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(54) Title: MEDICAL TUBE CLEARANCE DEVICE

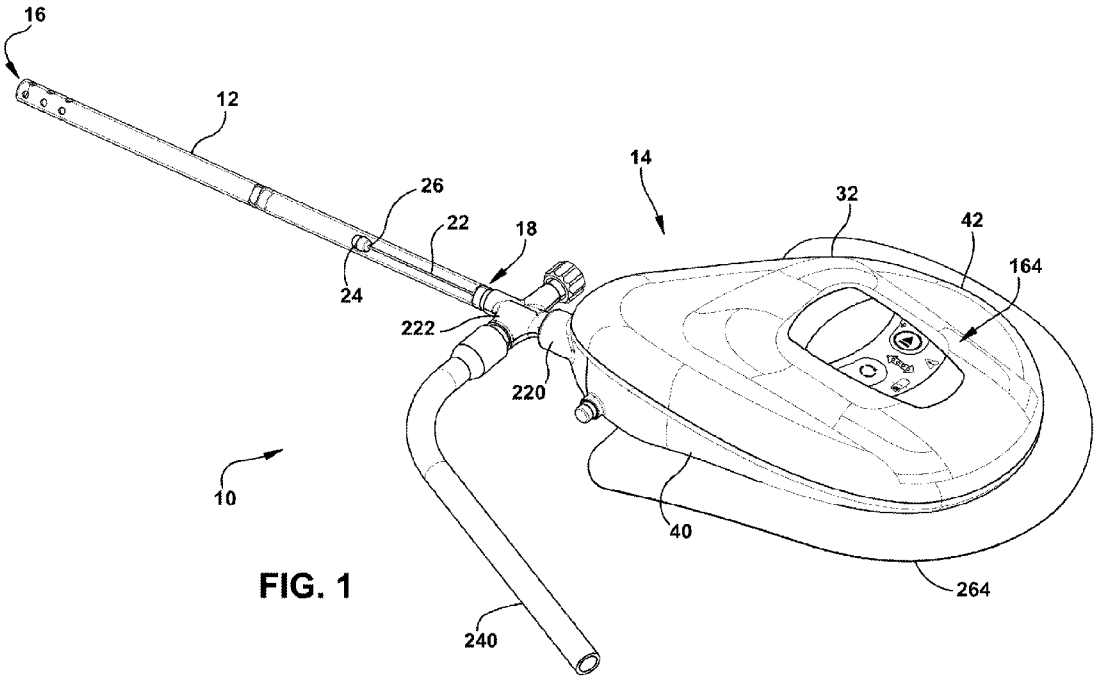


FIG. 1

(57) Abstract: A device for clearing obstructions from a medical tube includes a housing defining an interior, an exterior, and a port providing fluid communication therebetween. The device further includes an elongated guide wire residing at least partially within the housing, and first and second rollers defining a nip therebetween that are located within the housing. A guide wire extends through the nip and is drivable for advancement and retraction thereof through the port via rotation of the rollers.

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[Continued on next page]

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— *with international search report (Art. 21(3))*

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2020/013322

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:

see additional sheet

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 an 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.:

1-23

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.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2020/013322

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61M1/00
ADD.

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)
A61M

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2018/152059 A1 (CLEARFLOW INC [US]) 23 August 2018 (2018-08-23) paragraphs [0085], [0112], [0113]; figures 19C, 19E paragraph [0119]; figure 20	1-23
X	US 2015/231313 A1 (O'KEEFE KATHRYN BERNADINE [US] ET AL) 20 August 2015 (2015-08-20) cited in the application paragraphs [0045] - [0046]; figure 2	1-23

☐ 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

"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	Date of mailing of the international search report
20 April 2020	07/07/2020

Name and mailing address of the ISA/	Authorized officer
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		US 2020030502 A1	30-01-2020
		WO 2015123677 A1	20-08-2015

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-23

A device for clearing obstructions from a medical tube, comprising:a housing defining an interior, an exterior, and a port providing communication therebetween;an elongated guide wire residing at least partially within the housing; andfirst and second rollers adapted to define a nip therebetween;said guide wire adapted to extend through said nip and be drivable for advancement and retraction thereof through said port via rotation of said rollers.

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2. claims: 24-27

A device for clearing obstructions from a medical tube, comprising:a housing defining an interior, an exterior, and a port providing fluid communication therebetween;an elongated guide wire residing at least partially within the housing; andan outer surface portion of the housing is concave in order to accommodate a curvature of a patient's body to which the device is to be mounted in use;said guide wire is adapted to be drivable for advancement and retraction through said port and into a medical tube.
