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AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM,
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(54) Title: SERVICE CRANES FOR MEDICAL SYSTEMS

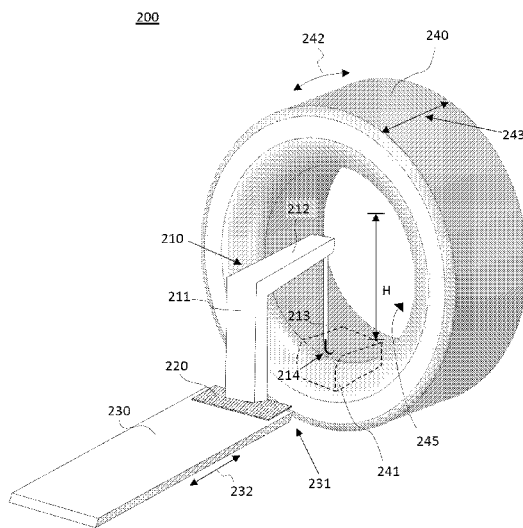


FIG. 2A

(57) Abstract: A removable crane for servicing a medical system is provided. In a first implementation, the removable crane couples to a couch of the medical system, wherein upon securing the removable crane to the couch, a jib of the removable crane is positioned to enter a bore of a drum of the medical system upon a movement of the couch towards the drum. In a second implementation, the crane is permanently coupled to the gantry, such that the crane can be in a first configuration for use and a second stowed configuration.



Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 23/63491

A. CLASSIFICATION OF SUBJECT MATTER

IPC - INV. B66C 23/20, B66C 23/04, B66C 23/68, B66C 23/18 (2023.01)

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ADD. B66C 23/24, B66C 23/62, B66F 9/06, A61B 50/10, A61B 90/50

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)

See Search History document

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

See Search History document

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

See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y --- A	JP 02211128 A (TOSHIBA CORP) 22 August 1990 (22.08.1990), entire document, especially Fig. 1, 2A, 2B; page 2, ln 45-73; page 3, ln 74 to page 5, ln 102;	1-10, 13-21, 30 ----- 11-12, 31
Y --- A	US 6,373,915 B1 (Fujimoto) 16 April 2002 (16.04.2002), entire document, especially Fig. 1A, 1B, 3A, 3B, 3C, 5A, 5B, 5C; col 1, ln 26-35; col 1, ln 36-40; col 3, ln 15-21; col 3, ln 65 to col 4, ln 10;	1-10, 13-21, 30 ----- 11-12, 31
A	JP 06254083 A (TOSHIBA CORP) 13 September 1994 (13.09.1994), entire document	1-21, 30-31
A	US 2019/0100415 A1 (Elekta AB (Publ)) 04 April 2019 (04.04.2019), entire document	1-21, 30-31
A	JP 08164133 A (TOSHIBA CORP) 25 June 1996 (25.06.1996), entire document	1-21, 30-31
A	JP 2003012292 A (GE MED SYS GLOBAL TECH CO LLC) 15 January 2003 (15.01.2003), entire document	1-21, 30-31
A	US 2004/0238472 A1 (Varildengen et al.) 02 December 2004 (02.12.2004), entire document	1-21, 30-31

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"D" document cited by the applicant in the international application

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 23/63491

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I: Claims 1-21, 30-31 directed to a removable crane for servicing a medical system.

Group II: Claims 22-29 directed to a medical system comprising a permanent crane.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

--- Continued in Supplemental Box ---

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-21, 30-31

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

--- Continuation of Box No. III Observations where unity of invention is lacking ---

SPECIAL TECHNICAL FEATURES

The invention of Group I includes the special technical feature of a removable crane for servicing a medical system, the removable crane configured to couple to a couch of the medical system, wherein upon securing the removable crane to the couch, a jib of the removable crane is positioned to enter a bore of a drum of the medical system upon movement of the couch towards the drum, not required by the claims of Group II.

The invention of Group II includes the special technical feature of a medical system comprising a gantry and a crane permanently coupled to the gantry, the crane having a first configuration for use and a second stowed configuration, not required by the claims of Group I.

COMMON TECHNICAL FEATURES

Groups I and II share the common technical features of a medical system comprising: a gantry; and a crane (generally).

However, this shared technical feature does not represent a contribution over prior art as being anticipated by US 2019/0100415 A1 to Elekta AB (Publ) (hereinafter 'Elekta'), which discloses a medical system (2, Fig. 1a-7; para[0024], 'an MRL facility 2') comprising: a gantry (8, Fig. 1a-7; para[0024], 'gantry 8'); and a crane (generally) (12, Fig. 1a-7; para[0024], 'A wall-mounted crane 12 (described in more detail below) is provided in the maintenance space 4, and is shown flat against the outer wall of the maintenance space 4 (i.e. with the jib fully extended and parallel to the wall)').

As the common technical features were known in the art at the time of the invention, these cannot be considered special technical feature that would otherwise unify the groups.

Therefore, Groups I-II lack unity under PCT Rule 13 because they do not share a same or corresponding special technical feature.