

Search query (1): [SP]: A pig for inspecting and/or cleaning pipelines which transport, in particular, oil, gas or water, wherein the pig has at least one flexible plastics element (26), which is retained on a pig element designed preferably in the form of a pig body (13), wherein the plastics element (26), as seen from the pig element, has at least one electromechanical transducer, which extends in the longitudinal direction of the plastics element and is intended for detecting and/or effecting a change in shape of the plastics element (26). The invention also relates to a pig disc, in the elastic side region of which at least one electromechanical transducer is present as a sensor for detecting changes in the free inner cross section of a pipeline.

Results: 8

Search history

Search 1: [SP]: A pig for inspecting and/or cleaning pipelines which transport, in particular, oil, gas or water, wherein the pig has at least one flexible plastics element (26), which is retained on a pig element designed preferably in the form of a pig body (13), wherein the plastics element (26), as seen from the pig element, has at least one electromechanical transducer, which extends in the longitudinal direction of the plastics element and is intended for detecting and/or effecting a change in shape of the plastics element (26). The invention also relates to a pig disc, in the elastic side region of which at least one electromechanical transducer is present as a sensor for detecting changes in the free inner cross section of a pipeline. (Results 8)

1) Family number: 7926506 (US4227309A)

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Title: PIPELINE PIG HAVING GAUGING PLATE

Abstract: Source: US4227309A A pipeline pig is equipped with a gauging plate which consists of a flexible disc having strain gauges secured thereto so as to be subject to deformation when the disc makes contact with an obstruction or deformation in the pipe wall. The strain gauges are connected in a bridge circuit which goes out of balance when the disc is deformed. The output of the bridge circuit is connected to means for producing an output signal when the disc is bent rapidly but not when it is bent slowly so as not to respond to slow deformation due to build-up of debris in front of the pig.

Classifications:

International (IPC 8-9): G01B7/16 G01M3/00 (Advanced/Invention);

G01B7/16 G01M3/00 (Core/Invention)

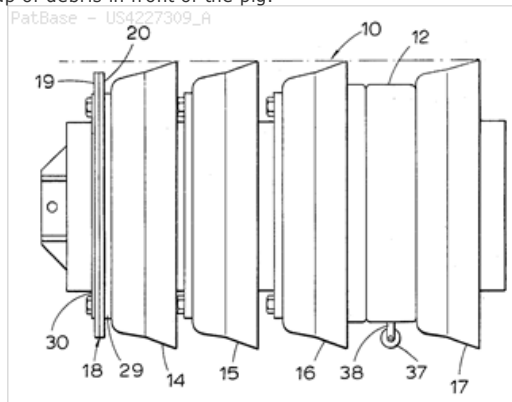
International (IPC 1-7): F17D5/00 G01B7/12 G01B7/14 G01B7/18

G01B7/28 G01BX

CPC: G01B7/16 G01M3/005 Y10S33/13

European: G01B7/16 G01M3/00C

US: 33/178E 33/544 33/DIG.13



Family:

Publication number	Publication date	Application number	Application date
DE2554388 A1	19760624	DE19752554388	19751203
DE2554388 B2	19781005	DE19752554388	19751203
DE2554388 C3	19790531	DE19752554388	19751203
GB1493369 A	19771130	GB19740055359	19741221
US4227309 A	19801014	US19770785073	19770406

Priority:

GB19740055359 19741221 US19750630502 19751110

Probable Assignee: UNDERGROUND LOCATION SERVICES

Assignee(s): (std): UNDERGROUND LOCATION SERVICES

Assignee(s): UNDERGROUND LOCATION SERVICES LIMITED ; UNDERGROUND LOCATION SERVICES LTD ; UNDERGROUND LOCATION SERVICES LTD STROUD GLOUCESTE ; UNDERGROUND LOCATION SERVICES LTD STROUD GLOUCESTERSHIRE GROSSBRITANNIEN

Inventor(s): (std): JONES TREVOR C ; TREVOR CLIFFORD JONES

Inventor(s): TREVOR CLIFFORD JONES MINCHINHAMPTON STROUD GLOUCE ; TREVOR CLIFFORD JONES MINCHINHAMPTON STROUD GLOUCESTERSHIRE GROSSBRITANNIEN ; WIRD SPAETER GENANNT WERDEN

2) Family number: 28063750 (US2003029256A)

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Title: Pig for detecting an obstruction in a pipeline

Abstract: Source: US2003029256A An obstacle detecting pig for preliminary inspection of a section of a pipeline travels through the section and determines if there are any restrictions that exceed industry guidelines or that might damage other pigs that require the full bore of the pipe. In a first embodiment, a disk-shaped segmented resilient member (14) is mounted in the body of the pig. Its outside diameter is smaller by a spacing (21) than the inside diameter of the pipeline (15). The spacing is set at the maximum tolerable size of the obstacle encountered. The deformation of the member (14) is transmitted by a linkage (22) to a slider (16) activating a switch system signaling that an obstacle has been encountered. A non-resiliently deformable checkup disk (19) may be provided at the rear end of the pig, to double check that a no-signal

passage through the pipe is not due to failure of the switching system. In a particularly preferred embodiment, the resilient member is a disc-shaped detector (46) made from an elastomer and provided at its leading surface with a scratch recording layer (51), for instance a layer of lead which is thin enough to follow resilient deformations of the elastomeric ring (50) as it encounters an obstacle, and return of the ring back to its regular, shape. The scratches caused on the recording layer are evaluated after the passage of the pig through the examined pipeline section. The detector is mounted directly on a slider (44) or the like operating device designed to produce electric signal when an anomaly is encountered. Preferably, the detector (46) is a replaceable element of the pig. In another embodiment described and claimed, the detector is comprised of a pair of flexible discs having embedded therein pairs of electronic signal providing means such as a magnet and a magnetic switch or sensor. The device is structurally simple thus providing low manufacturing and operation costs and simple operation.

Classifications:

International (IPC 8-9): F16L55/26 F16L55/28 F16L55/38

G01B5/12 (Advanced/Invention);

F16L55/26 G01B5/08 (Core/Invention)

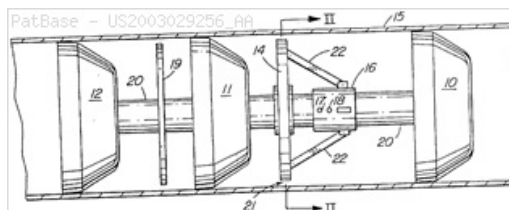
International (IPC 1-7): F16L55/26 F16L55/28 F16L55/38 G01B5/12

G01B7/12 G01M19/00

CPC: F16L55/38 F16L2101/30

European: F16L55/38 R16L101/30

US: 73/865.8 73/865.800P 73/866.5 73/866.500S



Family:

Publication number	Publication date	Application number	Application date
CA2229771 AA	19990818	CA19982229771	19980218
CA2261542 AA	19990818	CA19992261542	19990209
CA2261542 C	20071127	CA19992261542	19990209
CA2415067 AA	20040411	CA20022415067	20021223
CA2415067 C	20110906	CA20022415067	20021223
US2003029256 AA	20030213	US20020269520	20021011
US2004134289 AA	20040715	US20030899906	20031203
US6679129 BB	20040120	US20020269520	20021011
US6857329 BB	20050222	US20030899906	20031203

Priority:

CA19982229771 19980218

US19990250504 19990216

US20030899906 20031203

CA19992261542 19990209

US20010899906 20010706

CA20022415067 20021223

US20020269520 20021011

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Assignee(s): (std): DONSA INC ; SAVARD DONALD D

Assignee(s): DON INC SA

Inventor(s): (std): SAVARD DONALD D

Agent(s): GOWLING LAFLEUR HENDERSON LLP; NA; TRACEY S; HOVEY WILLIAMS LLP

3) Family number: 28153554 (US2001048139A)

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Title: Deformation gauge

Abstract: Source: US2001048139A A micromechanical sensor is described which contains electrodes that are disposed on a substrate, and electrode bars made of silicon that can move with regard to the electrodes. A deformation of the substrate is measured by determining differential changes in a capacity of the electrode bars in comparison to adjacently disposed electrodes. Two groups of electrode bars are preferably used which are interlocked with one another in an alternating comb-like manner, which are separate from one another, and are interconnected at the ends thereof in an electrically conductive manner, and which are anchored on the substrate.

Classifications:

International (IPC 8-9): G01B7/16 G01L5/00

G01N27/22 (Advanced/Invention);

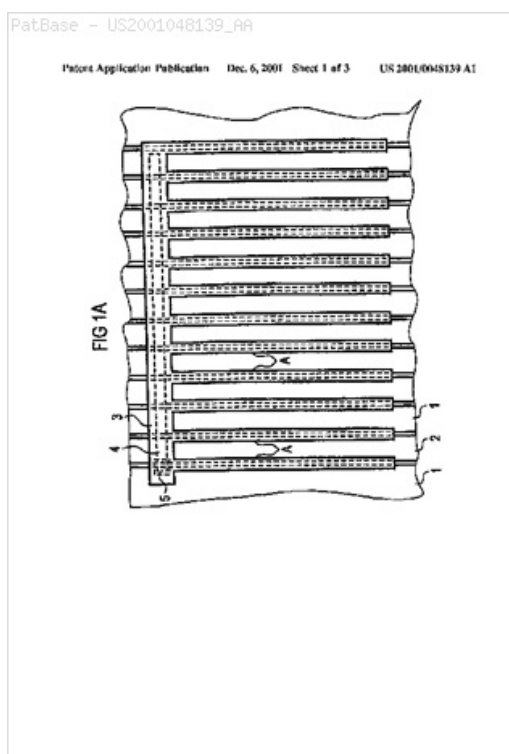
G01B7/16 G01L5/00 G01N27/22 (Core/Invention)

International (IPC 1-7): G01B7/16 G01L5/00 G01N27/22 H01L29/84

CPC: G01B7/22

European: G01B7/22

US: 257/415



Family:

Publication number	Publication date	Application number	Application date
DE59913964 D1	20061214	DE19995013964	19991104
EP1127243 A2	20010829	EP19990963212	19991104
EP1127243 B1	20061102	EP19990963212	19991104
JP2002529684 T2	20020910	JP20000579944T	19991104
US2001048139 AA	20011206	US20010849911	20010504
WO0026608 A2	20000511	WO1999DE03543	19991104
WO0026608 A3	20000727	WO1999DE03543	19991104

Priority:

DE19981050872 19981104 DE19995013964 19991104 WO1999DE03543 19991104

Probable Assignee: INFINEON TECHNOLOGIES AG

Assignee(s): (std): AIGNER ROBERT ; GLEHR MANFRED ; HIEROLD CHRISTOFER ; INFINEON TECHNOLOGIES AG ;
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Assignee(s): OPPERMANN KLAUS GUENTER

Inventor(s): (std): AIGNER ROBERT ; GLEHR MANFRED ; HIEROLD CHRISTOFER ; OPPERMANN KLAUS GUENTER ;
OPPERMANN KLAUS GUENTER

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT JP LU MC NL PT SE US

4) Family number: 24017544 (US2004111910A)

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Title: METHOD AND INSTRUMENT FOR MEASURING INSIDE DIAMETER OF CONDUIT

Abstract: Source: US2004111910A An apparatus for measuring an inner diameter of a pipeline according to the present invention is incorporated into a passage pig for checking passableness through the pipeline or a cleaning pig (60) for cleaning within the pipeline while running through the pipeline, the passage pig and the cleaning pig including at least one seal cup (60B to 60D) sealably sliding along an interior surface of the pipeline. The apparatus includes travel distance measuring means (65, 62D) for measuring a travel distance of the passage pig or the cleaning pig (60) within the pipeline; swing angle detector means (62E) for detecting a swing angle of a pig body during the travel distance measurement; displacement detector means (61) for individually detecting a radial displacement of the peripheral portion of the seal cup at a number of points along an entire circumference during the travel distance measurement; computing means (62C) for computing an output from each of said means; and recording means (62B) for recording an output from the computing means. The computing means (62C) delivers a detection result provided by the displacement detector means (61) corresponding to an output from the travel distance measuring means and a swing angle of the pig body at a travel position thereof.

Classifications:

International (IPC 8-9): B08B9/04 G01B21/14 G01B7/13 G01B7/287
G01B7/293 (Advanced/Invention);

B08B9/02 G01B21/10 G01B7/12 G01B7/28 (Core/Invention)

International (IPC 1-7): G01B21/14 G01B5/00 G01B5/20 G01B7/13

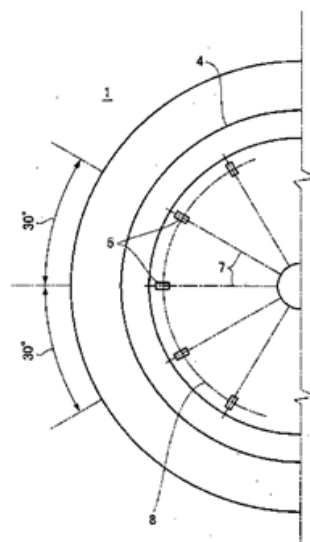
CPC: Y10S33/13 B08B9/0557 G01B7/13 G01B7/287 G01B7/293

European: B08B9/055L G01B7/13 G01B7/287 G01B7/293

US: 33/544 33/DIG.13

PatBase - US2004111910_AA

Patent Application Publication Jun. 17, 2004 Sheet 1 of 10 US 2004/0111910 A1

Fig.1**Family:**

Publication number	Publication date	Application number	Application date
CA2443217 AA	20031001	CA20022443217	20020328
CA2443217 C	20091222	CA20022443217	20020328
EP1376048 A1	20040102	EP20020708700	20020328
EP1376048 A4	20070221	EP20020708700	20020328
JP2002082006 A1	20040729	JP20020579733	20020328
JP3943501 B2	20070711	JP20020579733T	20020328
US2004111910 AA	20040617	US20030473717	20031001
US6895681 BB	20050524	US20030473717	20031001
WO02082006 A1	20021017	WO2002JP03041	20020328

Priority:

JP20010103489 20010402 WO2002JP03041 20020328

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Assignee(s): TOKYO GAS CO
Inventor(s): (std): SAKASAI RYUJI ; SUYAMA KIICHI ; YONEMURA YASUSHI
Agent(s): RIDOUT AND MAYBEE LLP; MCGINN AND GIBB PLLC
Designated states: CA DE FR GB JP US

5) Family number: 43812695 (US2009249885A)

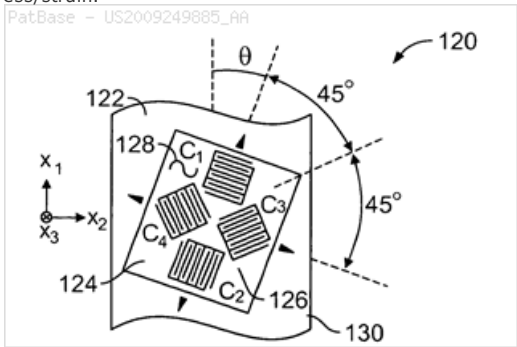
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Title: DIELECTROSTRICTIVE SENSOR FOR MEASURING DEFORMATION

Abstract: Source: US2009249885A An apparatus and method directed to a solid-state capacitance sensor for measuring a strain force on a dielectric including at least one pair of electrostriction sensors each sensor having at least two electrodes and each having a central axis. The central axes are disposed in a common plane and are oriented substantially mutually perpendicularly to one another. Preferably, at least two pairs of sensors, forming a rosette, are provided to facilitate multi-component analysis of a sample having dielectric properties under stress/strain.

Classifications:

International (ipc 8-9): G01B7/16 G01L1/00
G01L1/14 (Advanced/Invention);
G01B7/16 G01L1/00 G01L1/14 (Core/Invention)
CPC: G01B7/22 G01L1/142
European: G01B7/22 G01L1/14A
US: 73/780



Family:

Publication number	Publication date	Application number	Application date
US2009249885 AA	20091008	US20080108380	20080423
US7726199 BB	20100601	US20080108380	20080423

Priority:

US20080108380 20080423 US20080123414P 20080408

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Assignee(s): (std): LEE HO YOUNG ; PENG YIYAN ; SHKEL YURI MICHAEL ; WISCONSIN ALUMNI RES FOUND
Assignee(s): WISCONSIN ALUMNI RESEARCH FOUNDATION ; FOUNDATION WISCONSIN ALUMNI RESEARCH
Inventor(s): (std): LEE HO YOUNG ; PENG YIYAN ; SHKEL YURI MICHAEL
Agent(s): WISCONSIN ALUMNI RESEARCH FOUNDATION; BOYLE FREDRICKSON SC

6) Family number: 54120987 (US2015059498A)

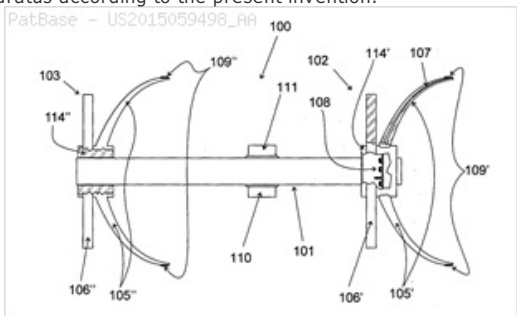
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Title: PIPELINE INSPECTION APPARATUS FOR THE INTERNAL INSPECTION OF PIPELINES

Abstract: Source: US2015059498A An apparatus (100) for determining the conditions of a pipeline (201) and for the analysis of the fluid contained therein comprising: a central body (101) having a substantially cylindrical form perforated for the whole length and comprising at least a salinity sensor and at least a pH measurement sensor; a first crown of petals (102) connected to the central body, wherein each petal extends from the central body (101) until it touches the internal wall of the pipeline (201) and wherein each petal comprises at least one deformation sensor and at least one roughness sensor; a sliding device integrally connected to the central body (101) in a more advanced position with respect to the first crown of petals (102), wherein said sliding device can be a second crown of petals (103) identical to the first crown of petals or a foam pig (104) suitably perforated. A further object of the invention relates to a method for determining the conditions of a pipeline and for the analysis of the fluid contained therein, which uses an apparatus according to the present invention.

Classifications:

International (ipc 8-9): F16L55/38 F16L55/40 G01B5/00 G01B5/12
G01M3/00 (Advanced/Invention);
F16L101/30 (Advanced/Non-invention)
CPC: G01M3/005 F16L55/38 F16L55/40 F16L2101/30 G01B5/00
G01B5/12
US: 73/865.8



Family:

Publication number	Publication date	Application number	Application date
ITMI20112239 A1	20130613	IT2011MI02239	20111212
NO20140894 A	20140714	NO20140000894	20140714
US2015059498 AA	20150305	US20120362744	20121206
US9599528 BB	20170321	US20120362744	20121206
WO13088427 A1	20130620	WO2013IB50826	20130131
WO13088427 A8	20130919	WO2013IB50826	20130131

WO13102807 A2	20130711	WO2012IB57031	20121206
WO13102807 A3	20131024	WO2012IB57031	20121206

Priority:

IT2011MI02239 20111212 WO2012IB57031 20121206

Probable Assignee: ENI SPA

Assignee(s): (std): ENI SPA ; TORINO POLITECNICO

Assignee(s): ENI S P A ; POLITECNICO DI TORINO

Inventor(s): (std): DI LULLO ALBERTO GIULIO ; DU LULLO ALBERTO GIULIO ; LULLO ALBERTO GIULIO DI ; PIROLA MARCO ; SCALTRITO LUCIANO ; TULLIANI JEAN MARC

Agent(s): ABEL LAW GROUP LLP; MAIWALD PATENTANWALTS GMBH

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

7) Family number: 59940342 (US2017009930A)

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Title: PIG AND PIG DISC FOR A PIG

Abstract: Source: US2017009930A Pig for inspecting and/or cleaning pipelines which transport, in particular, oil, gas or water, wherein the pig has at least one flexible plastic element which is mounted on a pig element which is preferably embodied as a pig body, wherein the plastic element has, viewed from the pig element, at least one electromechanical transducer, extending in the longitudinal direction of the plastic element, for detecting and/or outputting a change in shape of the plastic element. Furthermore, the invention relates to a pig disc in the elastic side region of which there is at least one electromechanical transducer as a sensor for detecting changes in the free internal cross section of a pipeline.

Classifications:

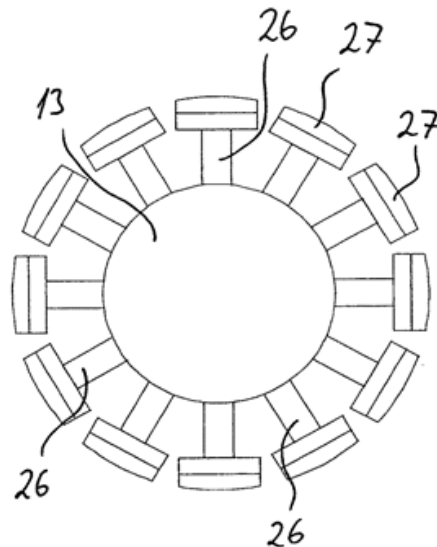
International (IPC 8-9): B08B9/055 F16L55/40

G01B7/16 (Advanced/Invention)

CPC: B08B9/0557 B08B9/055 F16L55/40 F16L2101/30

US: 15/104.061

PatBase - US2017009930_AA



Family:

Publication number	Publication date	Application number	Application date
CA2937981 AA	20160726	CA20152937981	20150114
CO20160000115 A2	20161121	CO20160000115	20160722
DE102014001001 A1	20150730	DE201410001001	20140129
EP3099968 A1	20161207	EP20150702961	20150114
MX2016009762 A1	20170222	MX20160009762	20150114
US2017009930 AA	20170112	US20150115406	20150114
WO15113734 A1	20150806	WO2015EP00051	20150114
WO15113734 A8	20150924	WO2015EP00051	20150114

Priority:

DE201410001001 20140129 WO2015EP00051 20150114

Probable Assignee: ROSEN SWISS AG

Assignee(s): (std): ROSEN SWISS AG

Assignee(s): ROSENBLECK SCHMIDT HOLGER ; LARINK DIRK ; MONSTER TILMANN

Inventor(s): (std): DIRK LARINK ; HOLGER ROSENBLECK SCHMIDT ; MOENSTER TILMAN ; MONSTER TILMANN ; TILMANN MOENSTER ; TILMANN MOESTER ; ROSENBLECK SCHMIDT HOLGER ; MOENSTER TILMANN ; LARINK DIRK

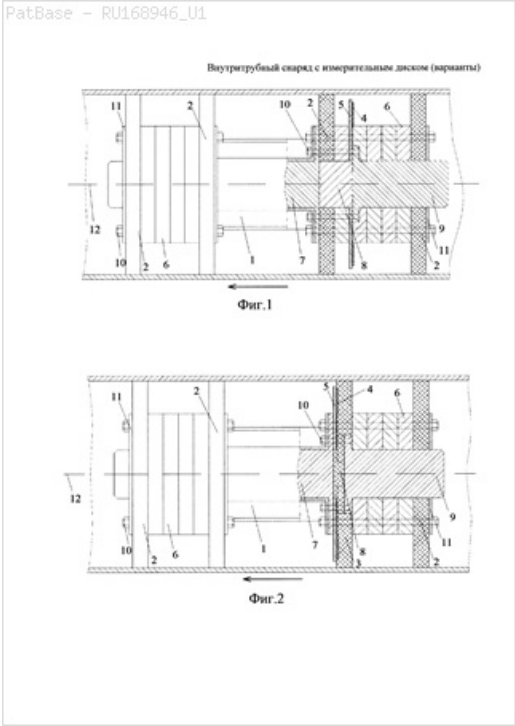
Agent(s): MARKS AND CLERK; LUZ HELENA ADARVE GOMEZ; WEEG THOMAS; WISCHMEYER ANDRE

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: VNUTRITRUBNYJ PROJECTILE WITH MEASURING (Machine translation)

Abstract: Source: RU168946U Utility model relates to a device for pipeline monitoring and control equipment, namely to devices for survey throught linear parts of pipelines, mainly main and flow of oil, gas and product pipelines, and can be used to locate the invalid to skip projectile-profilemera internal diameter of anomalies detected by the result passes vnutritrubnogo projectile with the established calibration disk. the essence of the utility model is the design of vnutritrubnogo projectile entered at least one calibration item made of plastic material, which shall not be less than one resistor. Alternatively, a utility model shall be not less than one resistor is installed in bending elastic element, which is attached to the calibration element from the feed water pressure in the pipeline. Also in the vnutritrubnyj projectile entered block recording equipment that produces dimension and record testimony established by resistors. When passing the vnutritrubnym projectile narrowing the span element bent also bend the resistor (s) located on the bend of the gauge element (or the elastic element) in the area of plastic deformaci. As a result of bending of the resistor (s) change their resistance to bending that registered block recording devices, also the equipment is fixed time when bending occurred. After passing the projectile narrow curved resistor (s) remains in the bending strain state until the end of the movement of projectile vnutritrubnogo

Classifications:
International (IPC 8-9): F16L101/30 F16L55/26 (Advanced/Invention); F16L101/30 (Advanced/Non-invention)



Family:

Publication number	Publication date	Application number	Application date
RU168946 U1	20170228	RU20160101128U	20160115

Priority:

RU20160101128U 20160115

Probable Assignee: LLC R NEFTEGAZDIAGNOSTIKA

Assignee(s): LLC R NEFTEGAZDIAGNOSTIKA ; STC NEFTEGAZDIAGNOSTIKA