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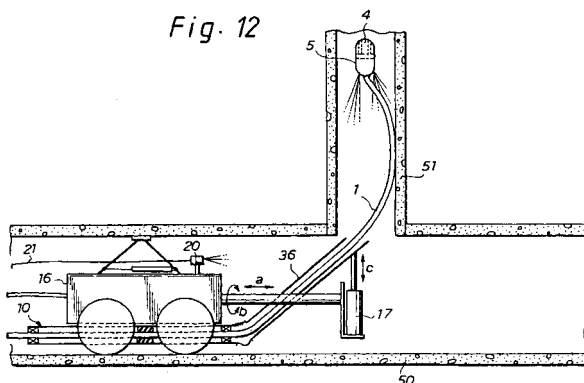
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(54) **Driving device, branch pipe inspecting/cleaning method, and branch pipe inspecting/cleaning device**

(57) A driving device enables an elastic hose (1) having a tip portion to which a TV camera (6) and/or a reverse jet nozzle (5) are attached, to be smoothly introduced into a branch pipe (51), so that the inside of the branch pipe can be positively and easily inspected and cleaned from the side of a main pipe (50). In one embodiment, a driving device (10) for moving the elastic hose (1) backward and forward by the action of fluid pressure is constituted by a pressure hose/cylinder unit (11) in which the elastic hose is inserted, a pig/piston unit (13) attached to the outer circumference of the elas-

tic hose (1) and sliding in the pressure hose (11), and a compressor (pressure fluid supplying unit) for alternately supplying compressed air (pressure fluid) into airtight spaces (S1, S2) formed with the pig (13) in the pressure hose (11). The driving device (10) moves the elastic hose (1) backward and forward always positively by a large constant driving force of not a conventional frictional force but the fluid pressure, so that even if the branch pipe has a plurality of curves, the elastic hose (1) can be always smoothly introduced into the branch pipe.

Fig. 12





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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US 4 756 510 A (KLAMM) 12 July 1988 (1988-07-12) * the whole document * -----	1	E03F7/12 E03F9/00
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			E03F G02B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 October 1999	Examiner Hannaart, J
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p> <p>& : member of the same patent family, corresponding document</p>			

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims 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 the first ten claims.

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:

☒ 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:

Claim 1 - Piston actuated driving device for moving an elastic hose



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**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
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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. Claim : 1

Piston actuated driving device for moving an elastic hose

2. Claim : 2

Driving device for moving an elastic hose using rollers
clamping a pressure bag

3. Claims: 3-18

Branch pipe inspection/cleaning device and method

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

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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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12-10-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4756510 A	12-07-1988	NONE	

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