having a second diameter. First diameter of the lower portion may be smaller than second diameter of the top portion. Cover body **12** may comprise a crown **14** for engaging and covering the upper portion of the joystick handle **11**. In an embodiment, crown **14** may be formed from a first material.

[0011] Cover body **12** may comprise a skirt **16** extending from the crown **14** for engaging and covering the lower portion of the joystick handle **11**. The opposite end of the skirt **16** may be a free end **22**. In an embodiment, the skirt **16** may be tubular. In an embodiment, the skirt **16** may comprise a plurality of sides mutually connected along respective edges.

[0012] Joystick handle cover **10** may comprise an opening **18**. The free end **22** may define the opening **18**. The opening **18** may be formed opposite the crown **14**. The opening **18** may receive the joystick handle **11**. Joystick handle cover **10** may be slid onto the joystick handle **11** for attachment thereto.

[0013] In an embodiment, the joystick handle cover **10** may further comprise a second opening **20**. Second opening **20** may be formed as a slit on the skirt **16**. The second opening **20** may extend to the opening **18**.

[0014] In an embodiment, second opening **20** may extend from the crown **14** to the opening **18**. A closing device may be provided to close the second opening. The closing device may be for example Velcro.

[0015] In an embodiment, the joystick handle cover **10** may further comprise an aperture **24** for access to a control panel **13** on the joystick handle **11**. The aperture **24** may be located on the skirt **16**. The aperture **24** may have a size that corresponds to the size of the control panel **13**. The aperture **24** may have a shape that corresponds to the shape of the control panel **13**.

[0016] In an embodiment, crown **14** may be formed from a first material and skirt **16** may be formed from a second material. Crown **14** may have a different Shore hardness index from the skirt **16**.

[0017] The joystick handle cover **10** may have a portion onto which a branding logo may be printed.

[0018] In an embodiment, the crown **14** and/ or the skirt **16** may comprises at least a portion that is transparent. An branding logo provided on the joystick handle **11** may be seen through crown **14** and/ or the skirt **16** when joystick handle cover **10** is attached to the joystick handle **11**. The branding logo may include a image or a design.

[0019] The cover body **12** may include a slip resistant portion there. The slip resistant portion may be provided on the crown **14** and/ or the skirt **16**. The crown **14** and/ or the skirt **16** may have a surface onto which the operator comes into contact. The surface may include a plurality of protrusions formed thereon. The protrusions may be situated in an array or pattern formed on the surface of the crown **14** and/ or the skirt **16**. The array of protrusions may provide a slip resistant surface for engagement by a finger or thumb of an operator using joystick handle **11** having the joystick handle cover **10** attached thereto. The protrusions may include a variety of patterns and placement of the protrusions in predetermined locations on the surface the crown **14** and/ or the skirt **16**.

[0020] The skilled person would appreciate that foregoing embodiments may be modified or combined to obtain the joystick handle cover **10** of the present disclosure.

Industrial Applicability

[0021] This disclosure describes a joystick handle cover **10**. The joystick handle cover **10** may be removably attached to the joystick handle **11**. The joystick handle cover **10** may be facilitate easier cleaning. A variety of joystick handle covers **10** may be available each having a different texture. The joystick handle cover **10** may be printed thereon for display of branding logos.

[0022] Accordingly, this disclosure includes all modifications and equivalents of the subject matter recited in the claims appended hereto as permitted by applicable law. Moreover, any combination of the above-described elements in all possible variations thereof is encompassed by the disclosure unless otherwise indicated herein.

[0023] Where technical features mentioned in any claim are followed by references signs, the reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, neither the reference signs nor their absence have any limiting effect on the technical features as described above or on the scope of any claim elements.

[0024] One skilled in the art will realise the disclosure may be embodied in other specific forms without departing from the disclosure or essential characteristics thereof. The foregoing embodiments are therefore to be considered in all respects illustrative rather than limiting of the disclosure described herein. Scope of the invention is thus indicated by the appended claims, rather than the foregoing description, and all changes that come within

the meaning and range of equivalence of the claims are therefore intended to be embraced therein.

5 Claims

1. A joystick handle cover (10) for removable attachment to a joystick handle (11) of a work vehicle, the joystick handle cover (10) comprising:

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a cover body (12) configured to surround the joystick handle (11), the cover body having a crown (14) and a skirt (16) extending from the crown (12); and

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an at least one opening (18) to receive the joystick handle (11).

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2. The joystick handle cover (10) of claim 1 wherein the opening (18) is formed opposite the crown (14) and defined by a free end (22) of the skirt (16).

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3. The joystick handle cover (10) of claim 2 further comprising a second opening (20) formed as a slit on the skirt, the second opening (20) extending to the opening (18).

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4. The joystick handle cover (10) of any one of the preceding claims wherein the cover body (12) is deformable.

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5. The joystick handle cover (10) of any one of the preceding claims wherein the skirt (6) is tubular.

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6. The joystick handle cover (10) of any one of the preceding claims wherein the cover body is formed of tactile rubber.

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7. The joystick handle cover (10) of any one of the preceding claims 1 to 5 is formed of an elastomer.

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8. The joystick handle cover (10) of any one of the preceding claims 1 to 5 is formed of a thermoplastic.

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9. The joystick handle cover (10) of claim 8 wherein the thermoplastic is acrylonitrile butadiene styrene.

10. The joystick handle cover (10) of any one of the preceding claims further comprising an aperture (24) for providing access to a control panel (13) on the joystick handle (11).

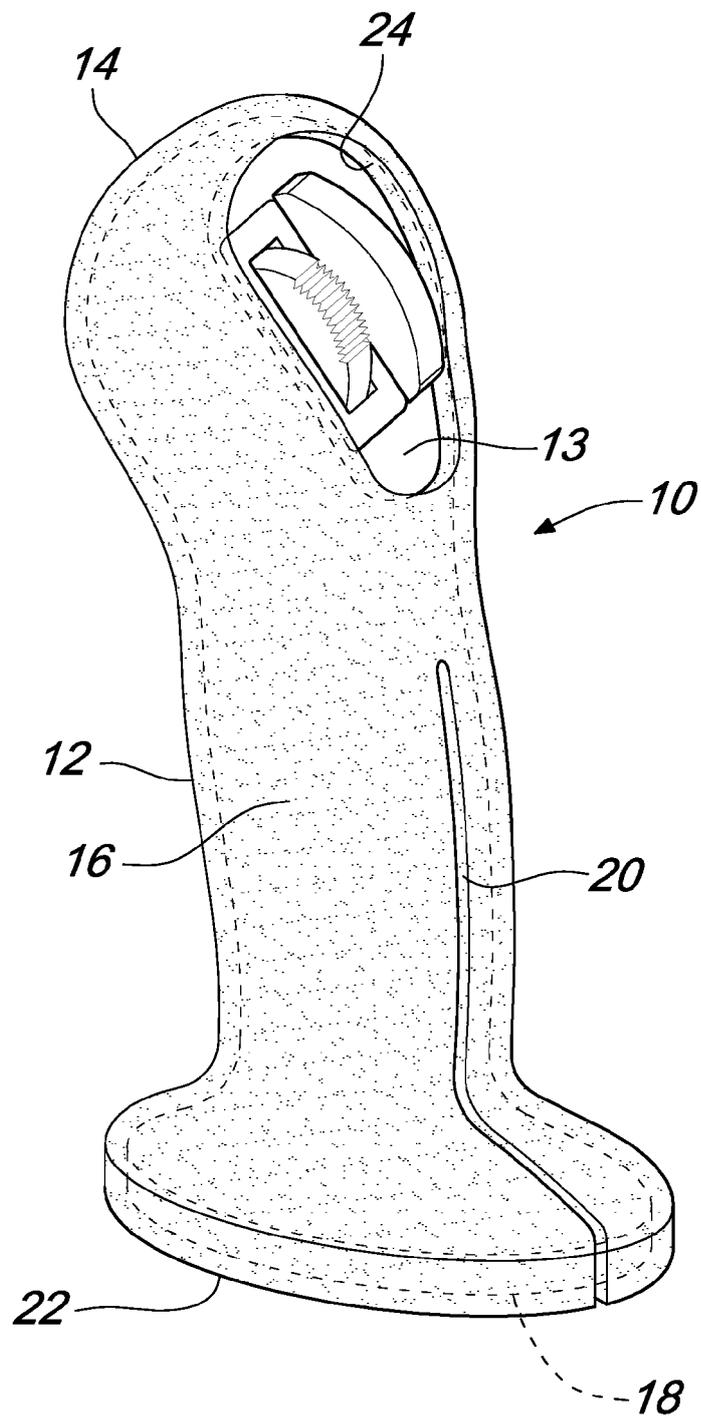


Fig. 3



EUROPEAN SEARCH REPORT

Application Number
EP 12 18 7987

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 April 2013	Examiner de Beurs, Marco
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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EPO FORM 1503 03/02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 12 18 7987

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82