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TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
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Declarations under Rule 4.17:

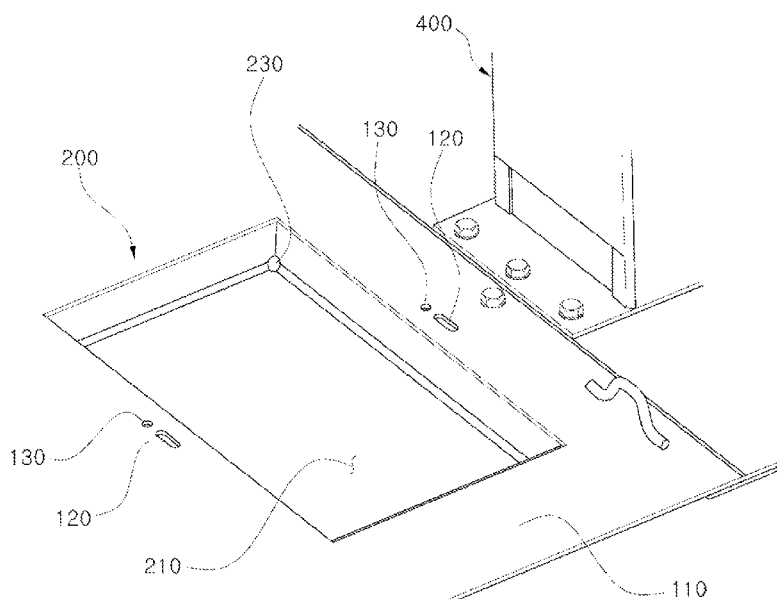
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(54) Title: CONSTRUCTION MACHINE HAVING RETENTION SYSTEM

FIG. 3



(57) Abstract: The present disclosure relates to a construction machine having a retention system. The construction machine comprises a chassis including moving means thereof, a deck plate mounted on the top of the chassis, and a tray having a predetermined dimension recessed on the surface of the deck plate.

CONSTRUCTION MACHINE HAVING RETENTION SYSTEM

TECHNICAL FIELD

The present disclosure relates to a construction machine, and more particularly, to
5 a compactor having a retention system for a lunch box, tools and so on.

BACKGROUND OF THE INVENTION

Construction machines such as compactors and road rollers are used to compact
soil or asphalt in the construction of roads. As they use the weight of the vehicle to
10 compress the surface being rolled, the working parts for compacting are mostly formed
of steel drums. However, such steel drums can be replaced by pneumatic tire rollers in
certain designs.

The compactors have two rows (front and back) of pneumatic tires located on
the front and back sides thereof, and the flexibility of the pneumatic tires provides a
15 kneading action that seals the surface and enables the compactor to operate effectively on
uneven ground with some vertical movement of the wheels.

Such a pneumatic tire compactor can be operated at higher speed than other
road machinery equipment. When sudden braking occurs during the traveling or
operation of the pneumatic tire compactor, small tools for quick service slide or fall
20 down from the compactor, thus causing them to be damaged or lost. In addition, it is
hard to safely retain an operator's lunch box or his personal items such as a wallet or
keys, so that they may be damaged or lost frequently.

SUMMARY OF THE INVENTION

25 Accordingly, the present disclosure has been made to solve the above-mentioned
problems, and it is an object of the present disclosure to provide a construction machine
having a retention system that can safely retain an operator's lunch box, small tools for
quick service, and small personal items during the traveling, stopping or parking of the
construction machine.

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It is another object of the present disclosure to provide a construction machine having a retention system that can have an improvement of an operator's accessibility in terms of maintenance/repair or use performance and can be conveniently used.

5 To accomplish the above-mentioned objects, according to the present disclosure, there is provided a construction machine having a retention system including: a chassis including moving means thereof; a deck plate mounted on the top of the chassis; and a tray having a predetermined dimension recessed on the surface of the deck plate.

10 According to the present disclosure, preferably, at least one fixing part is formed on the surface of the deck plate in proximity to an open portion of the tray.

According to the present disclosure, preferably, the fixing part comprises a fixing slot and a fixing hole formed close to the fixing slot.

15

According to the present disclosure, preferably, an elastic member is coupled to the fixing part.

20 According to the present disclosure, preferably, the elastic member comprises an elastic string and hooks disposed on both ends of the elastic string, and the hooks are coupled to the fixing part.

25 According to the present disclosure, preferably, the tray comprises at least one drain hole formed on one side of the bottom surface thereof.

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According to the present disclosure, preferably, the bottom surface of the tray is inclined downward toward the drain hole.

BRIEF DESCRIPTION OF THE DRAWINGS

30 FIG.1 is a perspective view showing a construction machine having a retention system according to the present disclosure.

FIG.2 is a perspective showing a chassis of a construction machine having a retention system according to the present disclosure.

FIG.3 is an exploded perspective view showing the retention system of the construction machine in FIG.2.

5 FIG.4 is an exploded perspective view showing a retention system having an elastic member in a construction machine according to the present disclosure.

DETAILED DESCRIPTION OF THE INVENTION

10 While this invention is illustrated and described in a preferred embodiment, the device may be produced in many different configurations, forms, and materials. There is depicted in the drawings, and will hereinafter be described in detail, a preferred embodiment of the invention, with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and the associated functional specifications for its construction and is not intended to limit the invention to
15 the embodiment illustrated. Those skilled in the art will envision many other possible variations within the scope of the present disclosure.

Referring to FIGS.1 to 4, the present disclosure describes a construction machine, particularly, a pneumatic tire compactor 1 comprising a chassis 100 including moving
20 means thereof, a deck plate 110 mounted on the top of the chassis 100, and a tray 210 having a predetermined dimension recessed on the surface of the deck plate 110. In this case, moving means may be at least a pair of pneumatic tires 10. The pneumatic tires 10 are located on the front and back sides of the chassis 10, and the pneumatic tire compactor 1 is configured to be moved on the asphalt surface by a traction force
25 associated with the pneumatic tires 10 to perform a compaction operation. And a cab frame 20 may be mounted on the chassis 100.

Further, a deck plate 110 is disposed on the chassis 100. In case of a pneumatic tire compactor, the surface of the ground that tires 10 made of rubber touch is very large,
30 and the weight of pneumatic tires 10 is much smaller than the steel drum. Therefore, installation of a ballast compartment is generally needed in order to supplement the lacking weight. The ballast compartment is generally installed in the chassis 100.

As shown in FIG.2, a seat 300 for an operator operating the compactor 1 is located on top of the chassis 100. Further, a controller 400 is located around the seat 300 so as to operate the compactor 1.

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The retention system 200 is located on the top of the chassis 100, especially close to the seat 300, so that it is easy for the operator to be accessed thereto. Preferably, the retention system 200 is located on the deck plate 110 in front of the controller 400.

FIG.3 is an exploded perspective view showing a retention system of the compactor in FIG.2. The retention system 200 includes a tray 210 having a predetermined dimension recessed on the surface of the deck plate 110. The tray 210 has a shape of a rectangular recess, but it is not limited thereto. The tray 210 may be formed in various shapes on the surface of the deck plate 110 according to the items to be retained thereinto. Even if not shown, partitioning walls are formed in the tray 210 so as to provide separated accommodation spaces. Further, the inner corners of the tray are rounded or tapered, so that the retained items can be easily drawn from the tray 210.

Various items like an operator's lunch box, small tools for quick service, and small personal belongings such as keys and a wallet may be accommodated into the tray 210. Such items are accommodated into the retention system 200 of the present disclosure. In case of the pneumatic tire compactor operating at relatively higher speed than other general construction machines, when sudden braking occurs or during the operation of the pneumatic tire compactor 1, the formation of the retention system 200 prevents the items from sliding or falling down from the pneumatic tire compactor 1, thus basically avoiding them to be damaged or lost.

In this case, the tray 210 has at least one drain hole 230 formed on one side thereof. Since the tray 210 is open on the top thereof, the dust or water entering the tray 210 can be gently discharged through the drain hole 230, thus preventing the items from being submerged in water or buried in soil or dust. The drain hole 230 may be formed

at a corner of the tray 210. So as to perform gentle discharging, the bottom surface of the tray 210 is inclined downward toward the drain hole 230.

FIG.4 is an exploded perspective view showing the retention system having an elastic member in the compactor according to the present disclosure. As shown in FIG.4, at least one fixing part is formed on the surface of the deck plate 110 in proximity to the open portion of the tray 210. Further, an elastic member 500 is coupled to the fixing part to prevent the items accommodated into the tray 210 from escaping from the tray 210.

In this case, the elastic member 500 is made of an extensible rubber bungee cord. The elastic member 500 includes an elastic string 510 and hooks 520 disposed on both ends of the elastic string 510. Further, the fixing part includes an elongated fixing slot 120 and a fixing hole 130 formed close to the elongated fixing slot 120. The fixing slot 120 is configured to allow each hook 520 of the elastic member 500 to be inserted thereinto, and the fixing hole 130 is configured to allow each hook 520 of the elastic member 500 to be withdrawn therefrom.

In addition thereto, of course, it will be obvious to those skilled in the art that the fixing part may include a hook disposed close to the open portion of the tray 210 and the elastic member 500 may be provided in the form of a band. If the elastic member 500 is provided in the form of a band, the band is locked to the hook to confine the items accommodated in the retention system 200.

When the items such as an operator's lunch box, tools, personnel belongings and the like are accommodated into the retention system 200 of the present disclosure, the elastic member 500 confines at least a portion of the items to retain the items in the tray 210 during the traveling or compaction of the compactor.

Further, small items easy to be lost can be kept at a position close to the operator, thus making the operator feel comfortable, and also, the operator's safety can be improved because trips up and down the ladder of the compactor are decreased.

In addition, small tools and hardware frequently used by the operator are kept at a position easily accessible by the operator in proximity to the operator's seat, thus efficiently improving the machine uptime.

5

The foregoing description of the embodiments of the invention has been presented for the purpose of illustration; it is not intended to be exhaustive or to limit the invention to the precise forms disclosed. Persons skilled in the relevant art can appreciate that many modifications and variations are possible in light of the above
10 teachings. It is therefore intended that the scope of the invention be limited not by this detailed description, but rather by the claims appended hereto.

CLAIMS

1. A construction machine having a retention system, the construction machine comprising:

- 5 a chassis including moving means thereof;
a deck plate mounted on the top of the chassis; and
a tray having a predetermined dimension recessed on the surface of the deck plate.

2. The construction machine having a retention system according to claim 10 1, wherein at least one fixing part is formed on the surface of the deck plate in proximity to an open portion of the tray.

3. The construction machine having a retention system according to claim 15 2, wherein the fixing part comprises a fixing slot and a fixing hole formed close to the fixing slot.

4. The construction machine having a retention system according to claim 2 or 3, wherein an elastic member is coupled to the fixing part.

20 5. The construction machine having a retention system according to claim 4, wherein the elastic member comprises an elastic string and hooks disposed on both ends of the elastic string, and the hooks are coupled to the fixing part.

6. The construction machine having a retention system according to claim 25 1, wherein the tray comprises at least one drain hole formed on one side of the bottom surface thereof.

7. The construction machine having a retention system according to claim 6, wherein the bottom surface of the tray is inclined downward toward the drain hole.

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FIG. 1

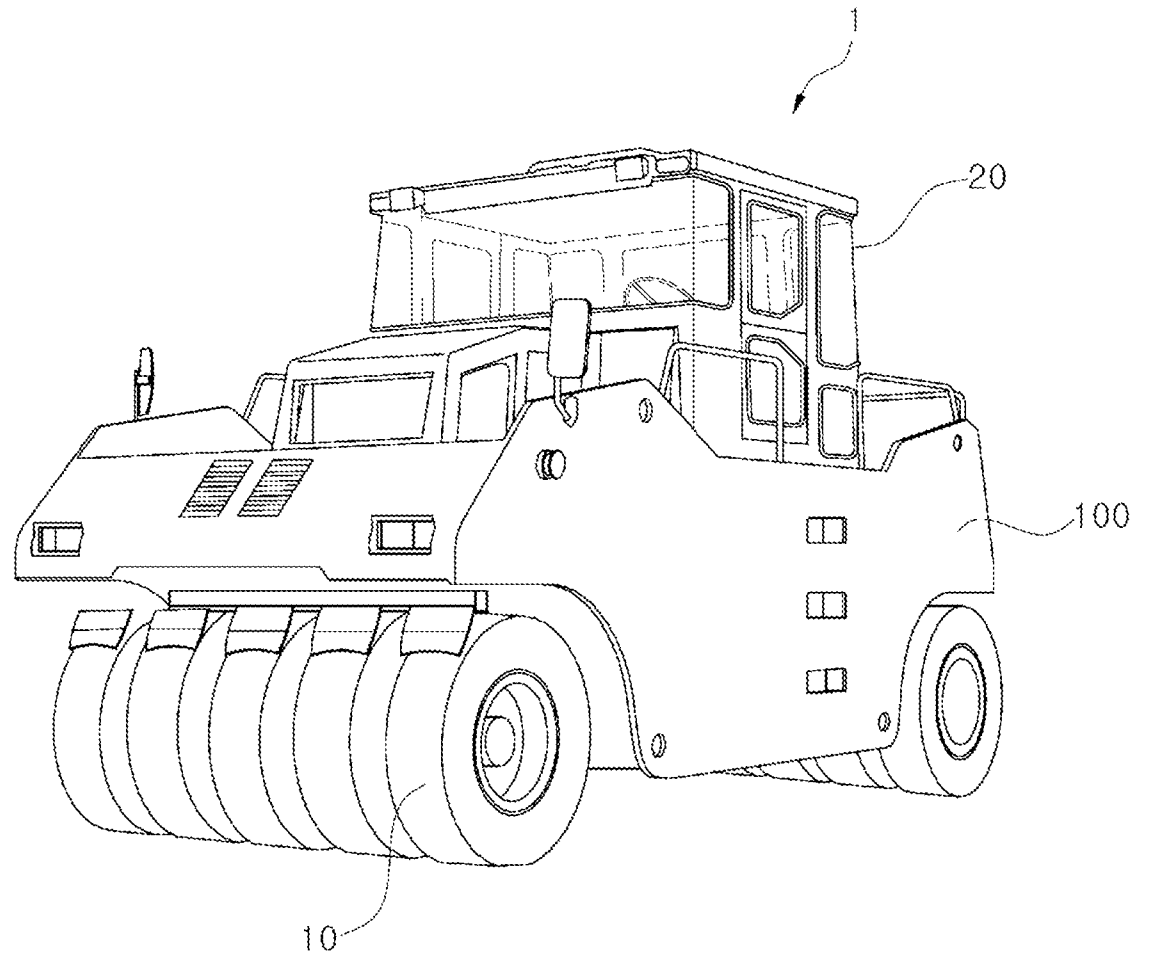


FIG. 2

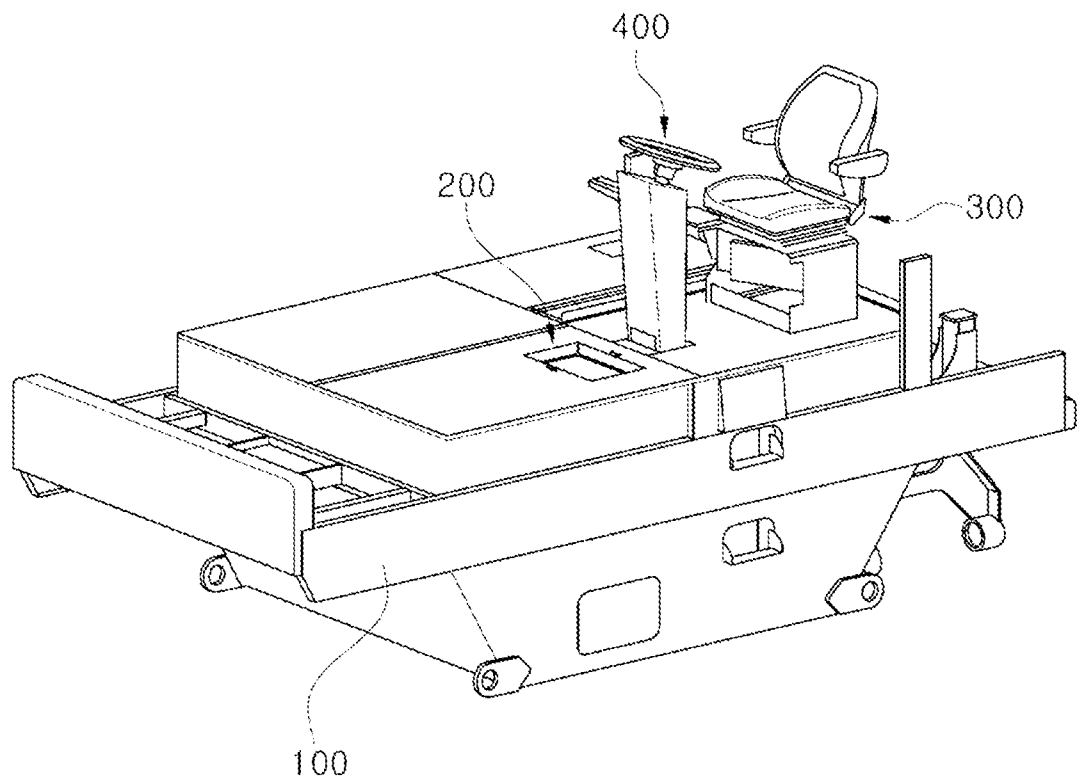


FIG. 3

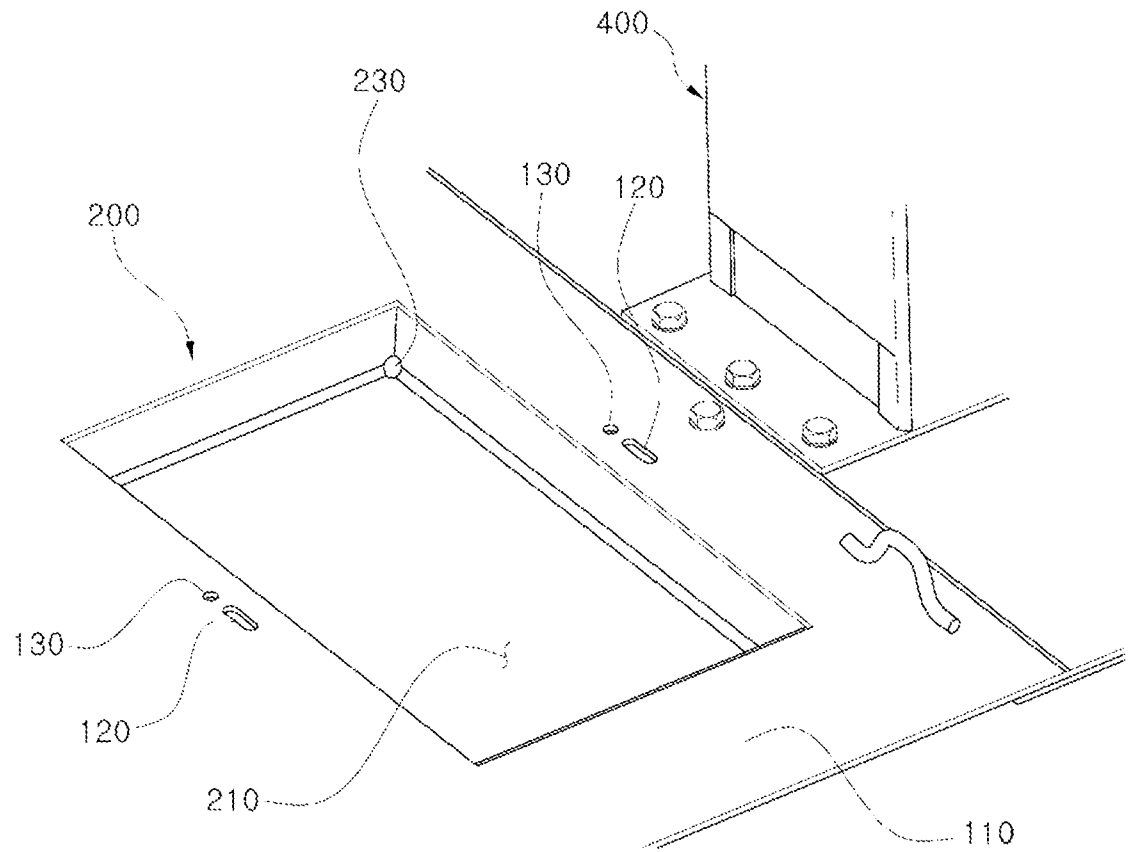
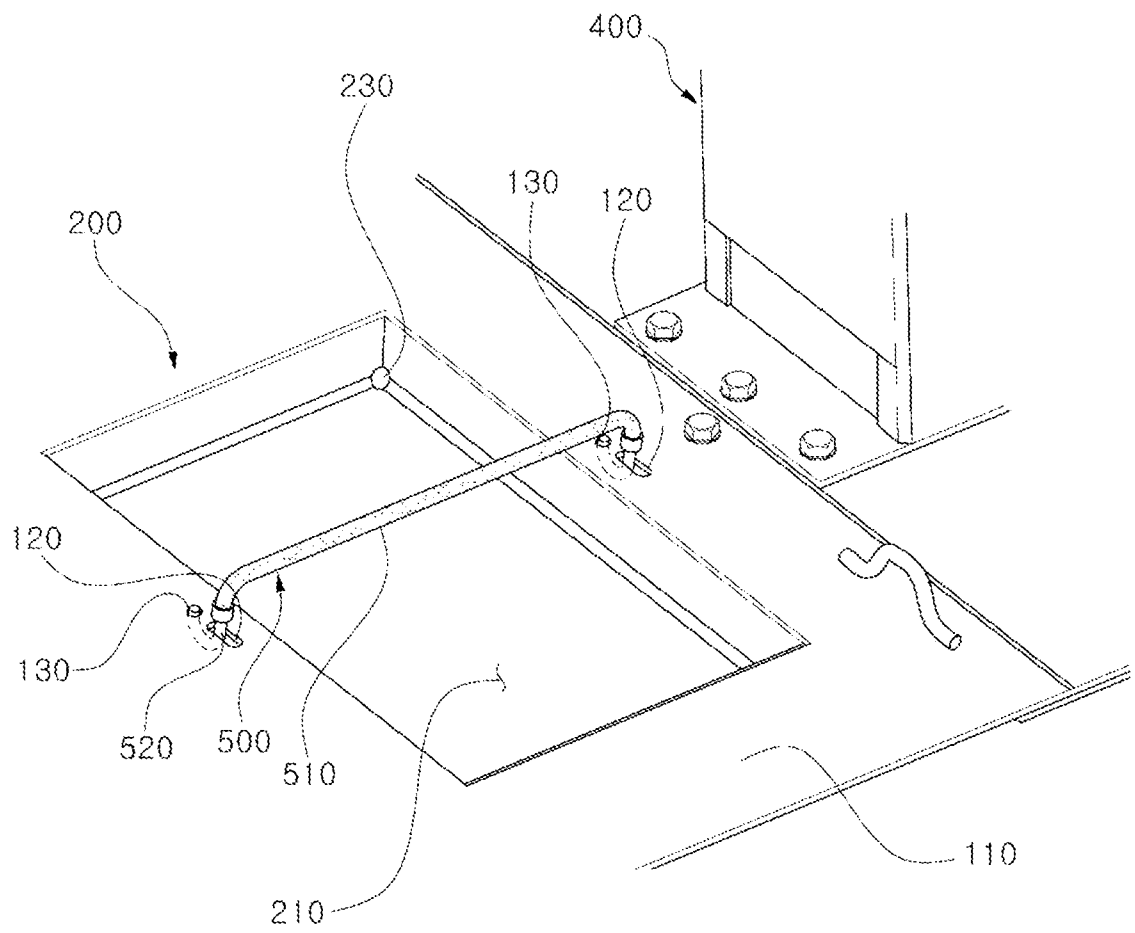


FIG. 4



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/045072**A. CLASSIFICATION OF SUBJECT MATTER****E02F 9/16(2006.01)i, E02F 9/00(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

E02F 9/16; B62D 25/08; E02F 9/00; B60H 1/00; B60S 1/50; B60R 7/04; B60K 11/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: construction, retention, chassis, deck, tray, recess, fix, elastic, drain, incline

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2008-087530 A (SHIN CATERPILLAR MITSUBISHI LTD.) 17 April 2008 See abstract, paragraphs [0006],[0010],[0011], claims 1,4,5, and figures 1,2A,3B.	1,6,7
Y		2-5
Y	JP 2536259 Y2 (YUTANI HEAVY INDUSTRIES CO., LTD.) 21 May 1997 See abstract, pages 2-3, and figure 1.	2-5
A	JP 2005-231614 A (SHIN CATERPILLAR MITSUBISHI LTD. et al.) 02 September 2005 See abstract, paragraphs [0043],[0044], claim 1, and figures 1a,4.	1-7
A	WO 2005-083186 A1 (HITACHI CONSTRUCTION MACHINERY CO., LTD.) 09 September 2005 See abstract, page 9, lines 21-26, claims 1,4, and figures 1,3.	1-7
A	JP 2003-003518 A (SHIN CATERPILLAR MITSUBISHI LTD.) 08 January 2003 See abstract, paragraphs [0012]-[0016], claim 1, and figures 1,12.	1-7



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2014/045072

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