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(71) Applicant: **Kubota Corporation**
Osaka-shi, Osaka 556-8601 (JP)

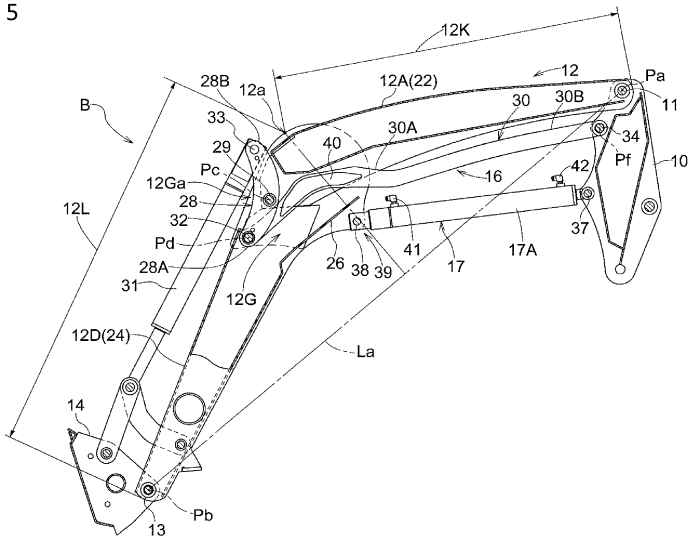
(72) Inventors:
- **Oyama, Kosuke**
  Sakai-City, Osaka 590-0823 (JP)
- **Ushiro, Kenzo**
  Sakai-City, Osaka 590-0823 (JP)

(74) Representative: **Global IP Europe**
Patentanwaltskanzlei
Pfarrstraße 14
80538 München (DE)

(54) **Front loader**

(57) This disclosure provides a front loader which improves operability in a low position operating state. The front loader includes a mechanical posture maintaining mechanism (16) for maintaining the posture of an implement, regardless of swing displacement of a boom (12). The boom (12) is formed in a curved shape in which a longitudinal central side thereof is located above. The posture maintaining mechanism (16) includes a swing link member (28) having an inner free-end part (28A) and an outer free-end part (28B) and disposed at a longitudinal center location of the boom (12) so as to be swingable about a third horizontal pivot (29) as a fulcrum, a base-end link member (30) extending between a fixed bracket (10) and the inner free-end part (28A), and a free-end link member (31) that links the outer free-end part (28B) to the implement. The boom (12) is provided with a base-end boom part (12K) located on the first pivot side from a peak (12a) that is furthest from a center-to-center straight line (La) and a free-end boom part (12L) located on the second pivot side from the peak (12a), and the free-end boom part (12L) is provided with a third pivot (29).

Fig. 5



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EUROPEAN SEARCH REPORT

Application Number
EP 14 18 4536

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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~~The present search report has been drawn up for all claims~~

Place of search	Date of completion of the search	Examiner
Munich	22 May 2015	Laurer, Michael

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EUROPEAN SEARCH REPORT

Application Number
EP 14 18 4536

DOCUMENTS CONSIDERED TO BE RELEVANT

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)

~~The present search report has been drawn up for all claims~~

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☒ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

1-8, 10(completely); 11-17(partially)

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 14 18 4536

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-3(completely); 10-17(partially)

   are directed to a front loader vehicle in which the position of the pivot of the swing link member or the whole swing link member is located in a special position with respect to the boom without any relation to a posture of the whole boom with respect to the vehicle body. The objective technical problem being solved by this group may be formulated as: Improve positioning of such swing link member with respect to a boom.

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2. claims: 4-8(completely); 10-17(partially)

   are directed to a front loader vehicle in which the position of the pivot of the swing link member or the whole swing link member is located in a special position with respect to the boom in a special a posture of the boom with respect to the vehicle body when the implement is lowered such that to substantially contact the ground. The objective technical problem being solved by this group may be formulated as: Improve positioning of such swing link member with respect to a boom in a special lowered posture.

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3. claims: 9(completely); 10-17(partially)

   is directed to a front loader vehicle in which the base-end link member has a specific curved form and is arranged in a special formation with respect to the boom and its driving boom cylinder. The objective technical problem being solved by this group may be formulated as: Improve the shape of base-end link member and its arrangement with respect to a boom and its driving cylinder.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 14 18 4536

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
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22-05-2015

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