

Search history

Search step	Result(s)	Query
62	1881	(ANCHORING AND (TIE AND ROD) AND CEMENT)/BI/SA/KEYW/IN/PA
61	1	((PERMANENT MAGNET)/TI/AB/CLMS/DESC/ODES/TX AND (WIND)/AB/CLMS/DESC/ODES/TI/TX AND (INVERTER)/TI/AB/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX AND (RECTIFIER)/TI/AB/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX AND (ROTOR)/TI/AB/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX AND (BRAKE RESISTOR)/TI/AB/OBJ/ADB/ICLM AND (GENERATOR)/TI/AB/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX AND (PHOTOVOLTAIC+ OR SOLAR+)/TI/AB/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX)
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Search step	Result(s)	Query
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1	18056303	(DISPENSER OR ROLL OR HOUSING OR SUPPORT OR SHAFT OR PIVOT OR ROLLER OR GEAR OR SPRING OR MECHANISM)/BI/SA/IN/PA

Publication numbers	Title	Current assignees
EP3305991 A1	Anchor device for anchoring tie rods and process for anchoring said tie rods	PROMETEC
DE20314997 U1	Corrosion-protected permanent ground anchor used for anchoring buildings and permanent rock anchor comprises tie rod consisting of two individual corrosion-protected partial tie rods combined by transition tube adjoining the anchoring	DYWIDAG SYSTEMS INTERNATIONAL
EP3414399 A1	Method for producing an anchoring tie rod and anchoring tie rod	SOLETANCHE FREYSSINET
EP-974563 A2	Use of a two components mortar containing fine cement for anchoring bolts	HILTI
CN102493451 A	Preparation method of rock bolt system based on fiber reinforced plastic bolt and ultrahigh-performance cement -based bonding and anchoring medium	HUNAN UNIVERSITY
CN106759459 A	Net cage anchoring foundation with multiple cement piers distributed outside steel pile and construction method of net cage anchoring foundation	HEFEI UNIVERSITY OF TECHNOLOGY
WO9600819 A1	Tie rod assembly	MURE ETABLISSEMENTS
CN103321222 A	Recoverable type anchor rod , pressure-bearing plate type anchor pile and anchoring method	GUO CAIBAO
FR2446896 A1	Installation of tie-rod in inaccessible marine site - including putting under tension and anchoring , with redn. or elimination of human intervention	FREYSSINET
CN206559931U U	Piling bar is article font distribution cement pier's box with a net anchoring base outward	HEFEI UNIVERSITY OF TECHNOLOGY
FR2686915 A1	Device for anchoring , under tension, tie rods made of composite material	GTM BATIMENT
EP1090207 A1	Tie rod especially for securing rock walls, and a method for producing such a tie rod	SIKA SCHWEIZ
FR2524030 A1	Anchor head for progressively contracted composite tie rod - has truncated anchoring pin wedged into anchoring ring orifice	PRECONTRAINTTE STE FSE
CN108825278 A	Grouting anchor rod with two ends anchoring prestressed components for underground mine workings and using method thereof	FUZHOU UNIVERSITY
CN209145388U U	Green high performance concrete electric pole	GUANGDONG YUXIN CEMENT PRODUCTS
CN106508767 A	Net cage anchoring foundation assembled through two steel piles and multiple cement piers and construction method thereof	HEFEI UNIVERSITY OF TECHNOLOGY

Publication numbers	Title	Current assignees
FR2643096 A1	Anchoring tie	SOLETANCHE
FR2141436 A	Method and elements for anchoring tie rods and tie rods anchored thus produced.	SONDAGES INJECTIONS FORAGES S I F ENTREPRISE BACHY PARIS
US3735541 A	Method and device for anchoring tie-rods in ground	VANDERLINDE W
CN206576071U U	Piling bar distributes in box with a net anchoring base of cement pier both sides	HEFEI UNIVERSITY OF TECHNOLOGY
DE102009057434 A1	Device for removing bone cement, has elongated base body for inserting in cavity remaining after removing prosthesis shaft of bone, where base body has anchorage unit for anchoring base body with wall of cavity	KARL STORZ
CN104832199 A	Anchor rod and anchoring method adopting anchor rod	GUANGXI UNIVERSITY
CN102691514 A	Multistage sectional grouting-free self-expansion type anchoring rod	CHINA RAILWAY SOUTHWEST RESEARCH INSTITUTE
WO201297186 A1	Low temperature curable adhesive compositions	SIMPSON STRONG TIE
EP2096223 A2	Device for positioning and anchoring a tensioning rod with a precise position and angle	ALBANESE PINO
GB1362843 A	Method and device for anchoring tie rods in soil or rock	SMITH
US20150020965 A1	Low temperature curable adhesive compositions	SIMPSON STRONG TIE
EP-638689 A1	Method for facilitating the extraction of the reinforcement of a prestressed ground-anchor and corresponding anchor	BOUYGUES
EP2529908 A1	Positioning installation for anchorages in the prefabrication of panels of reinforced cement mortar	PELLICER CARLOS F
US3753354 A	Corrosion-protected anchoring rods for anchoring structural parts in the earth, as well as method of producing anchorings with corrosion-protected anchor rods	BAUER KARLHEINZ
EP-190460 A1	Anchoring device for the traction member of an anchor, especially a rock anchor	STRABAG
US20140314503 A1	Grouting method for anchoring with polymer	HENAN BOTE ENGINEERING MAINTENANCE
CN104695435 A	Self-locking anchoring fiber anchor rod and construction method	LANZHOU UNIVERSITY OF TECHNOLOGY
JP07279172 A	Method for setting tie rod anchor in deep layer ground	OBAYASHI
CN208279002U U	Carbide slag system of unloading	SHANDONG LUTAI HOLDING, ...
US20130025234 A1	Anchor bolt locator	SIMPSON STRONG TIE
US4397589 A	Ground anchorage means utilizing a reinforcement or tie insulated from the ground	SOLETANCHE

Publication numbers	Title	Current assignees
US4140429 A	Corrosion protected tensioning member for a prestressable anchor in solid rock	STRABAG
CN208163977U U	Automatic push -pull system that opens of prestressing steel	RUZHOU ZHENG TIE SANJIA CEMENT PRODUCT
EP2893139 A1	Arrangement for the high-strength anchorage of a tendon having a tie rod in a structural element and method for producing an anchorage of this type	DYWIDAG SYSTEMS INTERNATIONAL
EP1310595 A1	Anchoring device	ALSTOM
US20040250497 A1	Connection and method for setting a composite anchor with an apertured screen in a substrate	SIMPSON STRONG TIE
CN109268048 A	Construction method for improving grouting quality of hollow anchoring rods in tunnel anchor	THIRD CONSTRUCTION
EP--50048 A1	Anchoring a railway rail-fastening clip to a foundation for a railway rail	PANDROL GREAT BRITAIN A BRITISH
EP1001134 A1	Anchoring device with a seismic sensor	GEOFORSCHUNGSZENTRUM UM POTSDAM
EP-453266 A1	An anchoring system.	RAWLPLUG
EP1267016 A2	Method for setting a tendon	ENTPR DEGAINE
CN103572669 A	Ballast bed and tunnel bottom defect regulating and constructing method as well as anchoring device	CHINA RAILWAY NO 3 ENGINEERING
FR1459427 A	Method of anchoring tie rods in the ground, tie rod for the application of this method, and construction anchored by this method	SANDVIKENS JERNVERKS, ...
CN1699709 A	Prestressed anchoring system by high tensile steel wire pretension and construction method thereof	OVM, ...
EP-448952 A2	Compound anchoring element.	UPAT
DE3116619 A1	Tie rod, in particular a permanently prestressed rod	COMPERNASS, JOSEF, 6943 BIRKENAU, DE
CN202866314U U	Cross wall adding steel flat tie rod to reinforce masonry structure system	BEIJING ZHUFU CONSTRUCTION ENGINEERING
FR1443392 A	Method and device for the anchoring tie rods in unstable ground and tie rods thus produced	SONDAGES INJECTIONS FORAGES SO
CN103912027 A	Site anchoring test manufacturing, installing and automatic data collection method	INSTITUTE OF ROCK & SOIL MECHANICS CHINESE ACADEMY OF SCIENCES
CN103850254 A	Side slope anchoring structure with early warning energy consumption and damping control system and construction method	LANZHOU UNIVERSITY OF TECHNOLOGY
US4386876 A	Production of anchored tie-rods	SIF ENTREPRISE BACHY
US3967421 A	Tie formed of stressed high-tensile steel tendons	FREYSSINET

Publication numbers	Title	Current assignees
EP2885439 A1	Anchoring system for a support in construction, and method for using same	S & P CLEVER REINFORCEMENT
CN202672093U U	Anchoring type dock wall structure of sheet-pile wall	CCCC THIRD HARBOR CONSULTANTS
US6161339 A	Structural tie -down apparatus	HURRI BOLT
EP3336259 A1	Anchor for anchoring in the ground and/or rock with reversible tension member	STAHLTON
CN103615272 A	Hollow anchor rod with rebar framework and construction method of hollow anchor rod	SHANDONG JIAOTONG UNIVERSITY
EP-312776 A1	Process for fixing anchoring rods	HILTI
CN201137141U Y	Hollow grouting anchoring -bolt capable of measuring length and discharging gas	CHENGDU MODERN WANTONG ANCHOR TECHNOLOGY
DE3929849 A1	Anchoring device for concrete shuttering and formwork - has tubular sleeve, with conical spacer threaded bar and nut and washer	PFLIEGER LIESELOTTE
EP-314927 A2	Anchoring device for a tensioning member and method of anchoring .	STRABAG BAU
EP3118393 A1	Anchoring means using a cable for a horizontal joint, and anchoring method using a cable for a horizontal joint	ESTEYCO
CN202164822U U	Device for positioning and anchoring templates on beam, column and shear wall	BUSINESS COLLEGE HBUT
US4633540 A	Tension tie member	DYWIDAG, ...
DE2547580 A1	Corrosion protection for tunnel anchoring rods - produced by enveloping in polyurethane foam where not cemented in rock	UPAT
CN109083366 A	Anchoring structure and construction method based on large EPS lines	CHONGQING TRICOLOR ENERGY SAVING BUILDING ENGINEERING
FR2941242 A1	Bowstring bridge end supporting device for use during construction of Bowstring bridge, has anchoring blocks made of anti-corrosion material i.e. concrete, where each block has support face that supports end of arch of Bowstring bridge	BAUDIN CHATEAUNEUF
CN103837279 A	Prestress anchoring structure tensioning force detecting system based on single-freedom-degree system	HUNAN UNIVERSITY OF SCIENCE & TECHNOLOGY
CN203462393U U	Industrial high-temperature-resistant overpass bridge	ANSTEEL ENGINEERING TECHNOLOGY
CN202610807U U	Horizontal drawing and inclined anchoring type supporting structure for foundation pits	SHANGHAI STRONG FOUNDATION ENGINEERING
EP1310596 A1	Ballastless railway construction method and tie plate for carrying out the method	ALSTOM TRANSPORT

Publication numbers	Title	Current assignees
CN109403477 A	Anchoring part for connecting fastening heat-insulation layer and pouring heat-insulation protection layer with main wall, and installing structure	XIAO YI
EP1087063 A1	Device for drilling and anchoring and method for installing ground anchors	FORASOL
CN205382507U U	Two -way anchored retaining wall by tie rods	WUHAN SURVEYING GEOTECHNICAL RESEARCH INSTITUTE
CN101845899 A	Structure of lower load bearing wall of reinforcement floorslab and construction method	ZHU HONG
CN102678142 A	Multi-directional inclined combination type anchoring system for horizontal lamellar surrounding rock of tunnel and mounting method thereof	WENG QINENG, ...
CN104746440 A	Mudjacking type anchor rod reinforcing method for repairing longitudinal cracking of U-shaped bridge abutment	BEIJING GONGLIAN XINDA INTELLIGENT TRANSPORTATIONTECHN OLOGY
EP-123979 A2	Anchoring channel for structural engineering	HALFEN
CN104594619 A	Construction and implementation method for tool type anchoring end of overhung external scaffold profile steel beams	NANTONG NO 3 CONSTRUCTION
US4440526 A	Rock anchoring arrangement	HEINTZMANN
CN2720118U Y	Internal slurry-injection anchor rod of plastic expand housing external anchor	LIAONING TECHNICAL UNIVERSITY
CN108560611 A	Anchoring structure used after return and leveling for inclination and floating of basement, and construction method	JIANGSU HUWU CONSTRUCTION
WO201908525 A1	Device for anchoring safety road barrier poles to the ground	TSL ENGINEERING SOC A RESPONSABILITA LIMITATA
US20140326853 A1	Adjustable tie rod assembly employing a free swiveling capability	TITCOMB BROTHERS MANUFACTURING
CN103133026 A	Novel expansion shell inverted wedge type grouting anchor rod	ANHUI UNIVERSITY OF SCIENCE & TECHNOLOGY
CN106386624 A	Net cage anchoring foundation with two umbrella-shaped trays and two steel piles and construction method thereof	HEFEI UNIVERSITY OF TECHNOLOGY
CN104878719 A	Mutually-embedded reinforced ecological retaining wall construction method	HANGZHOU JIANGRUN TECHNOLOGY
CN201627200U U	Blockage-slurry strengthening earth anchor	001 ENGINEERING, ...
CN2185325U Y	Self-drilling slurry filling type anchoring -bolt system	LI WEIWEN
CN102808635 A	Expanding shell type inner anchor head pre-stressed anchor	INSTITUTE OF ROCK &

Publication numbers	Title	Current assignees
	rod and installation using method thereof	SOIL MECHANICS CHINESE ACADEMY OF SCIENCES
EP1273709 A2	Railway rail fastening assembly	PANDROL
CN106050282 A	Anchoring structure and reinforcing method of narrow coal pillar of gob-side entry retaining	XI AN UNIVERSITY OF SCIENCE & TECHNOLOGY
CN106614202 A	Waste tire-formed quartered-square-shaped net cage anchoring base and construction method for same	HEFEI UNIVERSITY OF TECHNOLOGY
EP---4150 A1	Improvements in and relating to an embeddable anchor and to a method of embedding such anchors.	QMC INDUSTRIAL RESEARCH

Family 1/100 - FAMPAT - ©Questel

Title

(EP3305991)

Anchor device for **anchoring tie** rods and process for **anchoring** said **tie** rods

Images

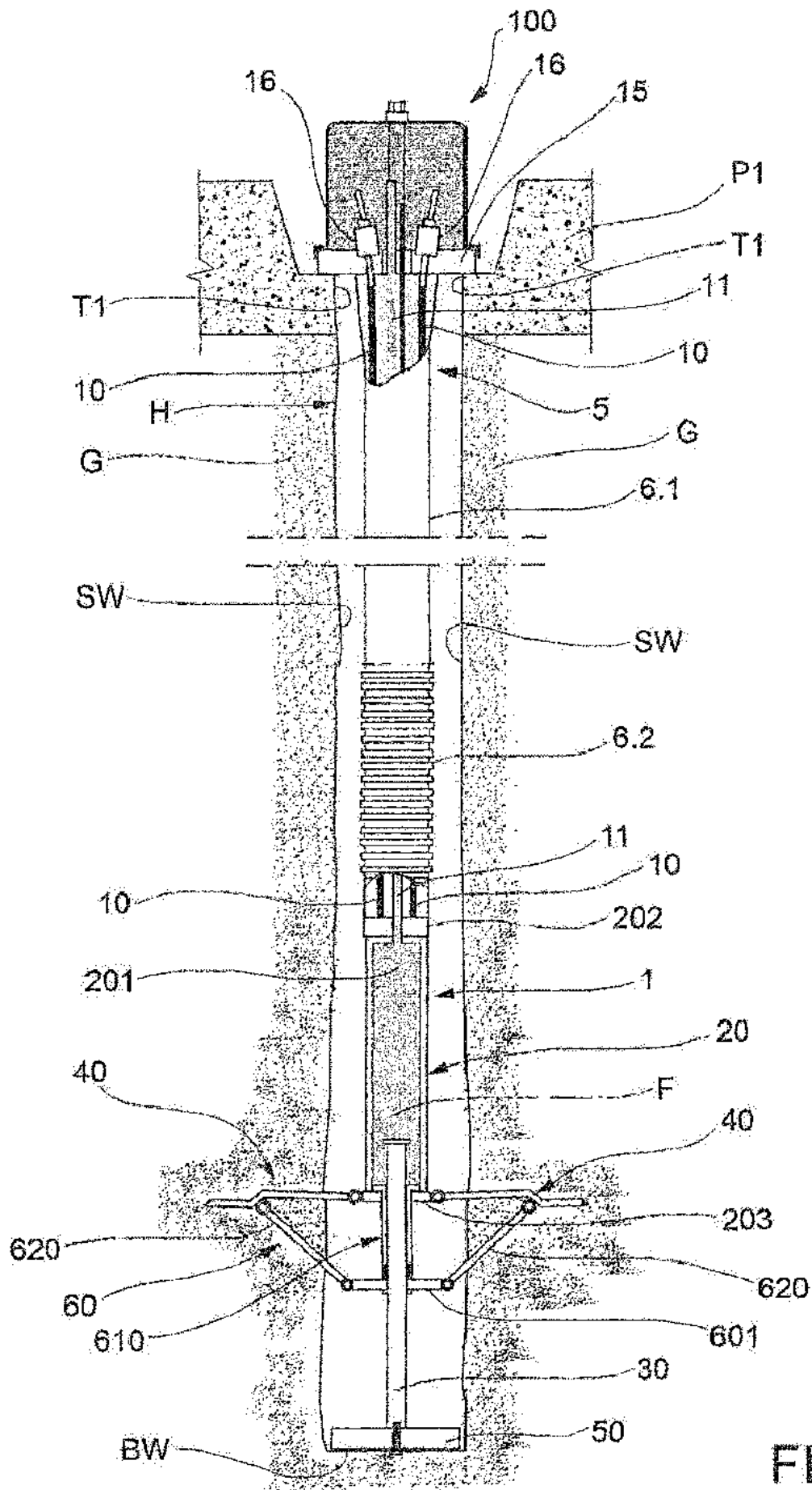


FIG.1

Publication data including kind & date

EP3305991

A1 2018-04-11

EP3305991

IT201600100902

A1 2018-04-07

IT201600100902



Abstract

(EP3305991)

There is described an anchorage device (1; 1A; 1E) for anchorage **tie** rods suitable for being inserted into a perforating hole (H) made in a ground to allow **anchoring** an anchorage **tie rod** (5). The features of the anchorage device meet the need to increase the efficiency of transferring loads to the ground while almost completely eliminating the extraction problems of the **tie rod**. Indeed, the **anchoring** no longer occurs by relying on the friction resistance due to the mortar-ground adhesion, rather it is ensured by the mechanical resistance of penetrating and anchorage plates (40) which are first driven into the side wall (SW) of the perforating hole and then embedded with slurry. Therefore, with such a device, it will be more than sufficient to penetrate about 3 to 4 meters into the active stretch (thus drastically reducing the active length which generally may also reach 40 meters for conventional **tie rods**), open the penetrating and anchorage plates (40) by means of actuating a hydraulic cylinder, and once the penetration is complete, inject **cement** grout. Once anchored, the system can no longer be removed because the penetrating and anchorage plates (40), which are now spread and penetrated in the side wall (SW) of the hole (H), have an open diameter which is much greater than the diameter of the perforation, thus achieving, as mentioned, a mechanical type **anchoring** and no longer a friction **anchoring**. A process for **anchoring** anchorage **tie rods** is also described.

Inventors

FICHERA ALFREDO

Latest standardized assignees - inventors removed

PROMETEC

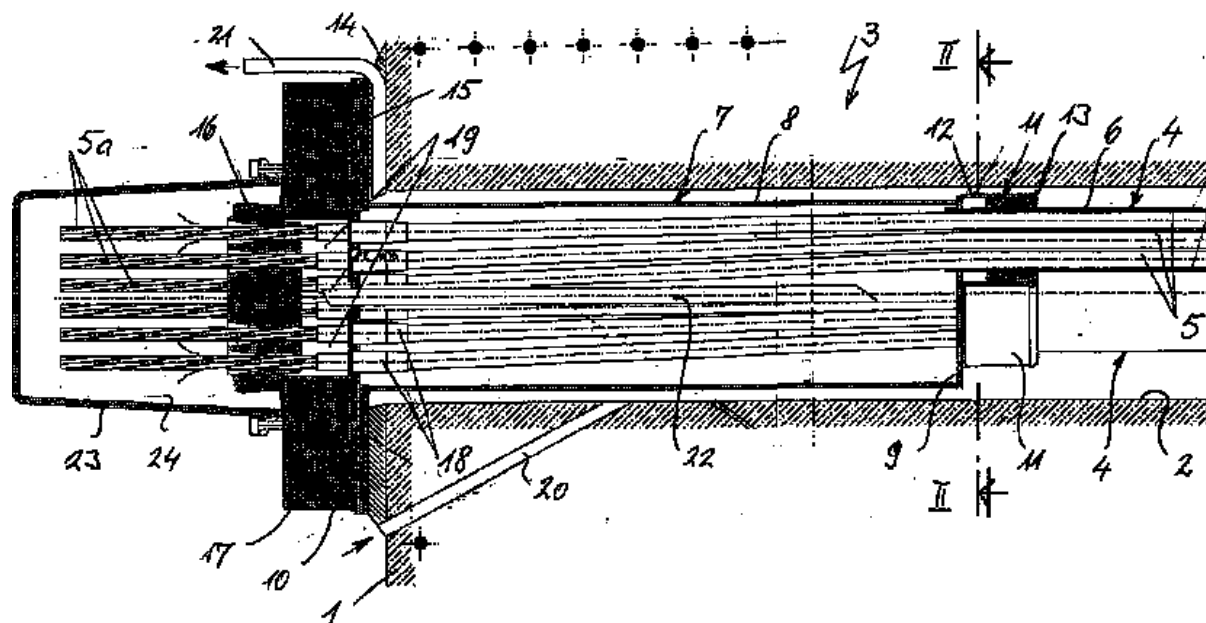
Family 2/100 - FAMPAT - ©Questel

Title

(DE20314997)

Corrosion-protected permanent ground anchor used for **anchoring** buildings and permanent rock anchor comprises **tie rod** consisting of two individual corrosion-protected partial **tie rods** combined by transition tube adjoining the **anchoring**

Images



Publication data including kind & date

DE20314997

U1 2004-01-08

DE20314997



Abstract

(DE20314997)

Corrosion-protected permanent ground anchor comprises a **tie rod** (3) arranged in a tubular sleeve and consisting of a number of individual elements (5) such as steel rods, wires or wire strands which are anchored on the air-side in an **anchoring** device. The **tie rod** consists of at least two individual corrosion-protected partial **tie rods** (4) which, for **anchoring**, are combined by a transition tube (7) adjoining the **anchoring** so that the sleeve tube (6) of the partial **tie rods** adjoins the

transition tube in a sealing manner and the individual elements are guided within the transition tube toward the **anchoring** device.

Latest standardized assignees - inventors removed

DYWIDAG SYSTEMS INTERNATIONAL

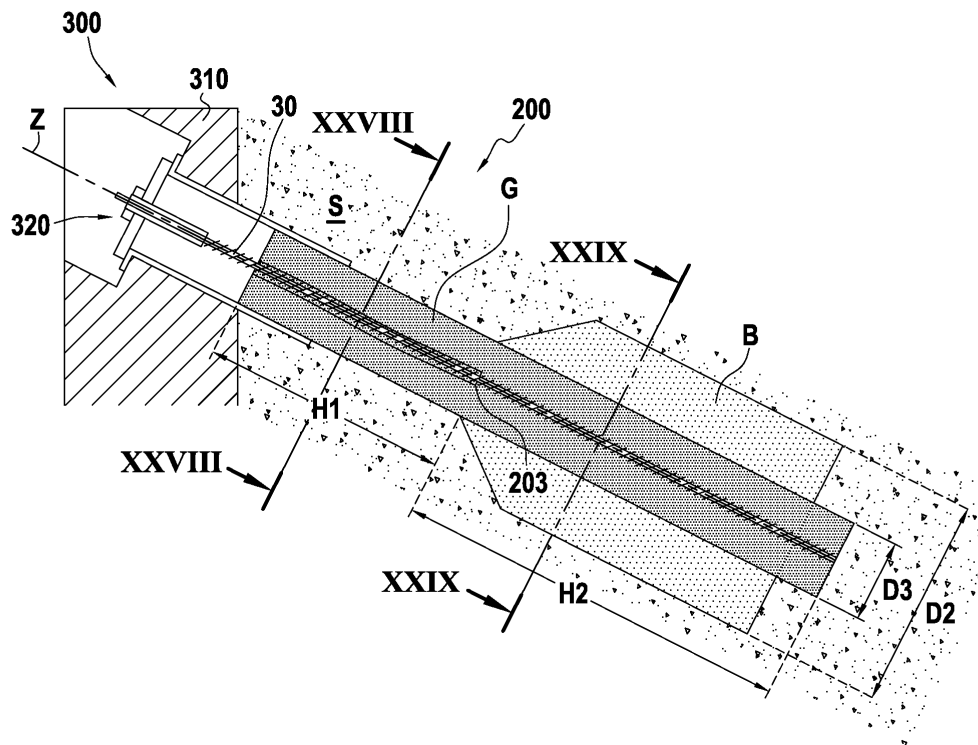
Family 3/100 - FAMPAT - ©Questel

Title

(EP3414399)

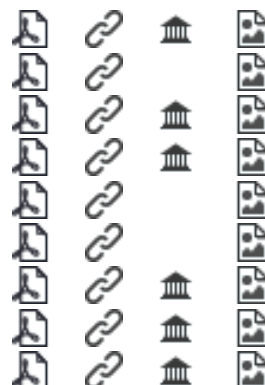
Method for producing an **anchoring tie rod** and **anchoring tie rod**

Images



Publication data including kind & date

FR3047496	B1	2019-07-05	FR3047496
MX2018009642	A	2019-05-06	MX2018009642
US20190048550	A1	2019-02-14	US20190048550
EP3414399	A1	2018-12-19	EP3414399
SG11201806391U	A	2018-08-30	SG11201806391U
CO2018008388	A2	2018-08-21	CO2018008388
AU2017218639	A1	2018-08-16	AU2017218639
WO2017/137702	A1	2017-08-17	WO2017137702
FR3047496	A1	2017-08-11	FR3047496



Abstract

(EP3414399)

The invention relates to a method for constructing an anchorage in the ground, in which: a step of introducing the boring tool in the ground in a boring direction (F) is carried out in order to form an upper portion (C1), the mixing device being in a retracted position during the insertion step; a mixing step is then carried out during which the mixing device is brought into a deployed position and the boring tool is rotatably driven with the mixing device (14) in the deployed position, while axially moving the boring tool in the boring direction, and while injecting the fluid in such a way as to perform a mechanical mixture

in situ of the ground in place with the fluid, so as to form, in the ground, below the upper portion (C1), a bulb (B) having a second diameter (D2) which is larger than the first diameter (D1). A reinforcement is inserted into the bulb, by means of which an anchorage is constructed in the ground.

Inventors

BOREL SERGE

LEBRETON MARIE

URIBE JUAN FERNANDO

GRUBER FELIPE

CUBILLOS IVAN

Latest standardized assignees - inventors removed

SOLETANCHE FREYSSINET

Family 4/100 - FAMPAT - ©Questel

Title

(EP-974563)

Use of a two components mortar containing fine **cement** for **anchoring** bolts

Publication data including kind & date

JP4499212	B2	2010-04-23	JP4499212			
DE59912913	D1	2006-01-19	DE59912913			
EP0974563	B1	2005-12-14	EP-974563			
SG85118	A1	2001-12-19	SG--85118			
EP0974563	A3	2001-05-30	EP-974563			
JP2000128619	A	2000-05-09	JP2000128619			
DE19832666	A1	2000-01-27	DE19832666			
EP0974563	A2	2000-01-26	EP-974563			

Abstract

(EP0974563)

A hardenable two-component mortar of finely divided **cement** and a water glass hardener is used for fixing anchor rods and similar **anchoring** devices in drilled holes. Preferred Features: The water glass contains 20-60 wt.% sodium and/or potassium silicate and water in an amount to provide a water/**cement** ratio of 0.2-2.5:1, preferably 0.3-1.7:1. The mortar contains 20-55% finely divided **cement**, based on the weight of hardener-free mortar components.

Inventors

GIENAU ROLAND

KRIVENKO PAVEL

Latest standardized assignees - inventors removed

HILTI

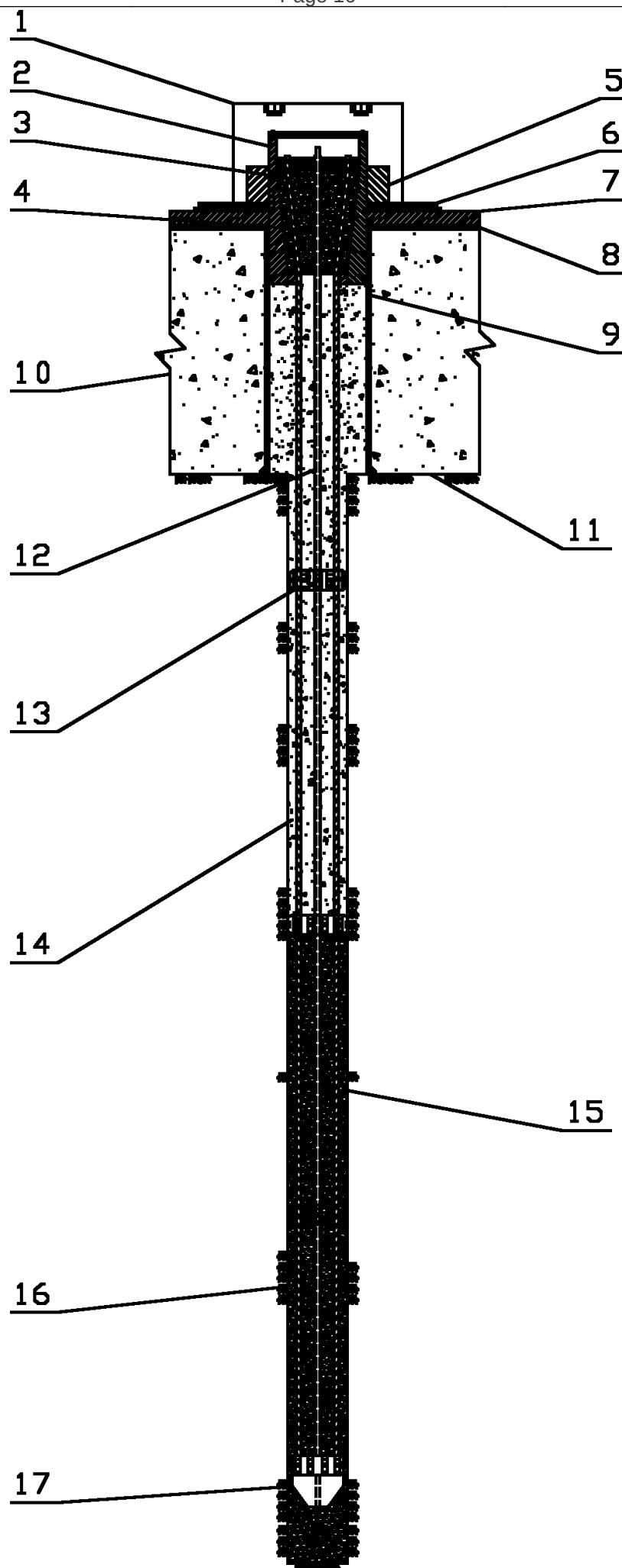
Family 5/100 - FAMPAT - ©Questel

Title

(CN102493451B)

Preparation method of rock bolt system based on fiber reinforced plastic bolt and ultrahigh-performance **cement**-based bonding and **anchoring** medium

Images



Publication data including kind & date

CN102493451	B	2014-04-30	CN102493451B
CN102493451	A	2012-06-13	CN102493451

**Abstract**

(CN102493451)

The patent refers to the field of 'structural elements and techniques therefor'. The invention discloses a rock bolt system based on a fiber reinforced plastic bolt and an ultrahigh-performance **cement**-based bonding and **anchoring** medium. The rock bolt system comprises the following implementation steps of: 1, determining a bolt material and an **anchoring** and bonding medium; 2, designing an anchor system; 3, **anchoring** two ends of a bolt by using an anchorage device; 4, performing delivery inspection on the bolt; 5, mounting the rock bolt system on site; 6, tensioning the bolt; and 7, sealing an anchor. According to the rock bolt system, the fiber reinforced plastic is taken as the bolt, an ultrahigh-performance **cement**-based material is taken as a bonding medium at two ends, a group anchor specially designed serves as an overground anchor and an underground anchor-taper cap combination, excellent characteristics of the two high-performance materials are exerted, and a problem of low durability due to steel bar corrosion and grouting ageing in the conventional rock bolt system is solved. The rock bolt system is safe, reliable and high-efficiency, and has good physical properties and a wide application prospect.

Inventors

FANG ZHI

ZHANG KUANGYI

XIANG YU

TU BING

YU YUE

Latest standardized assignees - inventors removed

HUNAN UNIVERSITY

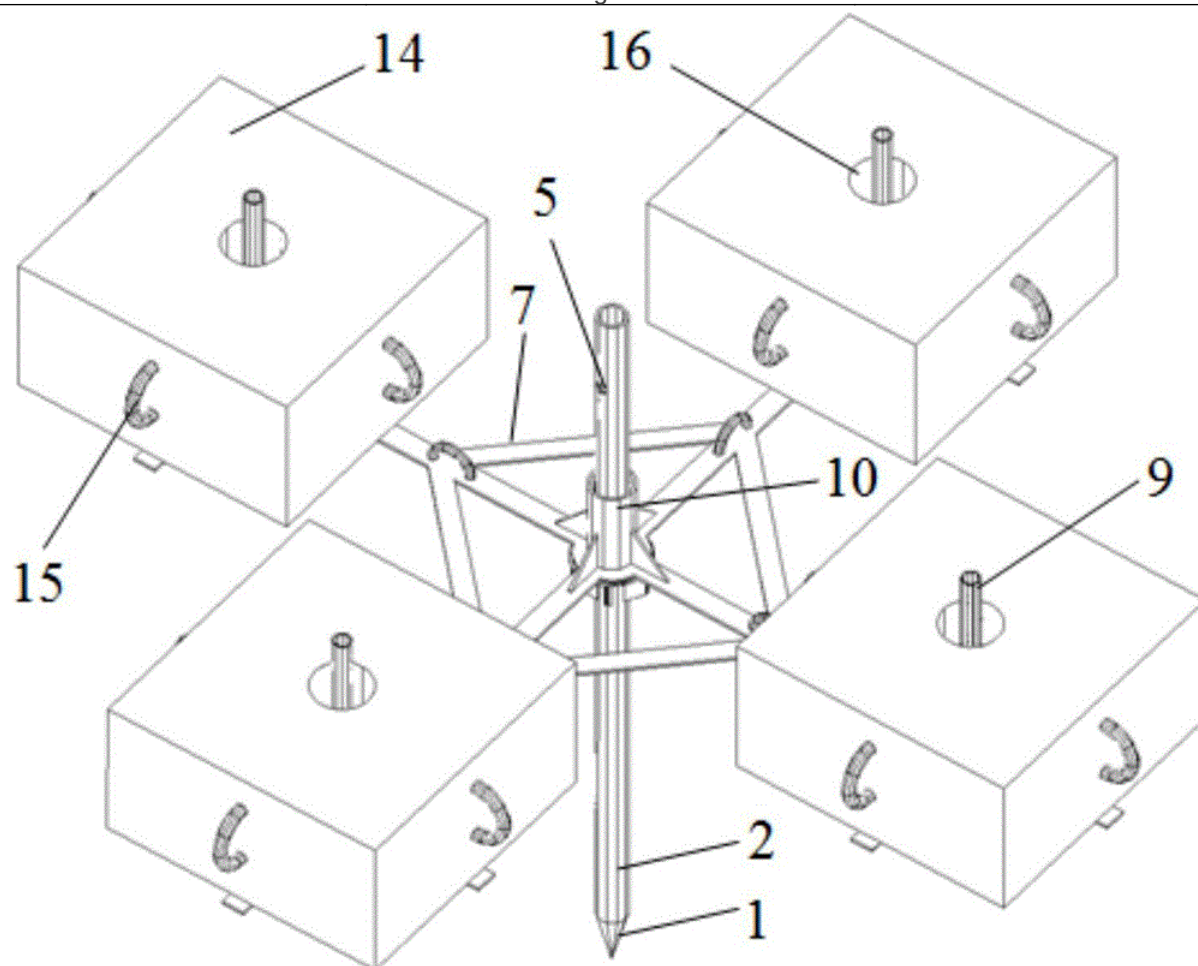
Family 6/100 - FAMPAT - ©Questel

Title

(CN106759459)

Net cage **anchoring** foundation with multiple **cement** piers distributed outside steel pile and construction method of net cage **anchoring** foundation

Images

**Publication data including kind & date**[CN106759459](#)

A 2017-05-31 CN106759459

**Abstract**

(CN106759459)

The invention discloses a net cage **anchoring** foundation with multiple **cement** piers distributed outside a steel pile and a construction method of the net cage **anchoring** foundation. The net cage **anchoring** foundation comprises the steel pile, a connecting bracket and the multiple **cement** piers. A support plate is arranged on the upper middle portion of the steel pile. A casing is arranged in the middle of the connecting bracket. Multiple positioning columns are arranged on the upper end face of the connecting bracket. A reserved hole is formed in the middle of each **cement** pier. In work, the hollow steel pile is sleeved with the casing and sunk into a seabed, the positioning columns on the connecting bracket are all sleeved with the **cement** piers, and the **cement** piers are assembled with the steel pile through the connecting bracket to form the **anchoring** foundation; the steel pile is injected into the seabed, the **cement** piers are submerged, and the **anchoring** foundation posture is checked, and the construction operation of the net cage **anchoring** foundation is completed; and **anchoring** force is jointly provided for a net cage. By the adoption of the net cage **anchoring** foundation, the characteristics that the steel pile can bear the large load and the **cement** piers can bear the large vertical load are fully used, after the **cement** piers are combined with the steel pile, the advantages of the **cement** piers and the steel pile are fully played, and the net cage can bear the large random storm load; and the application range is wide, the capsizing resistance is high, and the large **anchoring** force can be provided.

Inventors

LIU JIEQUN

LIU JINLONG

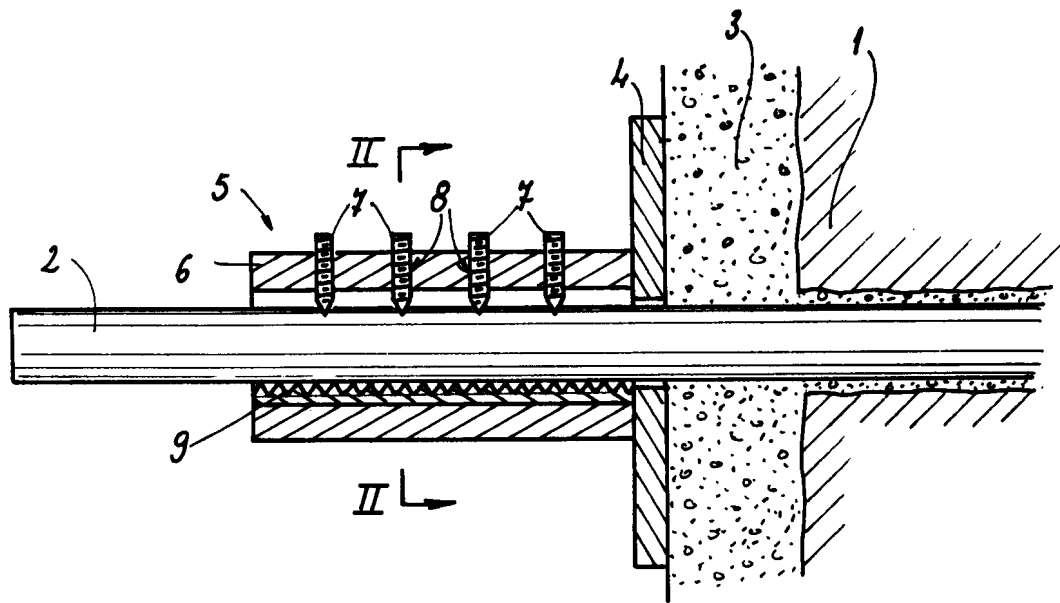
Latest standardized assignees - inventors removed

HEFEI UNIVERSITY OF TECHNOLOGY

Family 7/100 - FAMPAT - ©Questel

Title

(WO9600819)

Tie rod assembly**Images****Publication data including kind & date**

FR2721641	B1	1996-08-02	FR2721641
WO96/00819	A1	1996-01-11	WO9600819
FR2721641	A1	1995-12-29	FR2721641

**Abstract**

(WO96/00819)

A **tie rod** assembly comprising an element (4), such as a plate, secured onto a **tie rod** (2) anchored in a wall (1) for construction purposes. The **tie rod** head (5) has a sleeve (6) fitting over the **tie rod** (2) and optionally at least one screw (7) extending through a threaded aperture (8) the wall of the sleeve (6), and optionally a roughened area (9) at the inner surface of the sleeve (6) against which the **tie rod** (2) is held. The **tie rod** head (5) thus holds the element (4) securely against the wall.

Inventors

BARRERE JEAN-FRANCOIS

Latest standardized assignees - inventors removed

MURE ETABLISSEMENTS

Family 8/100 - FAMPAT - ©Questel

Title

(CN103321222B)

Recoverable type anchor **rod**, pressure-bearing plate type anchor pile and **anchoring** method**Images****Publication data including kind & date**

CN103321222	B	2015-05-06	CN103321222B
CN103321222	A	2013-09-25	CN103321222



Abstract

(CN103321222)

The invention discloses a recoverable type anchor **rod**, a pressure-bearing plate type anchor pile and an **anchoring** method. The recoverable type anchor **rod** comprises an anchor **rod** body, wherein a sleeve is sleeved on a whole section of the anchor **rod** body, an anchor head at the tail portion of the anchor **rod** body and the head portion of the anchor **rod** body are exposed out of the sleeve, two ends of the sleeve are in fixedly sealing connection with the anchor **rod** body, a gap is reserved between the sleeve and the anchor **rod**, and threads are machined on the head portion of the anchor **rod** body. The anchor pile comprises a pressure-bearing plate assembly and the anchor **rod** body, wherein the pressure-bearing plate assembly is arranged deep in a ground layer, the anchor **rod** is inserted in the ground layer and in thread connection with the pressure-bearing plate assembly, the anchor **rod** body is integrally a free section, and the pressure-bearing assembly and **cement** soil arranged on the periphery of the anchor **rod** body in a wrapping mode are combined to form the anchor pile. During construction, a drill **rod** is screwed inside to stir soil and push the pressure-bearing plate assembly into the ground layer simultaneously, the anchor **rod** body is then inserted into an inner hole in the drill **rod** to be in thread connection with the pressure-bearing plate assembly, and the drill **rod** can be pulled out. The anchor **rod** body can be retracted and cannot be reserved in the ground as an obstacle, and social resources can be saved.

Inventors

GUO CAIBAO

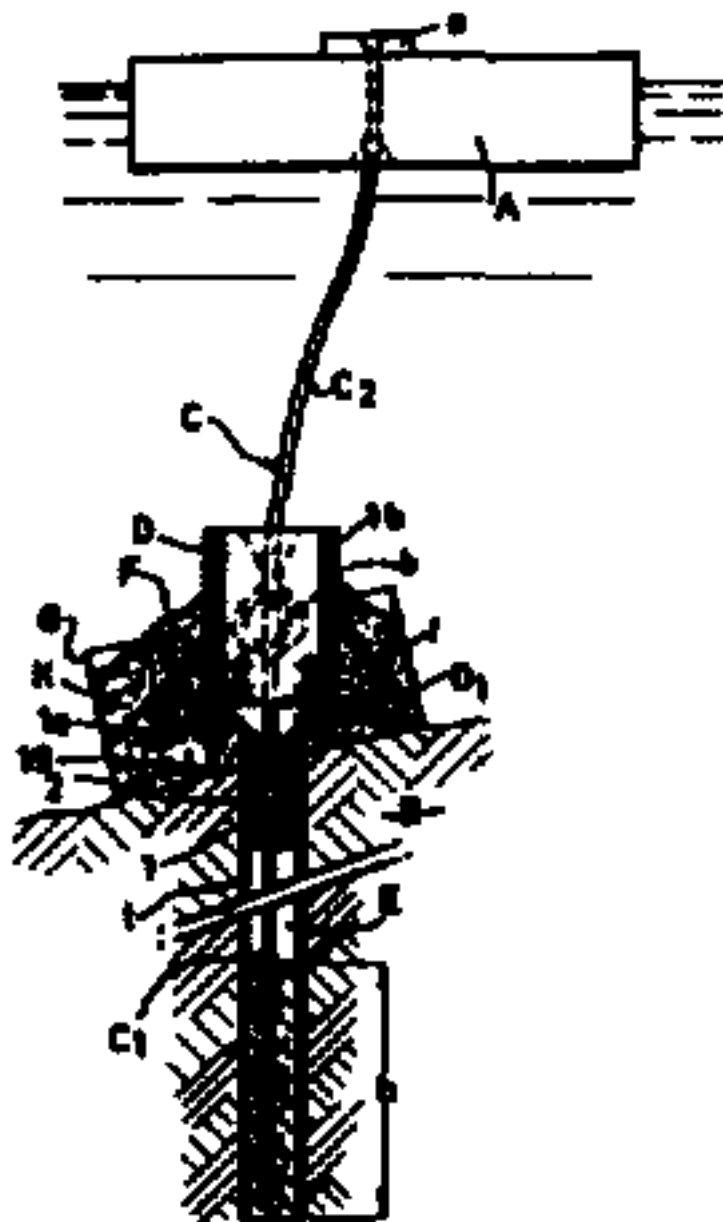
Family 9/100 - FAMPAT - ©Questel

Title

(FR2446896)

Installation of **tie-rod** in inaccessible marine site - including putting under tension and **anchoring**, with redn. or elimination of human intervention

Images



Publication data including kind & date

FR2446896	B1	1983-11-10	FR2446896
FR2446896	A1	1980-08-14	FR2446896



Abstract

(FR2446896)

a process for installing a **tie-rod** for the installation of moorings for tanks and drilling platforms in a deep marine site comprises creating a bore-hole, putting the **tie-rod** in and sealing it, building a block at the outlet of the bore hole, putting the **tie-rod** under tension and **anchoring** it. The process consists of first fixing a head surrounding the **tie-rod** at a point of the **tie-rod** destined to be near the orifice of the bore-hole. The head is integral with a regularly distributed arrangement of hydraulic jacks and terminated towards the bore-hole by a surface symmetrical about the axis. The **tie-rod** is put into place in the bore-hole and sealed. A block of concrete is then cast between the symmetrical surface and the orifice of the bore-hole, filling, around the **tie-rod** without contact with it, the space between the surface and the orifice. After the concrete has set, the jacks are actuated by a settable fluid under press. and the press. is maintained until the fluid has set. Human intervention is reduced to a min., or eliminated altogether, in putting a **tie-rod** in place, putting it under tension and **anchoring** it, in a bore hole.

Inventors

XERCAVINS-GUARRO PIERRE

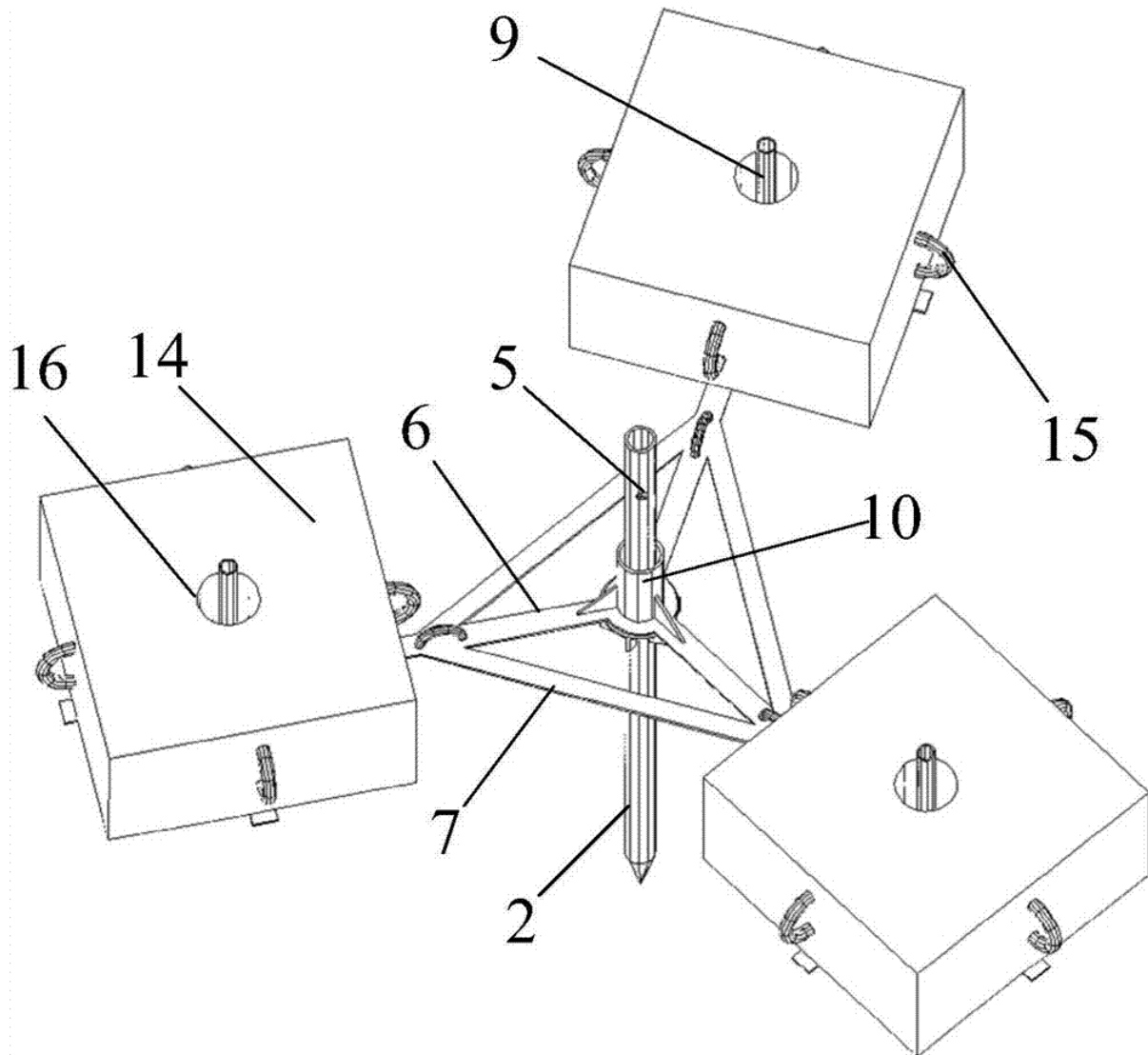
Latest standardized assignees - inventors removed

FREYSSINET

Family 10/100 - FAMPAT - ©Questel

Title

(CN206559931U)

Piling bar is article font distribution **cement** pier's box with a net **anchoring** base outward**Images****Publication data including kind & date**[CN206559931](#)

U 2017-10-17 CN206559931U

**Abstract**

(CN206559931)

The utility model discloses a piling bar is article font distribution **cement** pier's box with a net **anchoring** base outward, including the piling bar, linking support and **cement** pier, upper portion is equipped with the layer board in the piling bar, copulate support symmetry axis department and be equipped with the sleeve pipe with piling bar matched with, copulate the support up end and be equipped with three reference columns, the **cement** pier middle part is equipped with the preformed hole, after the during operation treated that the sleeve pipe embolias the piling bar, the sea bed was squeezed into to the piling bar, and three **cement** pier is through reserving the borehole jack on three reference column, and three **cement** pier constitutes box with a net **anchoring** base through linking the support with the piling bar equipment. The utility model discloses utilize the piling bar can bear the characteristic that great horizontal loading, **cement** pier can bear great

vertical load, **cement** pier and piling bar combination back, the respective advantage of full play can make the box with a net can bear the great load of stormy waves at random, application scope is wider, and antidumping ability reinforce can provide great anchor power.

Inventors

LIU JIEQUN

LIU JINLONG

Latest standardized assignees - inventors removed

HEFEI UNIVERSITY OF TECHNOLOGY

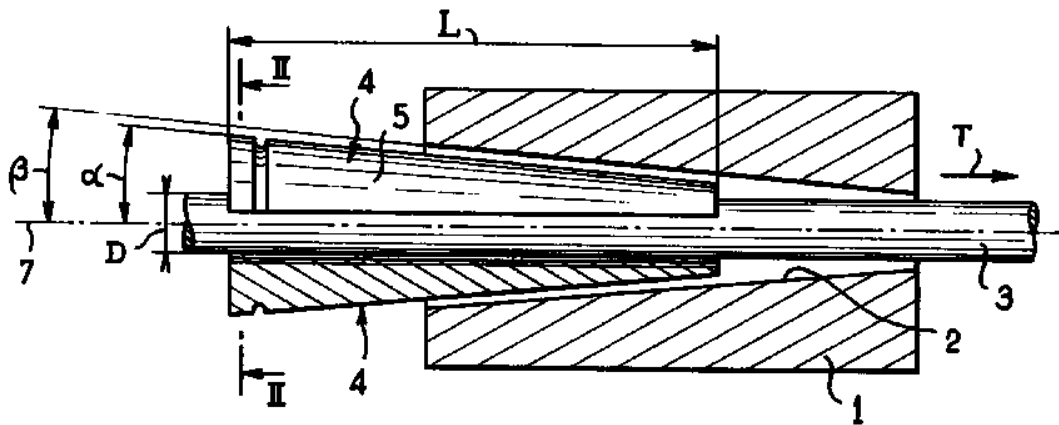
Family 11/100 - FAMPAT - ©Questel

Title

(FR2686915)

Device for **anchoring**, under tension, **tie** rods made of composite material

Images



Publication data including kind & date

[FR2686915](#) B1 1998-10-16 [FR2686915](#)

[FR2686915](#) A1 1993-08-06 [FR2686915](#)



Abstract

(FR2686915)

In this **anchoring** device comprising an **anchoring** head (1) having at least one hole (2) which, in longitudinal section, has a wedge shape, and a set of self-tightening keys (4) having a wedge-shaped profile and located in the hole in order to clamp therein a **tie rod** (3) made of composite material, the keys (4) are, at least in their region of contact with the **tie rod** (3), made of a softer material than the **tie rod** so that under the effect of the clamping, the keys can undergo plastic deformation in that region of them which is in contact with the **tie rod** in order closely to match the surface of the said **tie rod**. The material of the keys (4) is moreover chosen so as to exhibit sufficient shear strength to resist the tensile load to be anchored in the **tie rod**.

Inventors

DURVILLE NICOLAS

DEMILECAMPS LOUIS

Latest standardized assignees - inventors removed

GTM BATIMENT

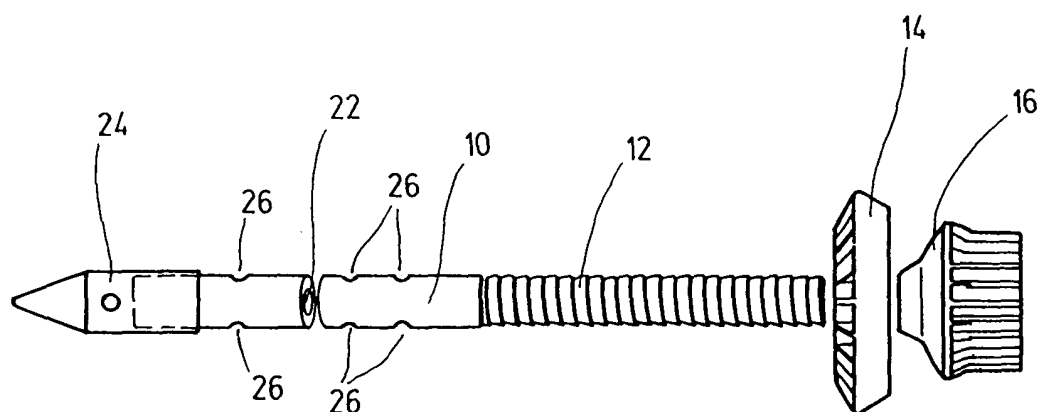
Family 12/100 - FAMPAT - ©Questel

Title

(EP1090207)

Tie rod especially for securing rock walls, and a method for producing such a **tie rod**

Images



Publication data including kind & date

ES2211084	T3	2004-07-01	ES2211084
DE59907379	D1	2003-11-20	DE59907379
AT252197	T	2003-11-15	ATE252197
EP1090207	B1	2003-10-15	EP1090207
EP1090207	A1	2001-04-11	EP1090207
AU3929999	A	2000-01-17	AU9939299
WO00/00718	A1	2000-01-06	WO200000718
DE19828371	A1	1999-12-30	DE19828371



Abstract

(EP1090207)

The invention relates to a **tie rod** used for construction purposes, especially to a **tie rod** constructed as a rock anchor constructed as an adhesive anchor. The **tie rod** comprises an anchor bar (10) which is made of a polymer composite, which has a serrated thread (12) on the end thereof situated on the side of the head, and which is provided for receiving a screw-down nut (16). The screw-down nut can be supported against a pressure plate (14) and is screwed onto the thread (12) of the anchor bar. In order to guarantee an especially efficient producibility without forfeiting tensile strength, the polymer composite of the anchor bar (10) comprises a plurality of reinforcing fibers (18). Said fibers are uninterrupted in the threaded area, are embedded in a binding agent matrix (20) made of thermoplastic material, and extend over the entire length of the anchor bar. The thread (12) can be formed in the anchor bar (10) without cutting by using pressure and heat.

Inventors

BLEIBLER ALEXANDER

SCHUEMPERLI ERNESTO

Latest standardized assignees - inventors removed

SIKA SCHWEIZ

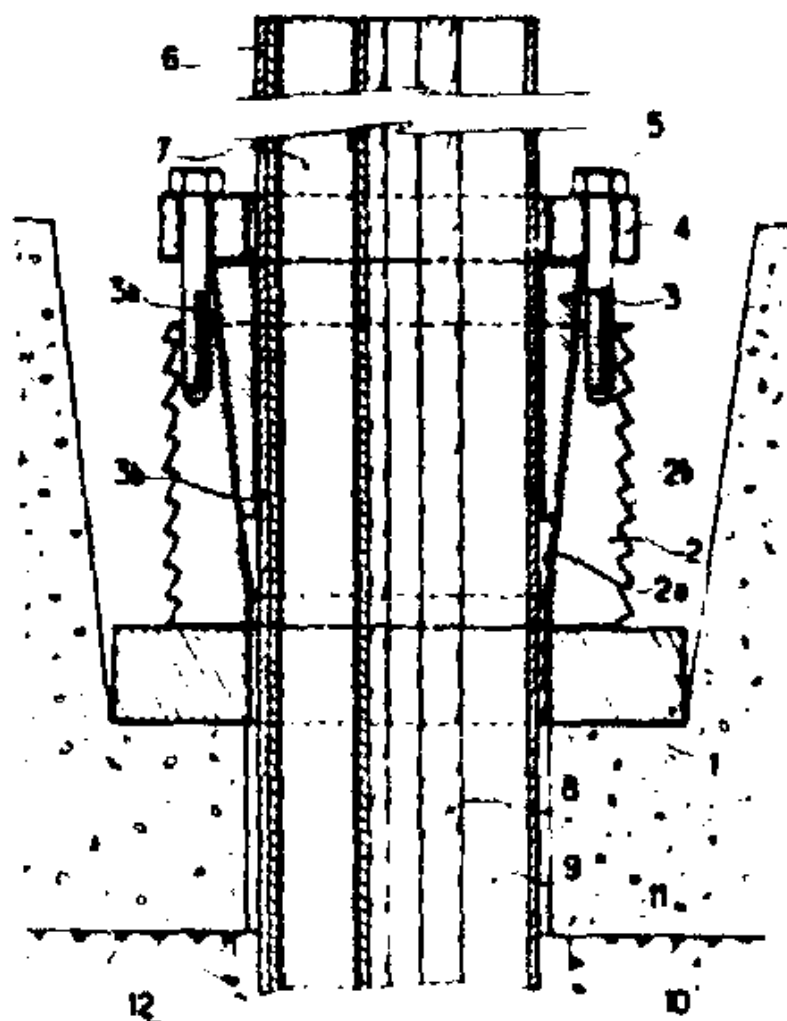
Family 13/100 - FAMPAT - ©Questel

Title

(FR2524030)

Anchor head for progressively contracted composite **tie rod** - has truncated **anchoring** pin wedged into **anchoring** ring orifice

Images



Publication data including kind & date

FR2524030	B1	1985-01-18	FR2524030
FR2524030	A1	1983-09-30	FR2524030



Abstract

(FR2524030)

The cylindrical **tie rod** has a steel tube envelope (6), an interior **cement** mortar (9) filling the tube. Longitudinal pretension steel (8) is bedded in the mortar to put it into permanent compression. The head has an **anchoring** ring (2) on the **anchoring** wall (10), with a truncated orifice with a smooth interior circular surface (2a) decreasing towards the base. An annular **anchoring** pin (3) with smooth exterior truncated surface (3a) slides into the orifice. It has a cylindrical interior surface (3b) in contact with the tube. The pin has three sections displaceable w.r.t. each other that friction grip the tube under initial radial pressure.

Inventors

LACROIX ROGER

Latest standardized assignees - inventors removed

PRECONTRAINTTE STE FSE

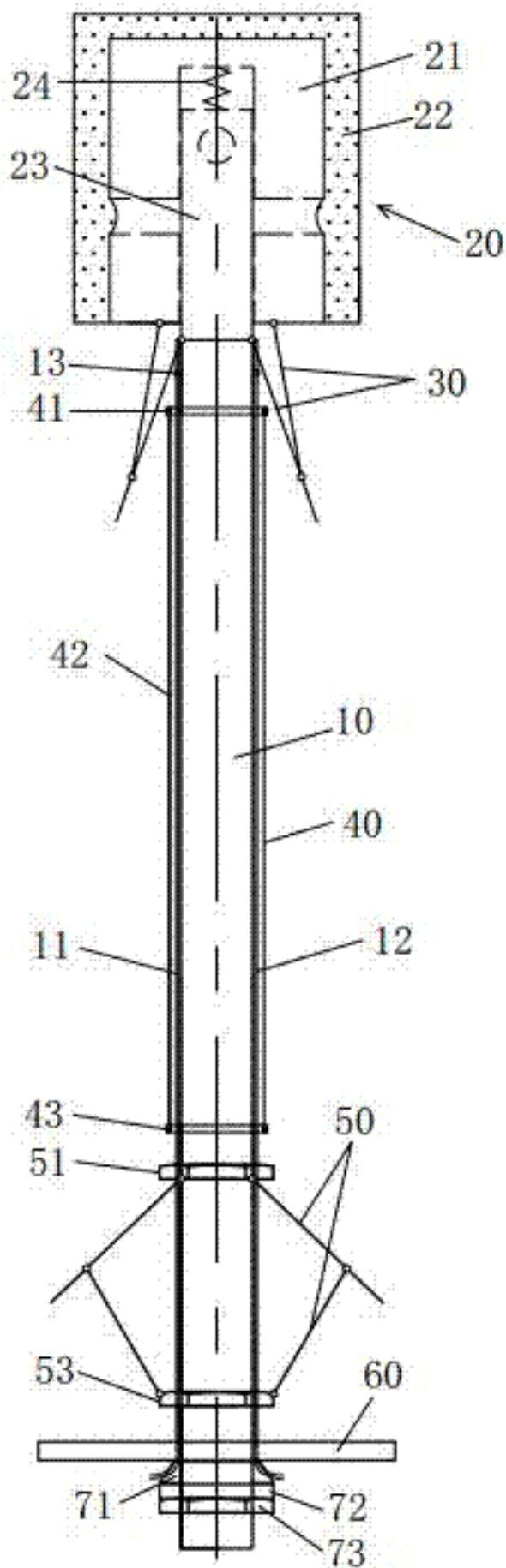
Family 14/100 - FAMPAT - ©Questel

Title

(CN108825278)

Grouting anchor **rod** with two ends **anchoring** prestressed components for underground mine workings and using method thereof

Images



Abstract

(CN108825278)

The invention relates to a grouting anchor **rod** with two ends **anchoring** prestressed components for underground mine workings and a using method thereof. The grouting anchor **rod** comprises a threaded **rod**, wherein a resin **anchoring** agent anchor head is arranged at the upper end of the threaded **rod**. An upper portion support device is located on the lower side of the resin **anchoring** agent anchor head of the threaded **rod**, wherein the upper portion support device is provided with a self-lock mechanism and used for clamping the side walls of a support hole by unfolding after the threaded **rod** is pulled down. A prestress adjusting device arranged on a **rod** body of the threaded **rod**. A lower portion rotating and lifting support device clamping the side walls of the support hole after unfolding is arranged on the lower portion of the threaded **rod**. A tray used for abutting against the outer palisades of the support hole is arranged on the lower side of lower portion rotating and lifting support device of the threaded **rod** in a sleeving mode. A stop grouting plug is arranged on the lower side of the tray of the threaded **rod** in a sleeving mode, and a locking mechanism is arranged on the lower side of the tray of the threaded **rod**. A grouting mechanism is further arranged on the threaded **rod**, wherein a grouting outlet of the grouting mechanism is located in the upper portion of the threaded **rod** and penetrated through by the tray. The grouting anchor **rod** has a compact structure, is conveniently to solve the construction safety problems such as appearing of wall caving and roof caving at the place of surrounding rock relatively broken in the process of tunneling of a chamber and a tunnel rock stratum.

Inventors

LI BINGLEI

SHANGGUAN JIANMING

ZHANG BINGYUAN

WANG XU

WENG JUNJIE

Latest standardized assignees - inventors removed

FUZHOU UNIVERSITY

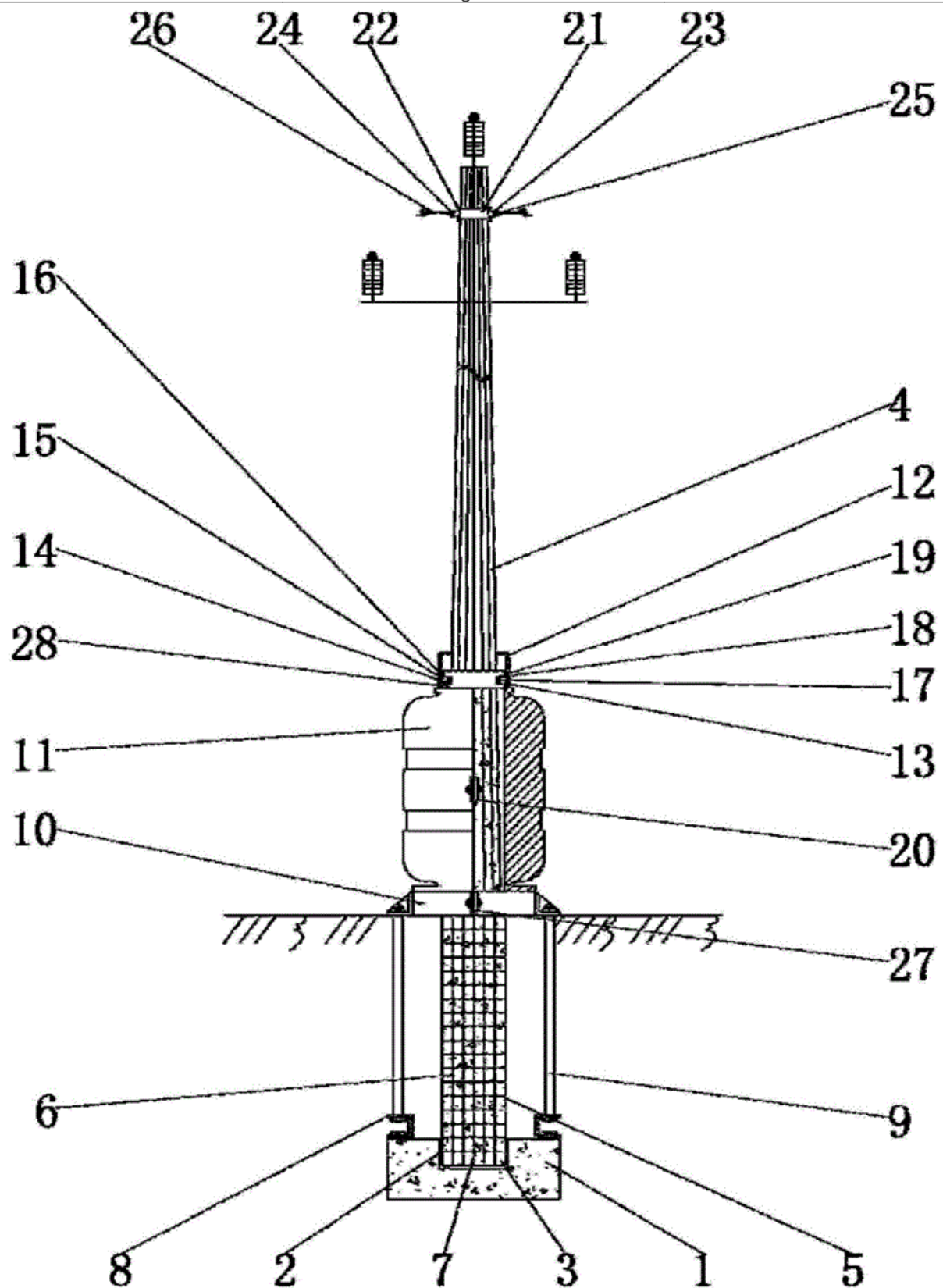
Family 15/100 - FAMPAT - ©Questel

Title

(CN209145388U)

Green high performance concrete electric pole

Images



Publication data including kind & date

[CN209145388](#)

U

2019-07-23

CN209145388U



Abstract

(CN209145388)

The present utility model discloses a green high-performance concrete pole, comprising 1st 2nd body portion and a shank, the shank top of the stick body is provided with a 2nd 1st, 2nd and the **rod** is integrally formed with the body portion and a 1st, 1st and the **rod** is configured in a square, and the 2nd **rod** is configured in a conical shape, and the 1st 2nd inside of the body portion and the shank is provided with a transverse reinforcement, and the transverse reinforcement is disposed inside the vertical bar, and the vertical bar is provided with a **tie** bar at the intersection of the lateral bars, and the

transverse bar through the **tie** bars and the vertical bar is fixedly attached. The green high performance concrete electric pole, through sand tube, between the anchor and cooperate with the channel, under the action of the base plate, can be made of the shank body portion and a 1st 2nd sand tube increases safety performance, prolonging the service life of the **rod** body portion and a 1st 2nd, pre-stressed between the bottom plate and the bolt channel can be increased, 1st 2nd lift **rod** and the **rod** load-bearing capacity, suitable for generalization.

Inventors

ZHOU WUWEI

Latest standardized assignees - inventors removed

GUANGDONG YUXIN **CEMENT** PRODUCTS

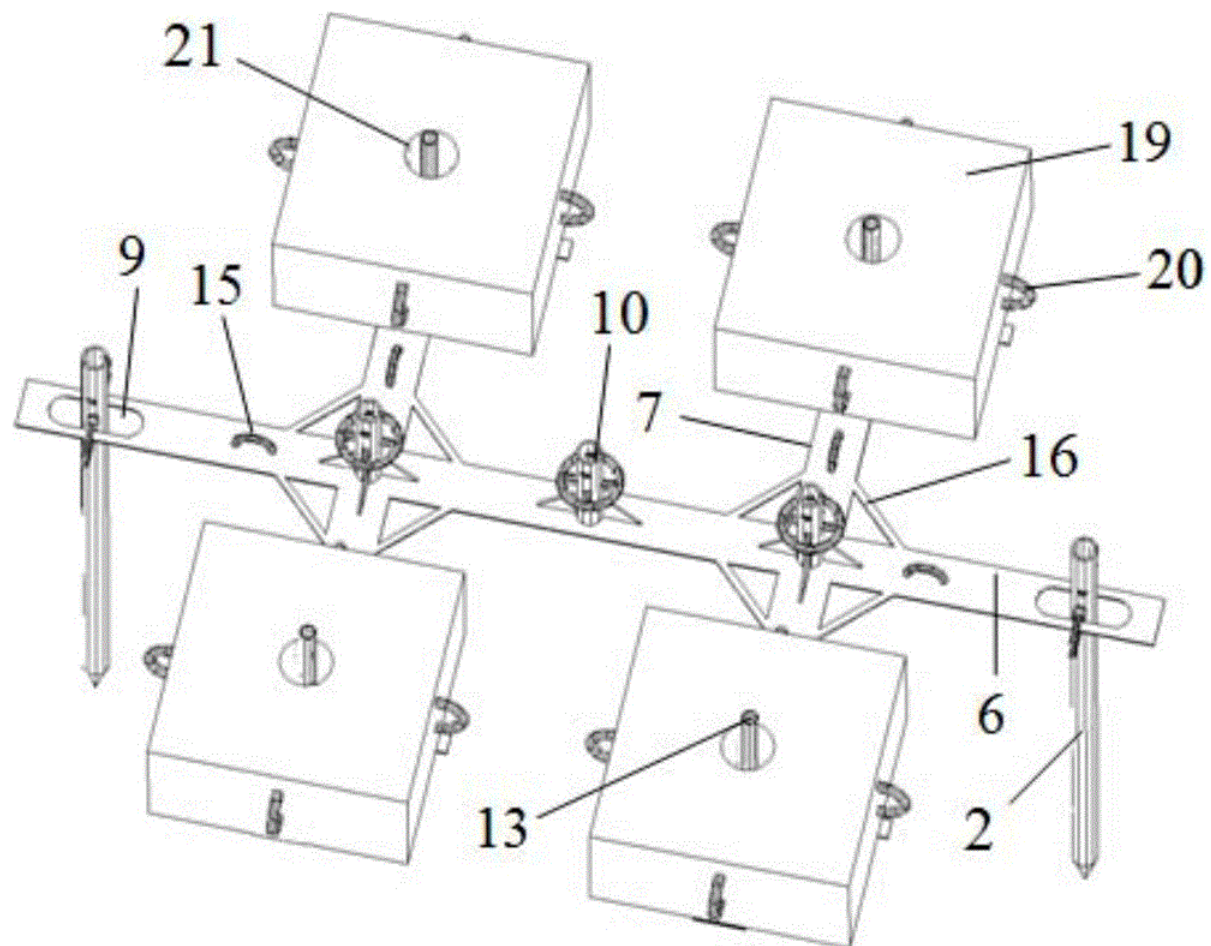
Family 16/100 - FAMPAT - ©Questel

Title

(CN106508767)

Net cage **anchoring** foundation assembled through two steel piles and multiple **cement** piers and construction method thereof

Images



Publication data including kind & date

[CN106508767](#)

A 2017-03-22 CN106508767



Abstract

(CN106508767)

The invention discloses a net cage **anchoring** foundation assembled through two steel piles and multiple **cement** piers and a construction method thereof. The net cage **anchoring** foundation comprises the two steel piles, a connection support and the multiple **cement** piers. The steel piles are provided with support rods and fixing holes. The connection support is provided with multiple supports, mounting holes and positioning pillars. Preformed holes are formed in the middle parts of the corresponding **cement** piers. In the working process, after the mounting holes in the connection support are used for sleeving the two steel piles and are pressed on the corresponding support rods, fasteners penetrate through the

corresponding fixing holes for fixation, and accordingly the two steel piles can be driven into the seabed; then the four **cement** piers are sequentially arranged on the four positioning pillars in a sleeving mode through the corresponding preformed holes, and thus the four **cement** piers and the two steel piles are assembled through the connection support to form the **anchoring** foundation; and construction operations of the net cage **anchoring** foundation are completed by means of penetrating the steel piles into the seabed, submerging the **cement** piers and performing posture verification on the **anchoring** foundation. According to the net cage **anchoring** foundation assembled through the two steel piles and the multiple **cement** piers and the construction method thereof, the characteristics that the steel piles can bear high horizontal loads and the **cement** piers can bear high vertical loads are fully utilized; and after the **cement** piers and the steel piles are combined, the advantages of the **cement** piers and the advantages of the steel piles can be given into full play, and high **anchoring** force can be provided.

Inventors

LIU JIEQUN

LIU JINLONG

Latest standardized assignees - inventors removed

HEFEI UNIVERSITY OF TECHNOLOGY

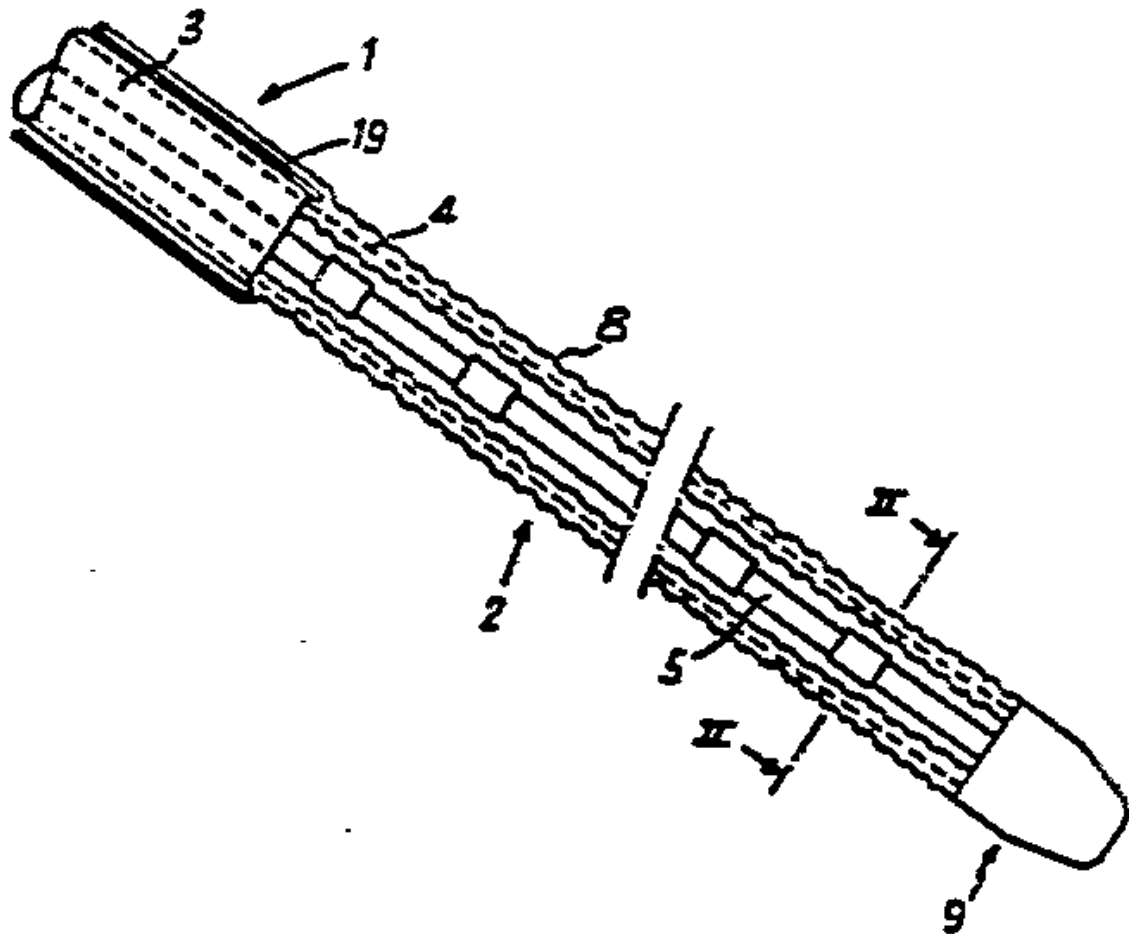
Family 17/100 - FAMPAT - ©Questel

Title

(FR2643096)

Anchoring tie

Images



Publication data including kind & date

JP1934844	C	1995-05-26	JP1934844
JPH0663230	B2	1994-08-22	JP94063230
FR2643096	B1	1991-05-10	FR2643096



JPH02282512	A	1990-11-20	JP02282512
FR2643096	A1	1990-08-17	FR2643096

**Abstract**

(FR2643096)

The invention relates to an **anchoring tie** comprising an injection tube 5 and a plurality of strands 4 arranged around the said tube. In the **anchoring** zone 2, each strand is individually engaged in a ringed sheath 8, the sheaths being freely arranged around the injection tube.

Inventors

SCHREIBER JEAN-PIERRE

Latest standardized assignees - inventors removed

SOLETANCHE

Family 18/100 - FAMPAT - ©Questel

Title

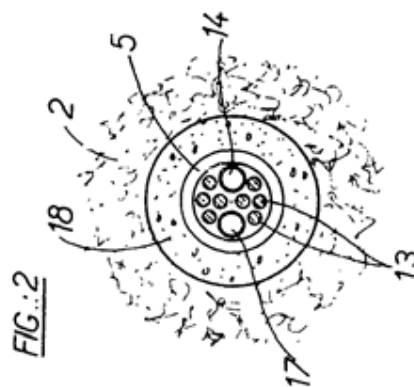
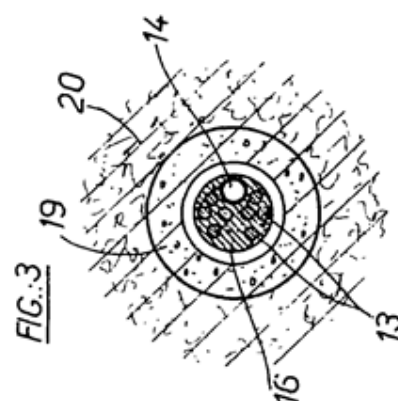
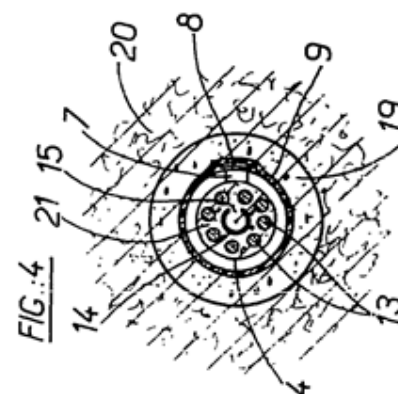
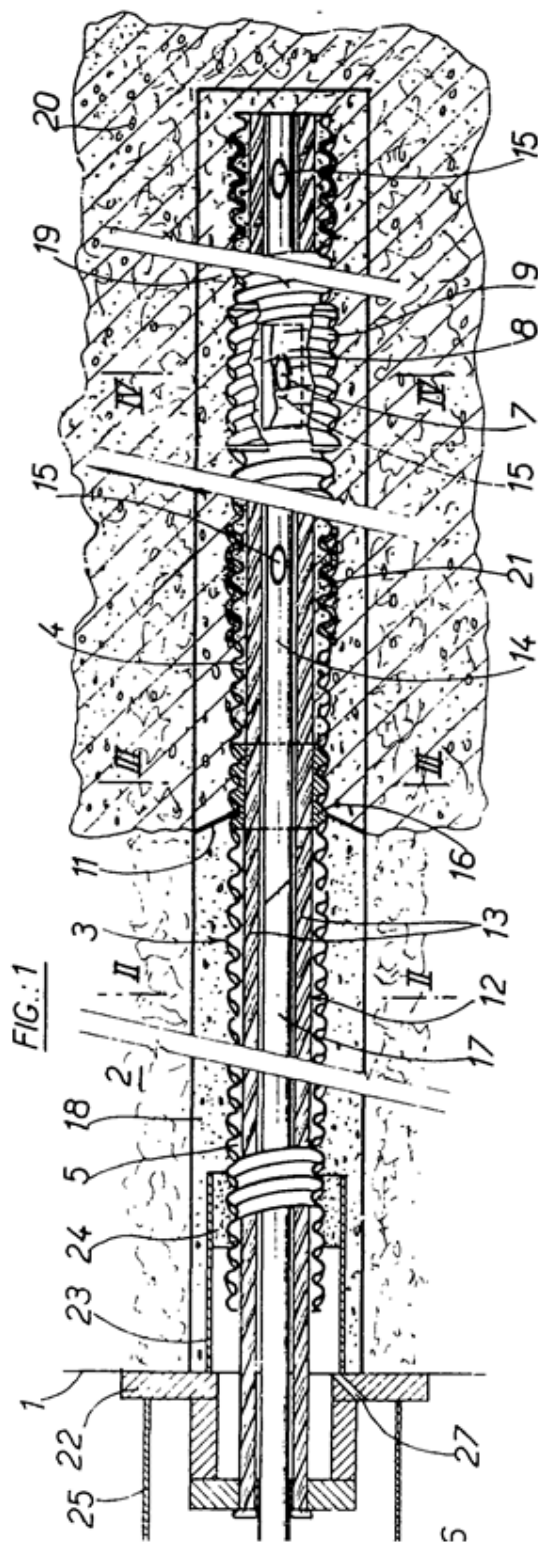
(FR2141436)

Method and elements for **anchoring tie** rods and **tie** rods anchored thus produced.

Images

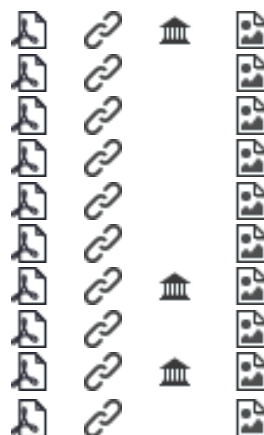
ZEICHNUNGEN BLATT 1

Nummer: 22 26 169
 Int. Cl. 3: E 02 D 5/54
 Veröffentlichungstag: 1. August 1985



Publication data including kind & date

DE2226169	C2	1985-08-01	DE2226169
NL174853	C	1984-08-16	NL-174853
NL174853	B	1984-03-16	NL-174853
OA4133	A	1979-11-30	OA---4133
HK9779	A	1979-03-02	HK7900097
HK9879	A	1979-03-02	HK7900098
AU1373476	A	1976-08-05	AU7613734
ATA468672	A	1976-05-15	AT7204686
AU471772	B2	1976-05-06	AU-471772
AT334605	B	1976-01-25	AT-334605



CH569154	A5	1975-11-14	CH-569154				
CH559290	A5	1975-02-28	CH-559290				
GB1385177	A	1975-02-26	GB1385177				
GB1384744	A	1975-02-19	GB1384744				
AU4258772	A	1973-11-29	AU7242587				
FR2141436	B1	1973-06-29	FR2141436				
FR2141436	A	1973-01-26	FR2141436				
FR2141436	A1	1973-01-26	FR2141436				
DE2226169	A1	1972-12-28	DE2226169				
NL7207332	A	1972-12-05	NL7207332				
BE784266	A	1972-12-01	BE-784266				

Abstract

(FR2141436)

1384744 **Anchoring** bolts SONDAGES INJECTIONS FORAGES SIF ENTERPRISE BACHY 16 May 1972 [2 June 1971] 22991/72 Heading F2H [Also in Division E1] To anchor a stay in a drilled bore, e.g. to retain a wall of sheet piles against a rock face 1, a tubular protective sleeve 3, e.g. of steel or plastics, is introduced into the bore, the annular space 18 defined outwardly of a flexible annulus 11 is filled with **cement** group or with an inflatable sleeve, the stay 12 comprising a bundle of wires 13 is inserted into the sleeve, and **cement** mortar or grout is forced through a central tube 14 to exit from orifices 15 into the space, defined between the inner end of the sleeve and a sealing plug 16, to simultaneously bind the sleeve to the stay, and, after passing through orifices 7 in the wall of the inner end of the sleeve into annular space 19, bind the sleeve to the walls or the bore. Orifices 7 are preferably overlaid with foil 8 and bands of rubber 9 to form one-way valves, If desired, the stay can be prestressed after **anchoring** in the bore, and material can subsequently be injected into the space surrounding the outer end of the stay, through tube 17, to prevent corrosion.

(From GB1384744 A)

Inventors

DUPEUBLE, PAUL, NOISY-LE-ROI, FR

Latest standardized assignees - inventors removed

SONDAGES INJECTIONS FORAGES S I F ENTREPRISE BACHY PARIS

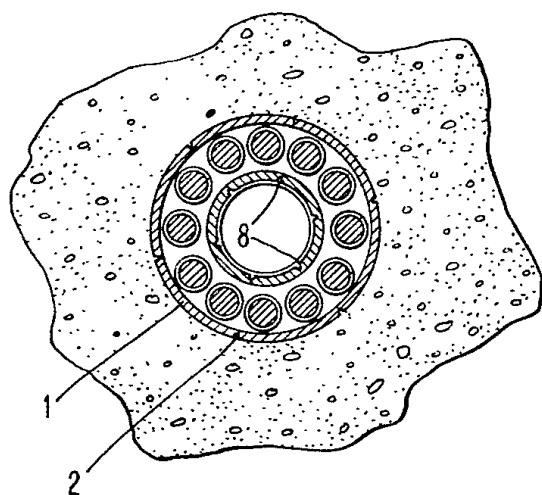
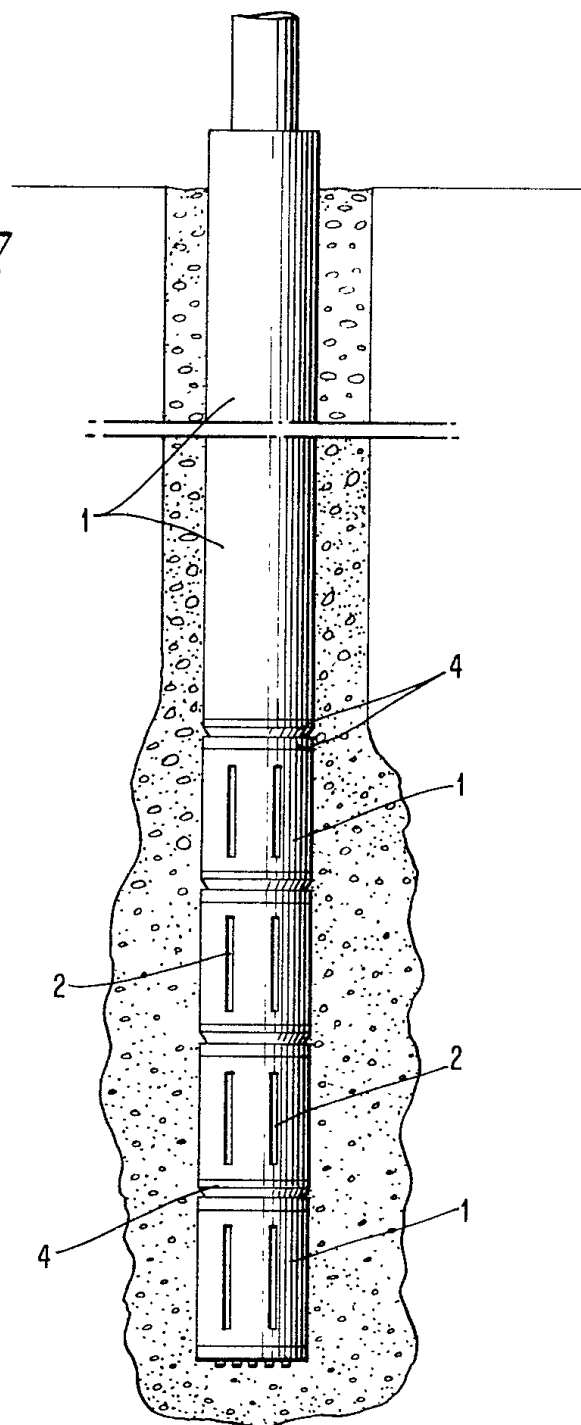
Family 19/100 - FAMPAT - ©Questel

Title

(US3735541)

Method and device for **anchoring tie**-rods in ground

Images

Fig. 1A*Fig. 1B***Publication data including kind & date**

US3735541

A 1973-05-29 US3735541

**Abstract**

(US3735541)

A **tie-rod** or cable is anchored in the earth by drilling a hole in the soil or rock and placing in the hole a double-wall casing comprising spaced inner sleeves and outer sleeves. Annular spacers between successive sections of the inner and outer sleeves have longitudinal holes receiving strands or bars of the cable or the **rod** to be anchored. The inner and outer sleeves are weakened by longitudinal slits or cuts. **Cement** injected under pressure through an injection tube inserted inside the casing causes slits in the inner sleeves to open so that the **cement** fills the annular space containing the **tie-rod** or cable bars or strands and then causes bursting of the outer sleeves to fill any space surrounding the casing. Seals between the injection tube and the spacers limit the injection to one section at a time. After injection with **cement**, the middle of the casing is flushed out to permit subsequent reinjection.

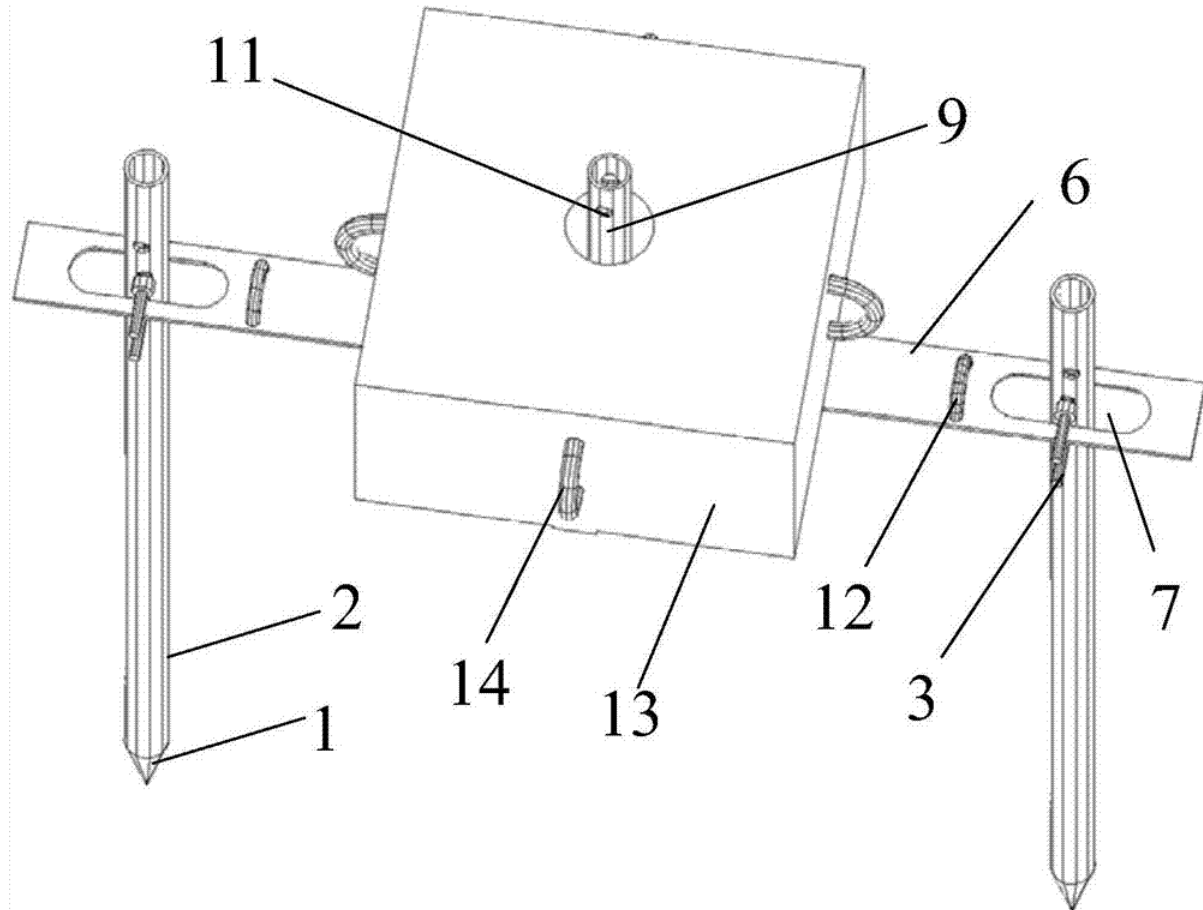
Inventors

VANDERLINDE W

Family 20/100 - FAMPAT - ©Questel

Title

(CN206576071U)

Piling bar distributes in box with a net **anchoring** base of **cement** pier both sides**Images****Publication data including kind & date**

CN206576071 U 2017-10-24 CN206576071U

**Abstract**

(CN206576071)

The utility model discloses a piling bar distributes in box with a net **anchoring** base of **cement** pier both sides, including two piling bars, copulateing support and **cement** pier, piling bar upper portion is equipped with die -pin and fixed orifices, copulate the support middle part and be equipped with the support, copulate the support and be equipped with the mounting hole respectively near both ends, the **cement** pier middle part is equipped with the preformed hole, during operation, two mounting holes that link the support entangle two piling bars respectively and press on the die -pin, and it is fixed to pass the fixed orifices with the fastener, and the sea bed is squeezed into to two piling bars, and **cement** pier is through reserving the borehole jack on the support, and **cement** pier is through linking support and two piling bars equipment component **anchoring** base. The utility model discloses the make full use of piling bar can bear the characteristic that great horizontal loading, **cement** pier can bear great vertical load, and **cement** pier and piling bar combination back, the respective advantage of full play can provide great **anchoring** power.

Inventors

LIU JIEQUN

LIU JINLONG

Latest standardized assignees - inventors removed

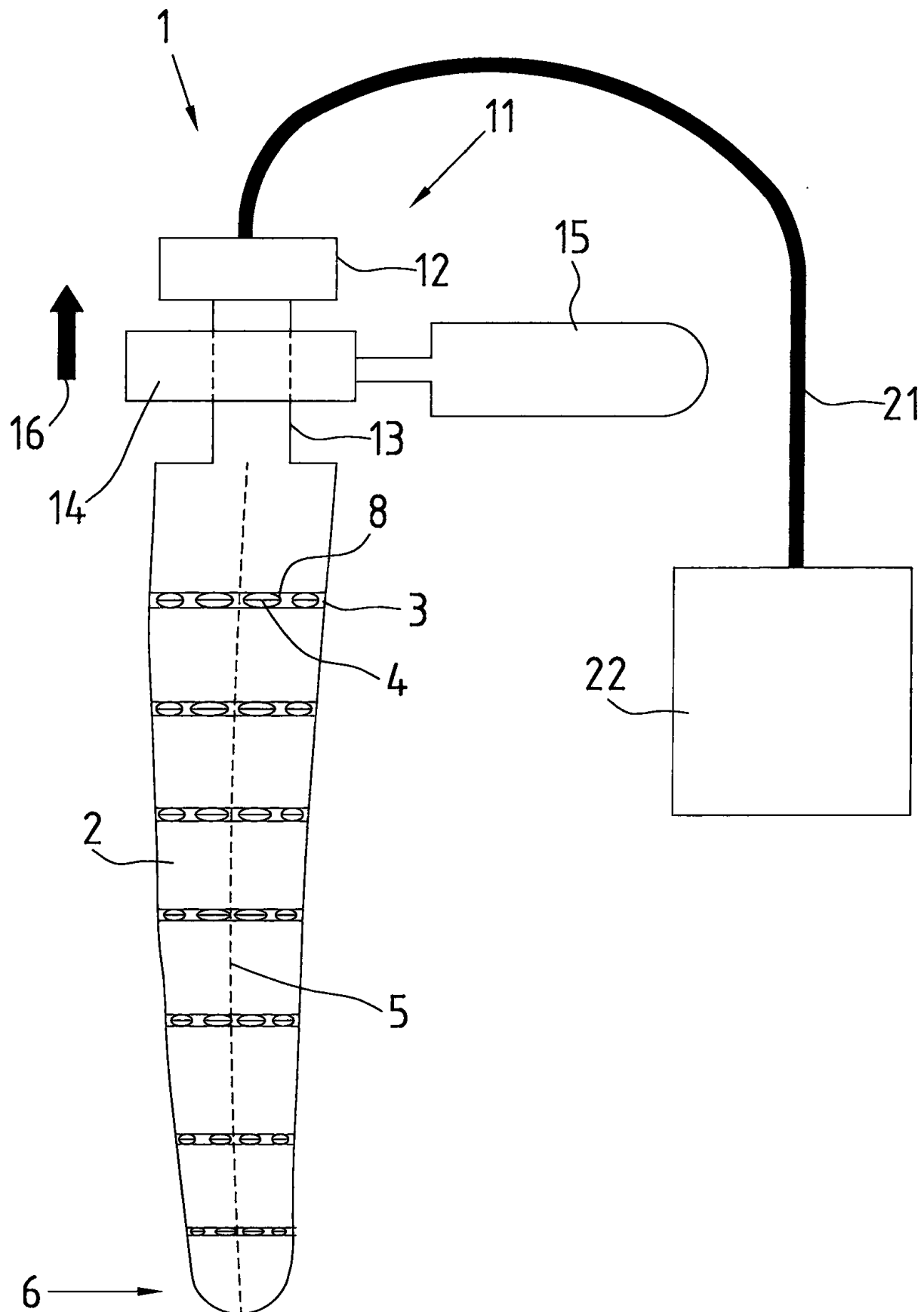
HEFEI UNIVERSITY OF TECHNOLOGY

Family 21/100 - FAMPAT - ©Questel

Title

(DE102009057434)

Device for removing bone **cement**, has elongated base body for inserting in cavity remaining after removing prosthesis shaft of bone, where base body has anchorage unit for **anchoring** base body with wall of cavity

Images

[DE102009057434](#)

A1 2011-06-16 DE102009057434

Abstract

(DE102009057434)

The device (1) has an elongated base body (2) for inserting in a cavity remaining after removing a prosthesis shaft of a bone. The base body has an anchorage unit for **anchoring** the base body with a wall of the cavity. The wall is formed partially by bone **cement**. The anchorage unit is expandable in a direction transverse to a center line (5) of the base body. The anchorage unit is formed as a cutter (4) standing outward from the base body. An independent claim is also included for a method for removing of bone **cement**.

Inventors

KRATTINGER BEAT

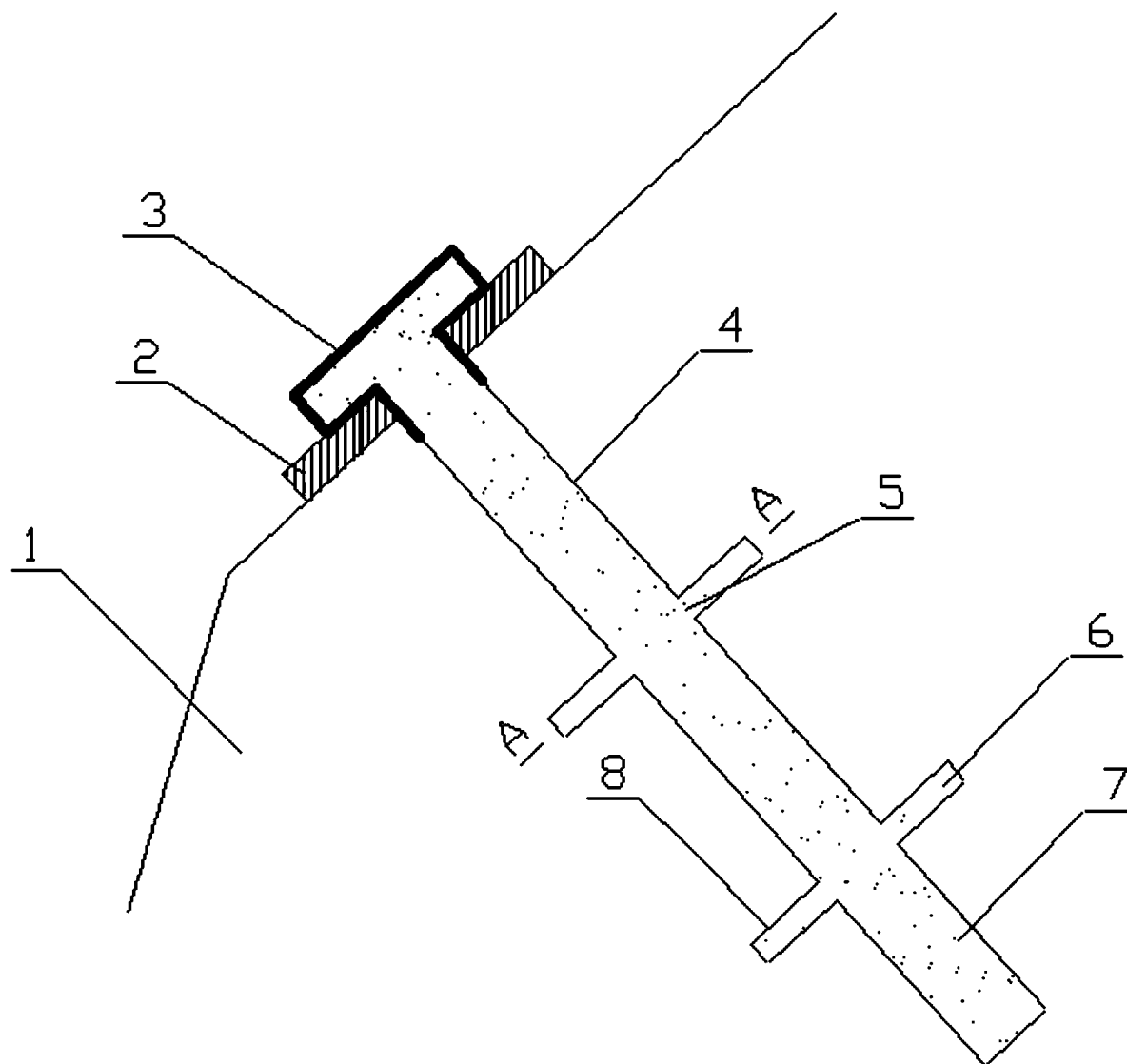
Latest standardized assignees - inventors removed

KARL STORZ

Family 22/100 - FAMPAT - ©Questel

Title

(CN104832199)

Anchor **rod** and **anchoring** method adopting anchor **rod****Images****Publication data including kind & date**[CN104832199](#)

A 2015-08-12 CN104832199

**Abstract**

(CN104832199)

The invention discloses an anchor **rod** which consists of a backing plate, a baffle cover and a **rod** body, wherein a cavity is formed inside the **rod** body; a mortar inlet connected with the cavity is formed in the end part of the **rod** body; external threads are arranged at the end part of the **rod** body; a plurality of mortar overflow holes connected with the cavity are formed in the outer circumferential wall of the **rod** body and are uniformly arrayed along the axial direction of the **rod** body; internal threads correspondingly matched with the external threads are arranged on the baffle cover and are used for opening or closing the mortar inlet; the backing plate movably sleeves the **rod** body, and the upper end face of the backing plate can be supported against the lower end face of the baffle cover. According to the anchor **rod**, the defect that the anchor **rod** is easily extracted from **cement** mortar under the long-term action of an outside environment can be overcome.

Inventors

ZHOU XIAORONG

YAN LINGYUN

HUANG HONGXING

ZHANG JIALU

FENG LUYU

Latest standardized assignees - inventors removed

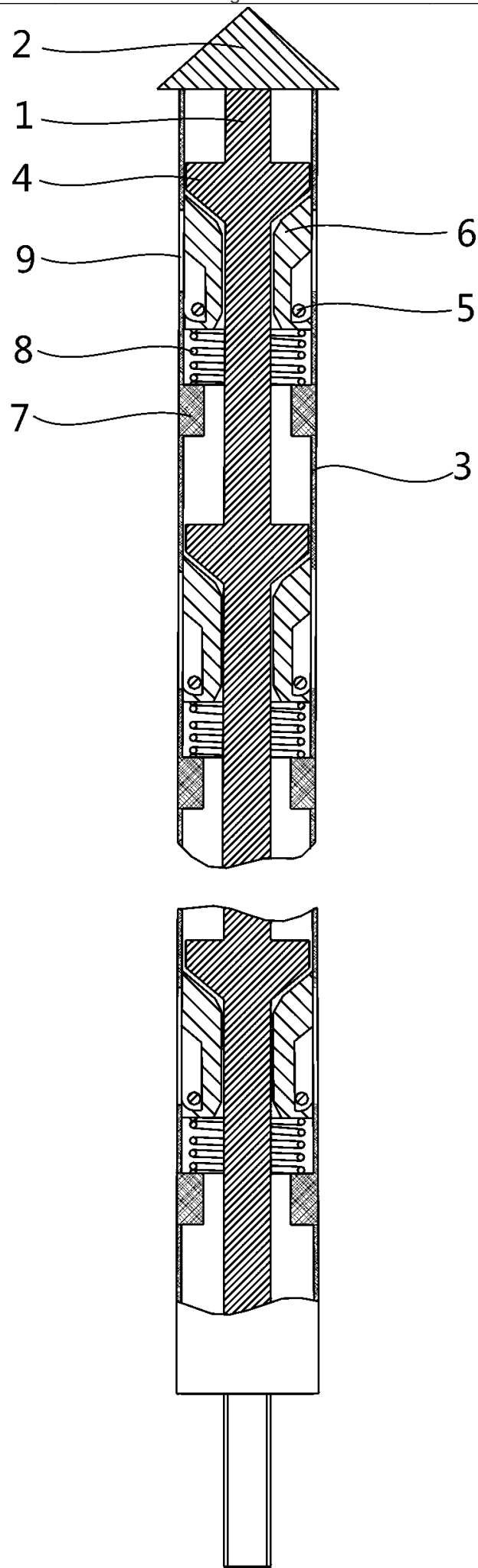
GUANGXI UNIVERSITY

Family 23/100 - FAMPAT - ©Questel

Title

(CN102691514B)

Multistage sectional grouting-free self-expansion type **anchoring rod****Images**



Publication data including kind & date

CN102691514	B	2014-02-05	CN102691514B
CN102691514	A	2012-09-26	CN102691514

**Abstract**

(CN102691514)

The patent refers to the field of 'working-face supports or covers'. The invention discloses a multistage sectional grouting-free self-expansion type **anchoring rod**. The **anchoring rod** comprises an **anchoring rod** body, wherein a sleeve is sleeved on the **anchoring rod** body; a conical head is arranged at the upper end of the sleeve; 2 to 10 ring-shaped cone platforms are arranged on the **anchoring rod** body, and a group of four symmetrically-distributed wedge blocks are fixedly arranged on the **anchoring rod** body below each ring-shaped cone platform through hoops which are arranged in limiting seats of the wedge blocks; four symmetrically-distributed bosses are arranged below each group of the wedge blocks on the inner side of the sleeve, and springs for tightly pressing the wedge blocks upwards are arranged on the bosses; and strip-type square holes are formed in plastic sleeves at corresponding positions of the wedge blocks. The **anchoring rod** is uniquely designed in structure, is firmly and reliably mounted, is simple and quick in construction process, and can reach designed **anchoring** strength without **anchoring rod** grouting construction, so that the wall rock stability of a tunnel project is greatly improved, the construction period is shortened, the working efficiency is improved, the length of an **anchoring** section of the **anchoring rod** can be increased, the cross sectional area of the **anchoring rod** body is reduced, the steel consumption of the whole project is reduced, and the **anchoring rod** has good economic values.

Inventors

YUAN SHUNDE
SHANG HAISONG
ZHAN XIANJUN
LIU ZHIQIANG
LENG XIQIAO
SHU BO
PAN QIANG

Latest standardized assignees - inventors removed

CHINA RAILWAY SOUTHWEST RESEARCH INSTITUTE

Family 24/100 - FAMPAT - ©Questel

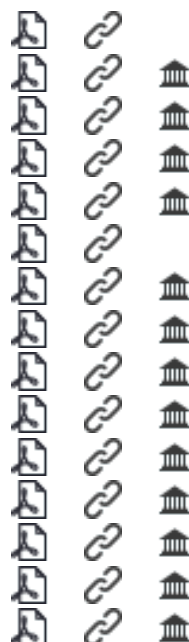
Title

(WO201297186)

Low temperature curable adhesive compositions

Publication data including kind & date

RU2640077	C2	2017-12-26	RU2640077
CA2824859	C	2016-08-30	CA2824859
JP5886321	B2	2016-02-19	JP5886321
AU2012205499	B2	2015-03-26	AU2012205499
NZ614140	A	2015-02-27	NZ-614140
RU2013137781	A	2015-02-27	RU2013137781
JP2014507521	A	2014-03-27	JP2014507521
CN103608415	A	2014-02-26	CN103608415
US8552119	B2	2013-10-08	US8552119
AU2012205499	A1	2013-08-29	AU2012205499
US20130172486	A1	2013-07-04	US20130172486
US8334346	B2	2012-12-18	US8334346
CA2824859	A1	2012-07-19	CA2824859
US20120184681	A1	2012-07-19	US20120184681
WO2012/097186	A1	2012-07-19	WO201297186



Abstract

(WO2012/097186)

The present invention is concerned with curable adhesive compositions for **anchoring** elements in a structural body that exhibit low temperature versus standard temperature degree of cures that are at least 50% or higher. The compositions include, in a first component, a reactive resin, an acetoacetoxy functional monomer and a silane monomer. By using phthalate-free constituents in the formulation, a further 10% increase in strength and durability of the resins at standard temperatures may be realized after curing at low temperatures.

Inventors

HIBBEN QUENTIN L

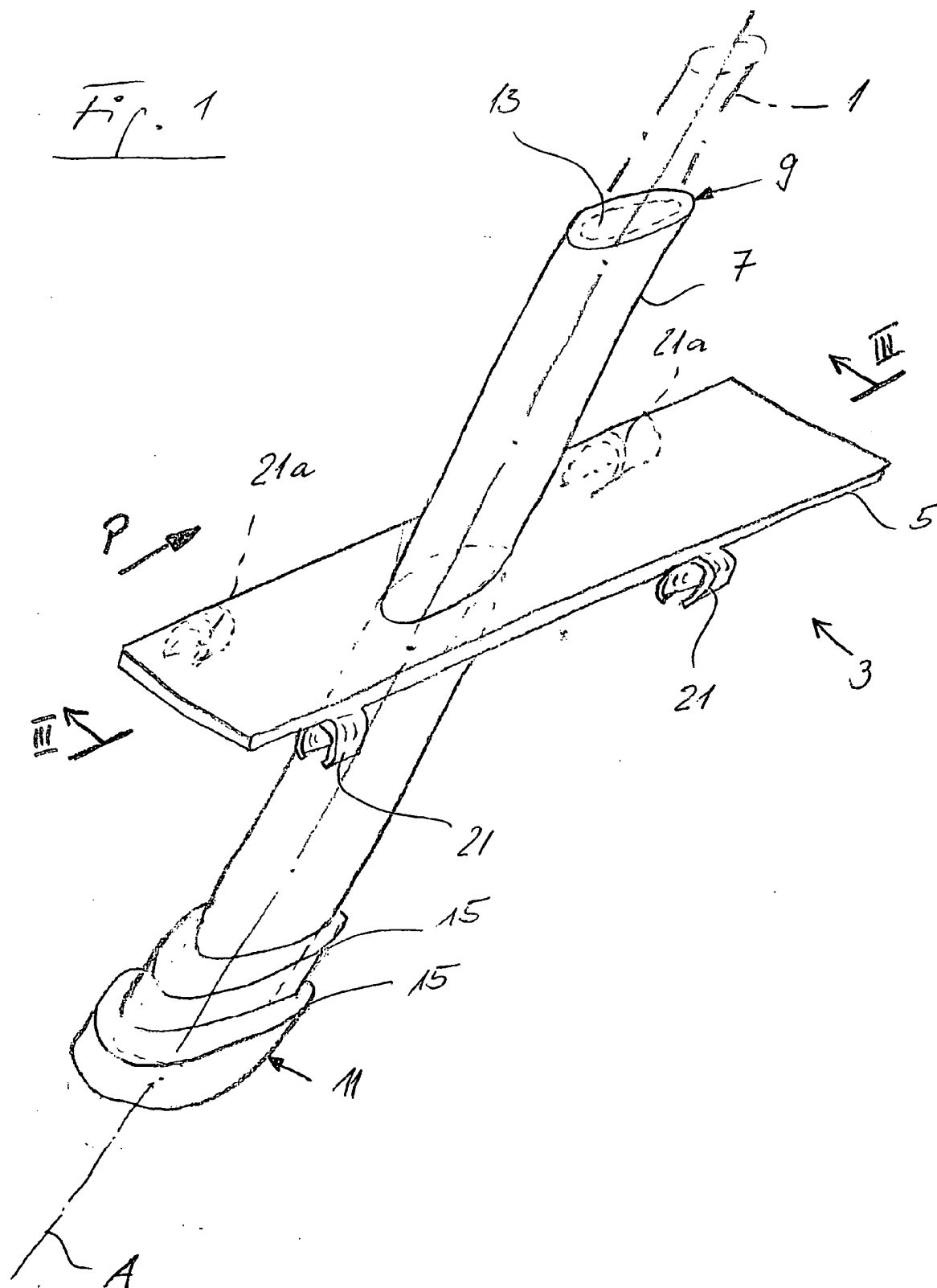
Latest standardized assignees - inventors removedSIMPSON STRONG **TIE**

Family 25/100 - FAMPAT - ©Questel

Title

(EP2096223)

Device for positioning and **anchoring** a tensioning **rod** with a precise position and angle**Images**



Publication data including kind & date

EP2977520	B1	2017-04-26	EP2977520
EP2096223	B1	2016-06-29	EP2096223
EP2977520	A1	2016-01-27	EP2977520
EP2096223	A3	2012-06-06	EP2096223
EP2096223	A2	2009-09-02	EP2096223



Abstract

(EP2096223)

Tensioning **rod** position and angle accurate positioning and **anchoring** device for use during **anchoring** of support block on main concrete formwork, has supporting plate and guide pipe manufactured from plastic as single piece

The device has a supporting plate (5) for fitting and alignment of the device on an armor. A guide pipe (7) is connected with the supporting plate. Thread elements i.e. inner thread, are provided at a lower end (11) of the guide pipe for screwing a tensioning rod (1) provided with a thread section. The plate and the pipe are manufactured from plastic as a single piece. A nut made of metal is inserted or fitted into the guide pipe. An upper end (9) of the guide pipe is closed by a break-through or detachable cover (13).

Inventors

ALBANESE PINO

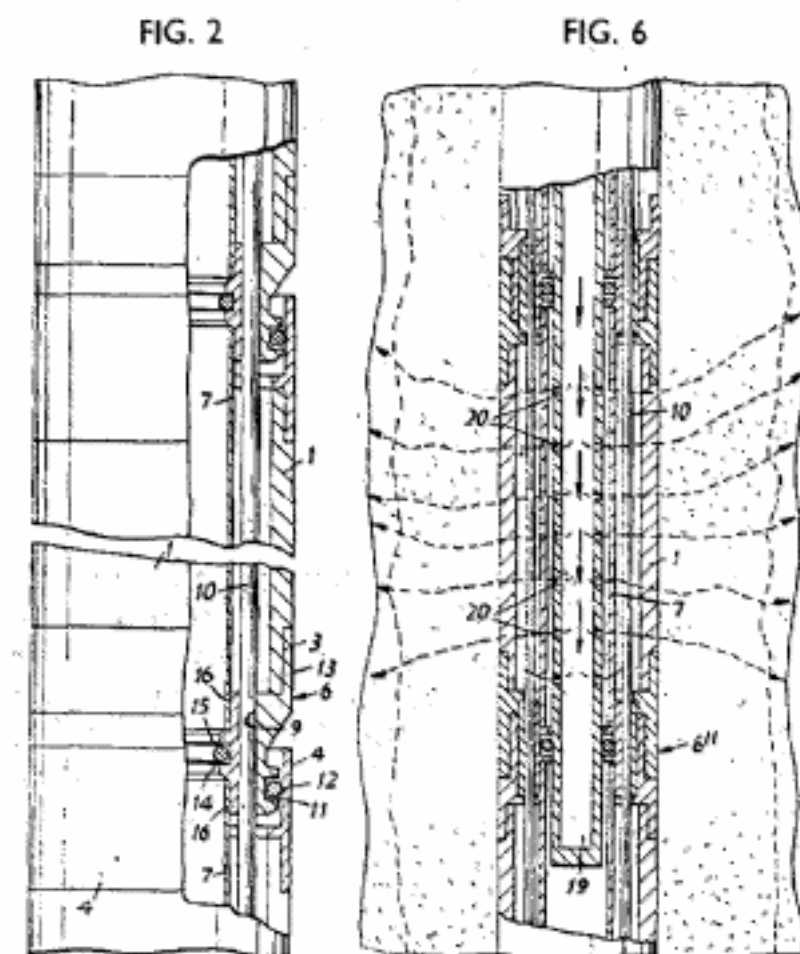
Family 26/100 - FAMPAT - ©Questel

Title

(GB1362843)

Method and device for **anchoring tie** rods in soil or rock

Images



Publication data including kind & date

[GB1362843](#)

A 1974-08-07 GB1362843



Abstract

(GB1362843)

1362843 Ground anchors P A SMITH 14 June 1971 27775/71 Heading E1B A **tie rod** has an anchorage portion comprising a series of inner 7 and outer 1 cylindrical sleeves interconnected by annular spacers 6, through which reinforcing rods 10 between the sleeves passes, the walls of the sleeves being formed with weakenings so that when the anchorage is placed in a preformed hole and grout under pressure is introduced into the central space, the grout is forced out through the weakenings into the space between the sleeves and then into the ground. The central space is flushed out with water so that after the grout has cured a further injection may be made. Seals 14 are provided so that grout is only injected to one cylinder at a time. Alternatively the grouting tube 19 may carry a pair of seals. The spacers may comprise threaded sleeves 6'. The sleeves are preferably made of asbestos **cement**. Various modifications of the spacers and sleeve interconnection

are described. In a modified method the inner sleeves are omitted.

Latest standardized assignees - inventors removed

SMITH

Family 27/100 - FAMPAT - ©Questel

Title

(US9416300)

Low temperature curable adhesive compositions

Publication data including kind & date

[US9416300](#) B2 2016-08-16 US9416300

[US20150020965](#) A1 2015-01-22 US20150020965

**Abstract**

(US20150020965)

The present disclosure is concerned with improved curable adhesive compositions for **anchoring** elements in a structural body that exhibit low temperature versus standard temperature degree of cures that are at least 50% or higher. The compositions include, in a first portion, a reactive resin, an acetoacetoxy functional monomer and a silane monomer. By using phthalate-free constituents in the formulation, a further 10% increase in strength and durability of the resins at standard temperatures may be realized after curing at low temperatures. Improvements in the adhesive compositions that relate to increased shelf life are also presented.

Inventors

HIBBEN QUENTIN LEWIS

Latest standardized assignees - inventors removed

SIMPSON STRONG **TIE**

Family 28/100 - FAMPAT - ©Questel

Title

(EP-638689)

Method for facilitating the extraction of the reinforcement of a prestressed ground-anchor and corresponding anchor

Images

Abstract

(EP0638689)

The invention relates to a prestressed ground anchor. The longitudinal reinforcement (6) in the anchor is sealed into the ground by a hardened sealing slurry in which there is, around the armature, a tube (2) designed to resist the prestressing tension but which is broken by a tension exerted on the reinforcement which is greater than the prestressing tension but insufficient to break the reinforcement.

Inventors

STENNE ROLAND

Latest standardized assignees - inventors removed

BOUYGUES

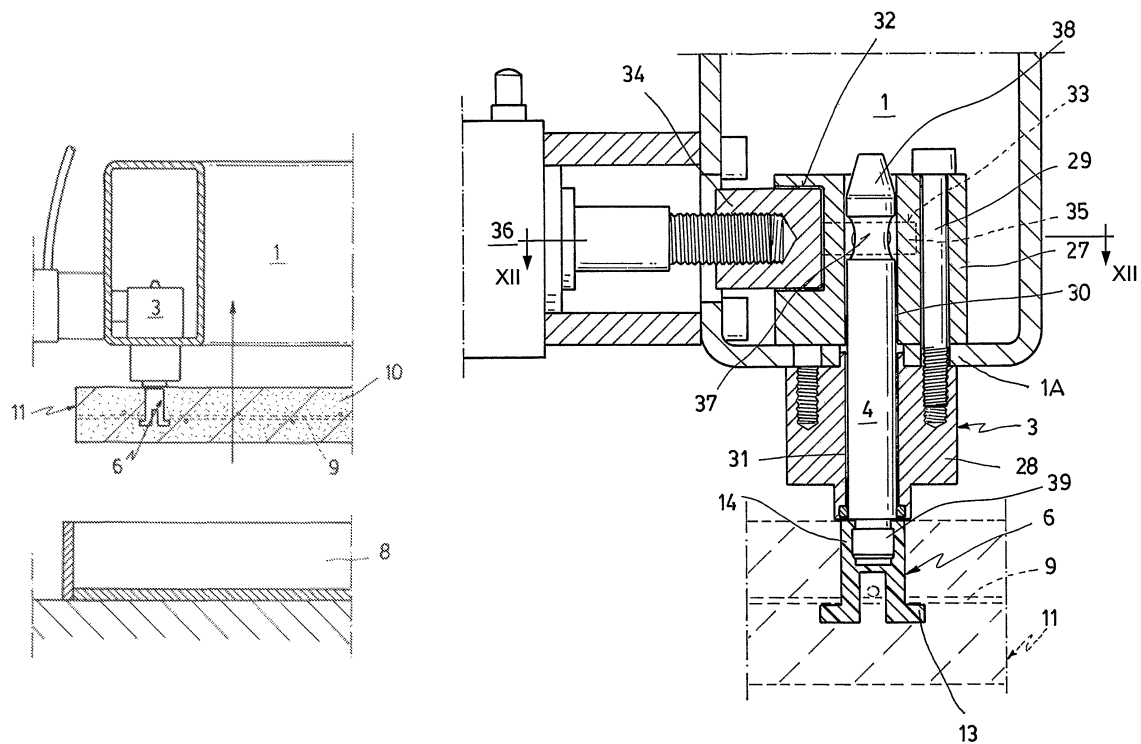
Family 29/100 - FAMPAT - ©Questel

Title

(EP2529908)

Positioning installation for anchorages in the prefabrication of panels of reinforced cement mortar

Images



Publication data including kind & date

BR112012017462	B1	2019-07-23	BR112012017462
MX354429	B	2018-03-05	MX-354429
CA2786342	C	2016-11-01	CA2786342
KR101668659	B1	2016-10-24	KR101668659
BR112012017462	A2	2016-04-19	BR112012017462
DK2529908	T3	2016-02-08	DK2529908T
ES2558442	T3	2016-02-04	ES2558442
EP2529908	B1	2015-12-02	EP2529908
CN102741026	B	2015-10-07	CN102741026B
US9038323	B2	2015-05-26	US9038323
CU24081	B1	2015-03-30	CU--24081
EG26915	A	2014-12-21	EG--26915
AU2010346990	B2	2014-06-19	AU2010346990



JP5525625	B2	2014-04-18	JP5525625				
RU2509647	C1	2014-03-20	RU2509647				
RU2012136440	A	2014-03-10	RU2012136440				
IN6270/CHENP/2012	A	2014-01-10	IN2012CN06270				
EP2529908	A4	2013-11-06	EP2529908				
JP2013520329	A	2013-06-06	JP2013520329				
EP2529908	A1	2012-12-05	EP2529908				
CU20120105	A7	2012-11-15	CU20120105				
US20120285006	A1	2012-11-15	US20120285006				
BR112012017462	A1	2012-11-06	BR112012017462				
KR20120117854	A	2012-10-24	KR20120117854				
CN102741026	A	2012-10-17	CN102741026				
SG182645	A1	2012-08-30	SG-182645				
AU2010346990	A1	2012-08-23	AU2010346990				
MX2012008707	A	2012-08-23	MX2012008707				
WO2011/104390	A8	2012-06-21	WO2011104390				
CA2786342	A1	2011-09-01	CA2786342				
WO2011/104390	A1	2011-09-01	WO2011104390				

Abstract

(EP2529908)

Anchor positioning equipment for pre-fabricating panels of reinforced **cement** mortar (10) that includes a prestressed biaxial reinforcement (9). The panel has some versatile actuator means (6) embedded into the mass of **cement** mortar (10), that do not project from any of the faces (11) thereof, for handling and/or securing said panel to the structure of a building. The means (6) comprise, on the one hand, means for retaining (13) in the set mortar mass and, panel **anchoring** means (14). The equipment has a fixed base structure (2) for supporting stable seat elastic arrangements (5), which receive means (6) and, on the other hand, movable frameworks (1) comprising gripping arrangements (3) for gripping means (6). Movable frameworks (1) are responsible for removing means (6) from stable seat elastic arrangements (5).

Inventors

FRADERA PELLICER CARLOS

Family 30/100 - FAMPAT - ©Questel

Title

(US3753354)

Corrosion-protected **anchoring** rods for **anchoring** structural parts in the earth, as well as method of producing anchorings with corrosion-protected anchor rods

Images

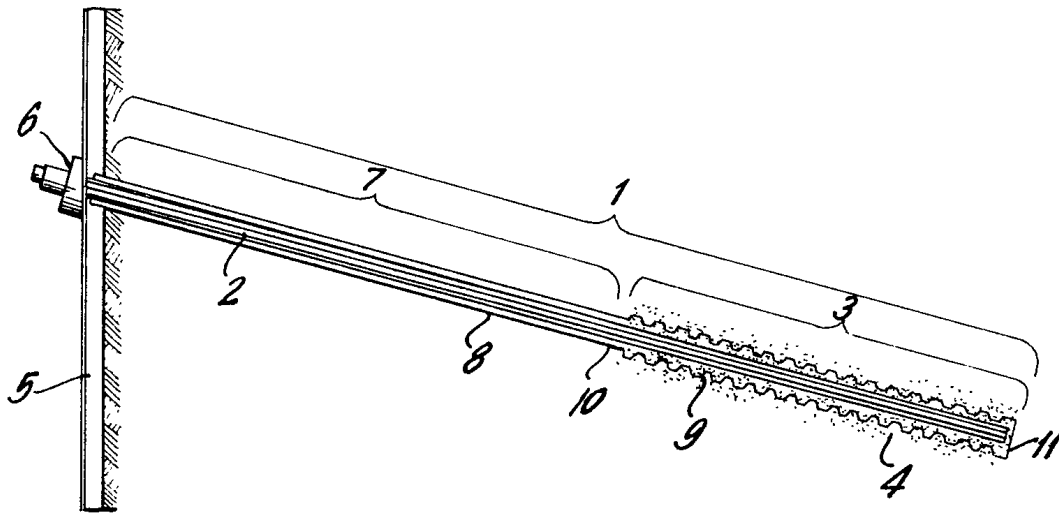


FIG. 1

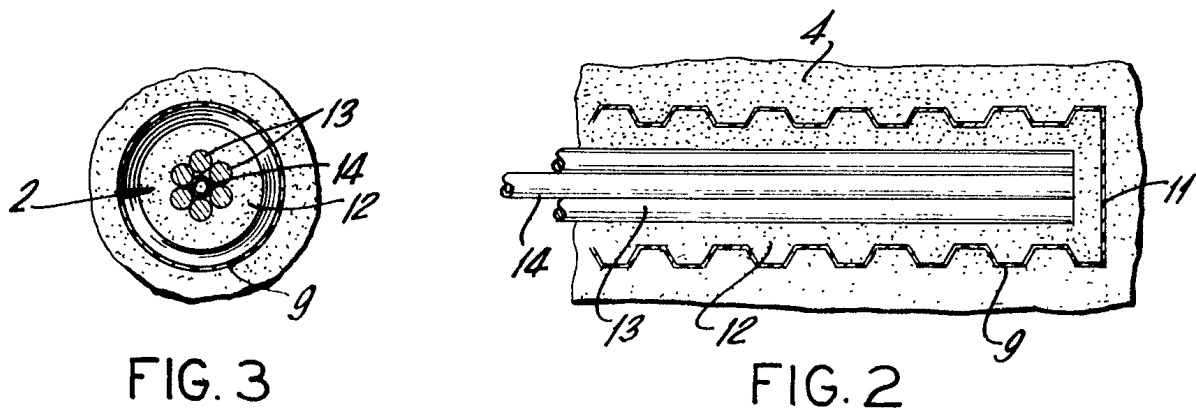


FIG. 3

FIG. 2

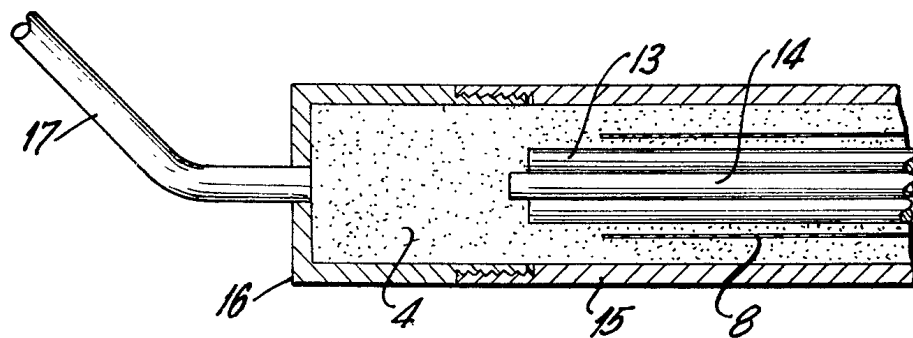


FIG. 4

INVENTOR.
KARLHEINZ BAUER
BY

Publication data including kind & date

JPS5514207	B2	1980-04-15	JP80014207
GB1344354	A	1974-01-23	GB1344354
US3753354	A	1973-08-21	US3753354
FR2122094	A5	1972-08-25	FR2122094
DE2101236	A1	1972-08-17	DE2101236
NL7101560	A	1972-07-14	NL7101560



CH521487

A 1972-04-15 CH-521487



BE762718

A 1971-07-16 BE-762718

Abstract

(US3753354)

A corrosion-protected **anchoring rod** for the **anchoring** of structural parts in the earth is adapted to be placed in a bore hole formed in the earth, with the **rod** consisting of a force transmission section adjacent the opening of the bore hole, and a force introduction section adjacent the end of the **anchoring rod** disposed furthest in the hole. The force transmission section of the **rod** is covered with a smooth, corrosion-preventing covering, while the force introduction section is also covered with a corrosion-preventing covering having a corrugated profile in order to increase the frictional resistance between the **anchoring rod** and the surrounding soil. The corrosion-prevented coverings of the **anchoring rod** are suitably joined to completely enclose the **anchoring rod**, and a bonding composition is provided in the space between the corrugated covering and the tension member.

Inventors

BAUER K

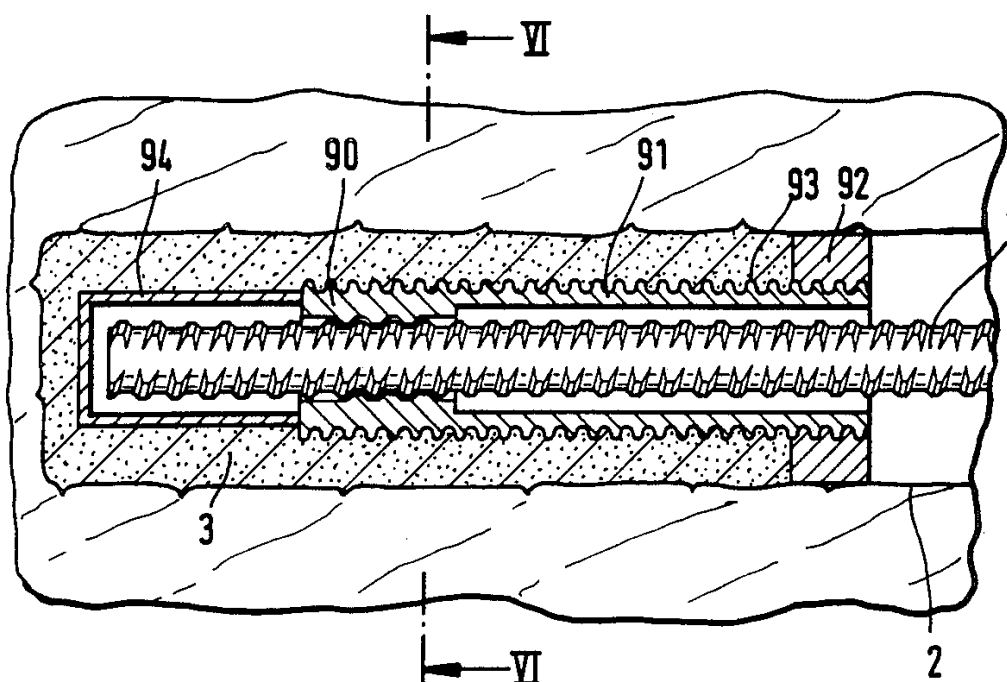
Latest standardized assignees - inventors removed

BAUER KARLHEINZ

Family 31/100 - FAMPAT - ©Questel

Title

(EP-190460)

Anchoring device for the traction member of an anchor, especially a rock anchor**Images****Publication data including kind & date**

CA1270670

A 1990-06-26 CA1270670

CA1270670

C 1990-06-26 CA1270670

ES296497

Y 1989-07-01 ES-296497Y

ES296497

U 1988-12-16 ES-296497U

AU574633

B2 1988-07-07 AU-574633

DE3562403

D1 1988-06-01 DE3562403

AT33875

T 1988-05-15 ATE033875



EP0190460	B1	1988-04-27	EP-190460
DE3503012	C2	1987-06-11	DE3503012
US4630971	A	1986-12-23	US4630971
BR8600356	A	1986-10-14	BR8600356
JPS61217000	A	1986-09-26	JP61217000
ZA8600483	B	1986-09-24	ZA8600483
EP0190460	A1	1986-08-13	EP-190460
AU5275386	A	1986-08-07	AU8652753
DE3503012	A1	1986-07-31	DE3503012
NO860316	L	1986-07-31	NO-860316



Abstract

(EP0190460)

An **anchoring** apparatus for insertion into a borehole in a rock stratum for supporting the rock surface or wall, such as in a rock tunnel or rock excavation, includes a tension member in the form of an axially elongated steel **rod** with force transmission ribs on its outer surface and an **anchoring** element, such an **anchoring** nut, engageable with the **rod**. The **anchoring** element has an inside surface with inwardly extending projections and the adjacent flanks on the projections form grooves within which the force transmission ribs engage. The **anchoring** element is formed of a higher strength material than the **rod**. When a predetermined axially extending tension force acting on the **rod** is exceeded, relative movement takes place between the **anchoring** element and the **rod**. The flanks on the projections on the **anchoring** element in contact with the ribs on the **rod** shear off a portion of the ribs contacted. Accordingly, while the predetermined force is exceeded, the shearing action proceeds and affords a sliding **anchoring** effect between the **rod** and the **anchoring** element. (From US4630971 A)

Inventors

DYCKERHOFF & WIDMANN AKTIENGESELLSCHAFT

Latest standardized assignees - inventors removed

STRABAG

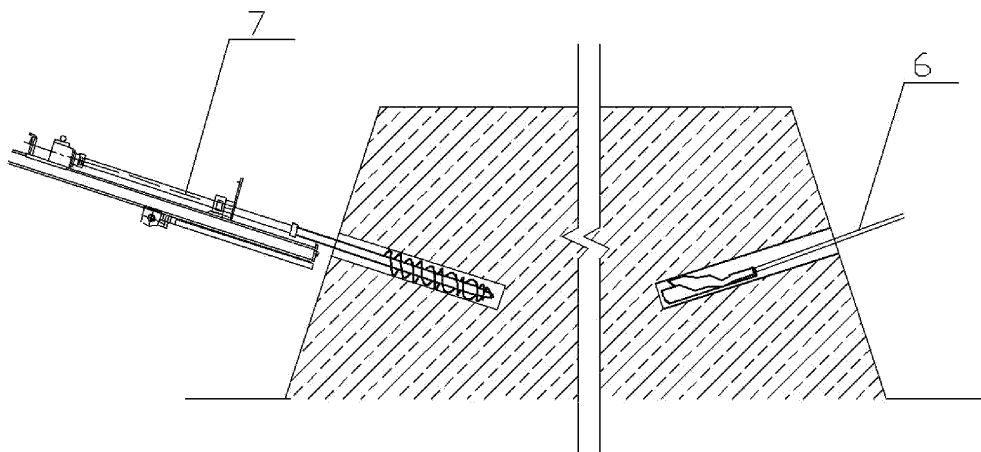
Family 32/100 - FAMPAT - ©Questel

Title

(US9004820)

Grouting method for **anchoring** with polymer

Images



Publication data including kind & date

US9004820	B2	2015-04-14	US9004820
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US20140314503

A1 2014-10-23 US20140314503

CN103215952

A 2013-07-24 CN103215952

**Abstract**

(US20140314503)

A grouting method for **anchoring** with polymer is provided, wherein the method includes steps of: a) **rod** body processing; b) tying up a geotextile bag and grouting tubes on the **anchoring rod** body; c) hole drilling; d) polymer grouting: I. hole sealing grouting; II. **anchoring** grouting. The present invention has advantages of a sufficient adaptability, non-water reaction, convenient and fast construction, being economic, a high strength and a high durability. An expansive polymer material has an obvious compacting effect on soil, and is capable of increasing a friction force between a grout and a base; the waterproofing polymer material is an impermeable material for a steel **rod** body, and is of benefit to anti-corrosion and durability of the **rod** body; a solidifying time of the polymer material is short and no maintenance is needed in such a manner that construction periods are shortened.

Inventors

WANG FUMING

SHI MINGSHENG

GUO CHENGCHAO

CHEN HONGLIANG

ZHAO DONGKAI

HE LEIYING

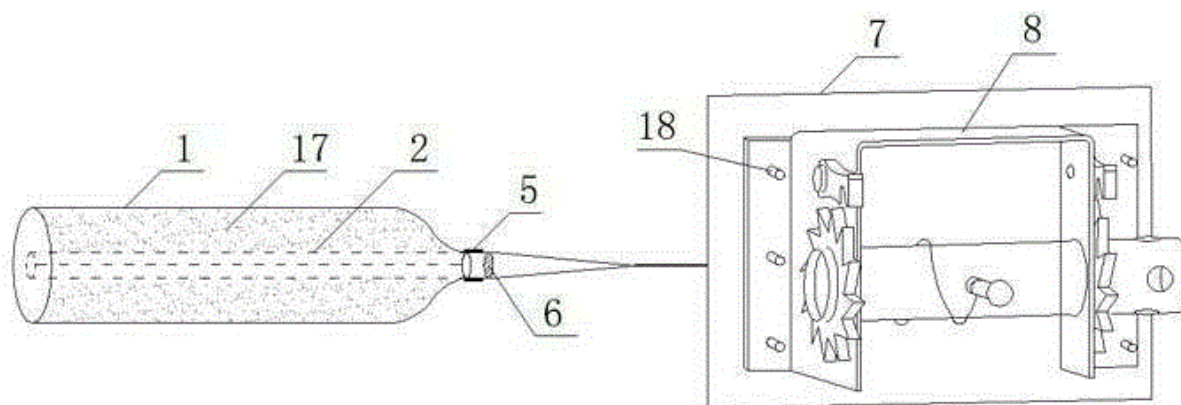
Latest standardized assignees - inventors removed

HENAN BOTE ENGINEERING MAINTENANCE

Family 33/100 - FAMPAT - ©Questel

Title

(CN104695435)

Self-locking **anchoring** fiber anchor **rod** and construction method**Images****Publication data including kind & date**

CN104695435

B 2016-05-25 CN104695435B

CN104695435

A 2015-06-10 CN104695435

**Abstract**

(CN104695435)

The invention provides a self-locking **anchoring** fiber anchor **rod** and a construction method and belongs to the technical field of rock and soil **anchoring**. The self-locking **anchoring** fiber anchor **rod** is composed of a fiber bag, a base plate and a euphroe. The fiber bag is internally provided with a locating rack in a sleeving mode. The locating rack extends into the bottom of the fiber bag. The fiber bag is tightly clamped and fixed to the locating rack from the outer side of a cylinder through a metal clamp. According to the euphroe, a central tube is arranged in a support in a sleeved mode; ratchets are mounted on the left side and the right side of the central tube respectively and located at the outer side of the support;

racks matched with the ratchets are hinged to the support through shaft pins; a rope hook is fixed to the central tube; a round hole is formed in one end of the central tube and located at the outer side of the support, and a thrust **rod** is inserted into the round hole. A grout body is grouted into the fiber bag through a sleeve valve under the action of pressure, the fiber bag expands, the grout body coagulates, solidifies and is anchored in a stable layer; the euphroe is fixed to the base plate through bolts, and the rope-form fiber bag is bundled to the rope hook of the euphroe. The self-locking **anchoring** fiber anchor **rod** is light in structure, anti-corrosive, high in durability and quick and convenient to construct and solves the problems of traditional FRP bar tensioning and **anchoring**, and prestress compensation is convenient.

Inventors

DONG JIANHUA

DONG XUGUANG

ZHU YANPENG

WANG YONGSHENG

HE TIANHU

WANG XUELANG

Latest standardized assignees - inventors removed

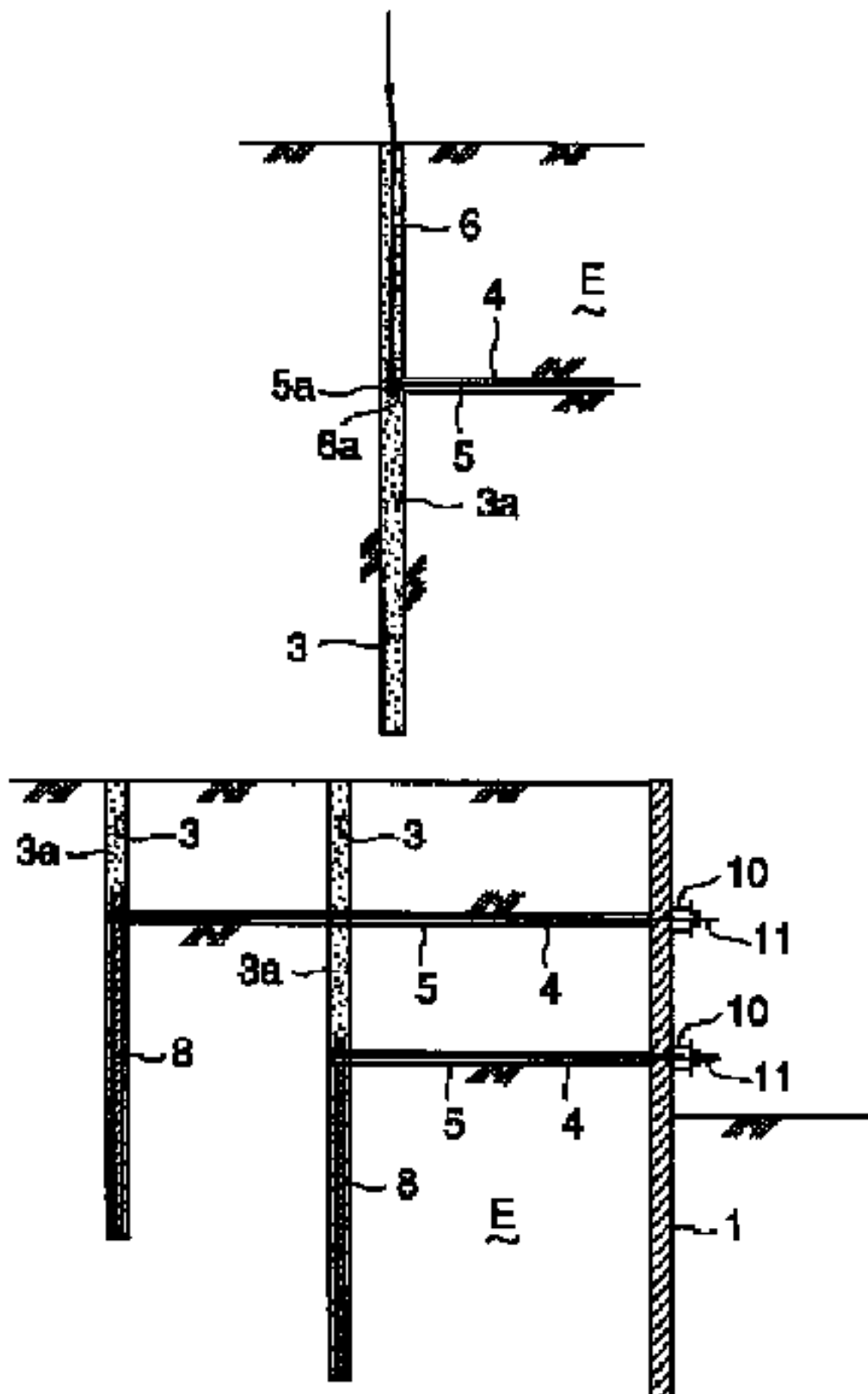
LANZHOU UNIVERSITY OF TECHNOLOGY

Family 34/100 - FAMPAT - ©Questel

Title

(JP07279172)

Method for setting **tie rod** anchor in deep layer ground**Images**



Publication data including kind & date

JPH07279172

A 1995-10-24 JP07279172



Abstract

(JPH07279172)

PURPOSE: To surely support and fix a tie rod anchor by connecting the top end of a tie rod with a withstand load pile driven into the ground orthogonally to it. **CONSTITUTION:** A tie rod anchor hole 4 is excavated toward a withstand load opposite hole 3 in the ground E through a land slide protection wall 1 to reach it, a tie rod 5 is inserted and extended through the deep part of the pile hole 3. A steel bar 6 having a hook part 6a on the top end is inserted to the pile hole 3 from on the ground, and the top end of the tie rod 5 is suspended and fixed by the hook part 6a. An extended nose type middle split steel pile is inserted into the pile hole 3 with the steel bar 5 as a guide. After the pushing work for inserting the top end part

of the tie rod 5 into the clearance is finished, the steel bar 6 is drawn up, removed from the tie rod 5, and recovered. Finally, the protruding end on the land slide protection wall 1 side of the tie rod 5 is fastened and fixed to a wale 10 through a bearing metallic material 11, whereby the fastening work of the tie rod 5 is completed, and the bearing creation of the land slide protection wall 1 is completed.

Inventors

HACHIRI ISAO

Latest standardized assignees - inventors removed

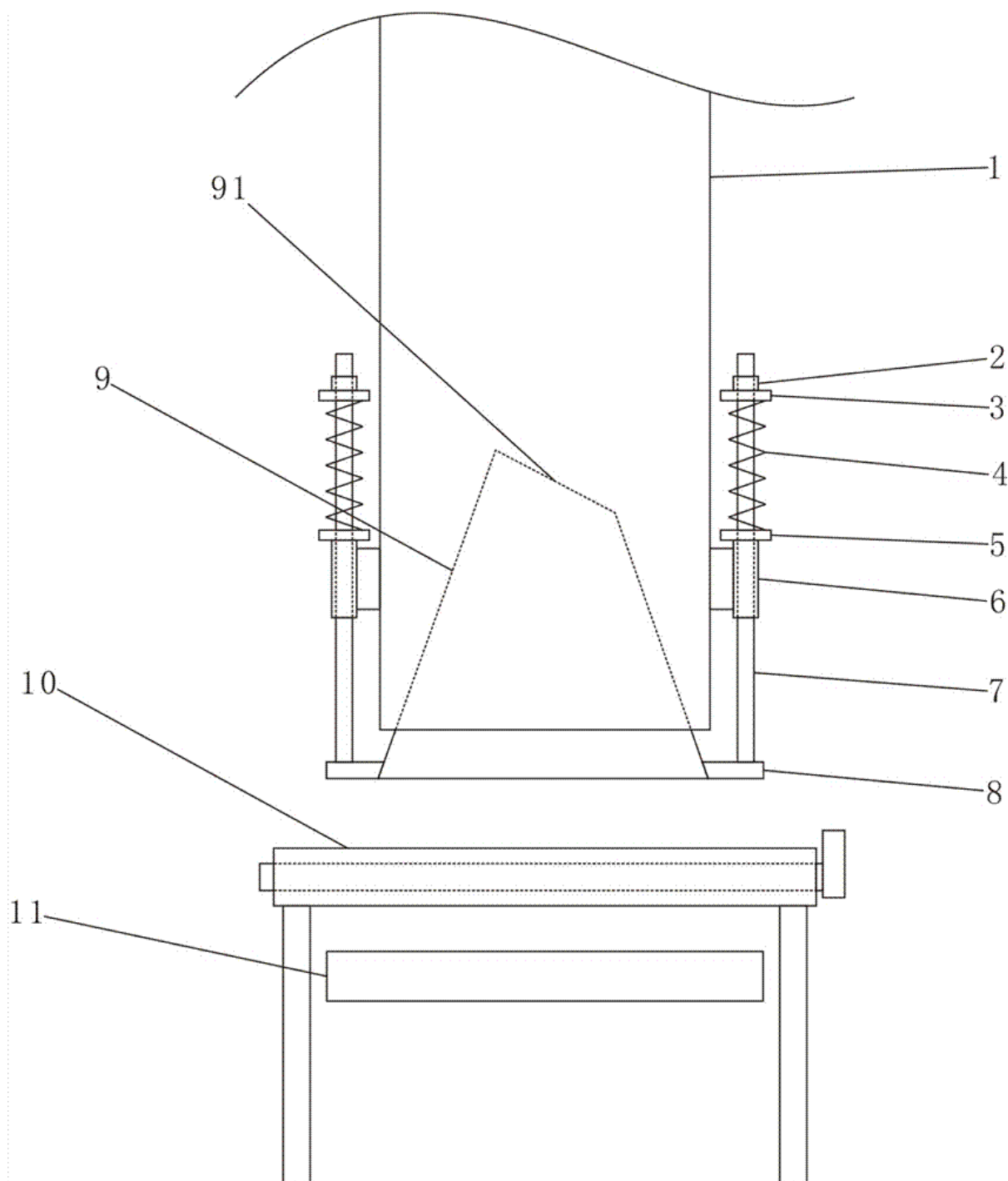
OBAYASHI

Family 35/100 - FAMPAT - ©Questel

Title

(CN208279002U)

Carbide slag system of unloading

Images

CN208279002

U 2018-12-25 CN208279002U

Abstract

(CN208279002)

The utility model provides a carbide slag system of unloading, including the conveyer pipe, discharge hopper and conveyor belt, the exit of conveyer pipe, be provided with the discharge hopper that can reciprocate in its body, the whole circular cone type that is of discharge hopper, its pointed end up, wide end down, the top slope of discharge hopper is provided with a feed inlet, its bottom is provided with the discharge gate, the diameter of this discharge gate is corresponding with the diameter of conveyer pipe, and protrusion in the export of conveyer pipe, the both sides of discharge hopper are provided with elevating system, and through elevating system and duct connections, below at the discharge hopper is provided with unloading adjusting device through a support frame, unloading adjusting device's below is provided with conveyor belt. A carbide slag system of unloading, its reasonable in design, simple structure, the anti -sticking is stifled effectual, is convenient for control the volume of unloading of carbide slag, the dismounting of discharge hopper is simple and convenient, makes things convenient for the staff to maintain, change.

Inventors

XIE HONGHAI

CUI ZHANGMIN

ZHAI CHUANXIANG

CHEN JIAN

Latest standardized assignees - inventors removed

SHANDONG LUTAI HOLDING

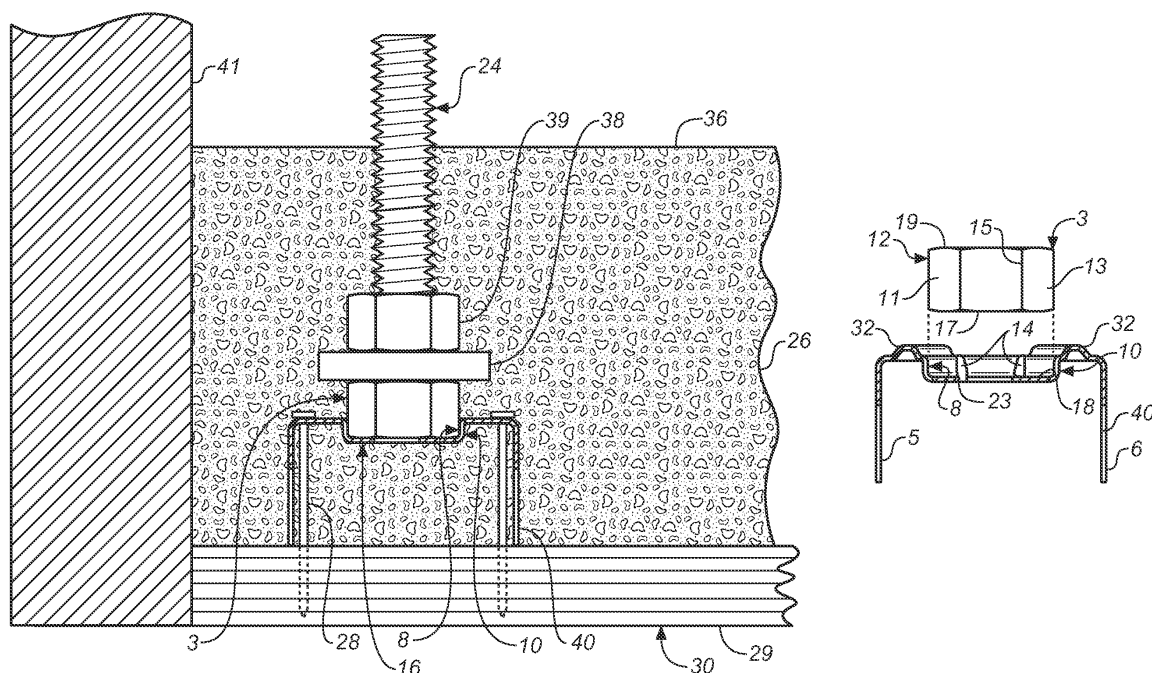
JINING JINWEI **CEMENT**

Family 36/100 - FAMPAT - ©Questel

Title

(US8381482)

Anchor bolt locator

Images**Publication data including kind & date**

US8621816

B1 2014-01-07

US8621816

US20140000212

A1 2014-01-02

US20140000212

US8381482

B2 2013-02-26

US8381482



[US20130025234](#)

A1 2013-01-31 US20130025234

Abstract

(US20130025234)

An anchor bolt locator is provided that is inexpensively manufactured on automatic die-press machines from sheet steel and a structural nut that does not require any welding, while also being easy to use and install with current, commonly-used building practices and anchor designs. The anchor bolt locator is made from a galvanized sheet metal chair and a structural nut attached to the chair by way of a friction fit.

Inventors

LIN JIN-JIE

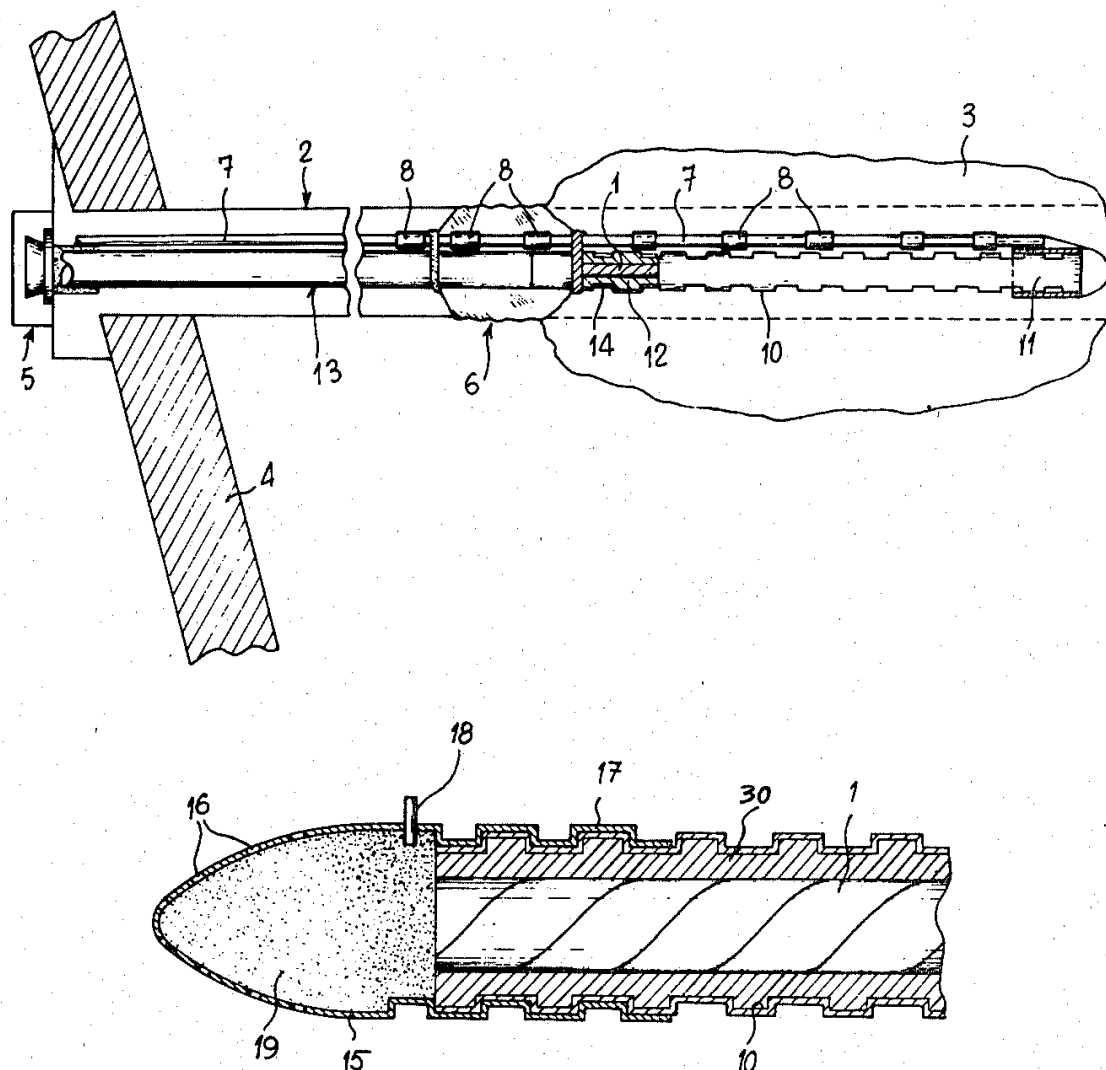
ELLIS TIMOTHY S

Latest standardized assignees - inventors removedSIMPSON STRONG **TIE**

Family 37/100 - FAMPAT - ©Questel

Title

(US4397589)

Ground anchorage means utilizing a reinforcement or **tie** insulated from the ground**Images****Publication data including kind & date**[JP1374525](#)

C 1987-04-22 JP1374525

[JPS6142046](#)

B2 1986-09-18 JP86042046



US4397589	A	1983-08-09	US4397589
FR2397492	B1	1982-10-29	FR2397492
CA1072786	A	1980-03-04	CA1072786
JPS5419508	A	1979-02-14	JP54019508
FR2397492	A1	1979-02-09	FR2397492
NL7807339	A	1979-01-16	NL7807339
BE868954	A	1979-01-12	BE-868954



Abstract

(US4397589)

The ground anchorage means comprises a reinforcement combined with an adjacent injection tube furnished with sleeves acting as retention valves and a distensible sack intended to obturate the drilled hole. The fixing zone of the reinforcement is protected by an impervious envelope made of a rot-proof and anti-corrosive material in which the reinforcement is immersed in a hardenable material such as grouting **cement**. The free zone is immersed in an anti-corrosive product, which may be flexible in another envelope or sheath, the two envelopes being joined together by a sealing sleeve. Application, particularly for supporting walls.

Inventors

DARROUSSIN MICHEL

MARCHAND DANIEL

Latest standardized assignees - inventors removed

SOLETANCHE

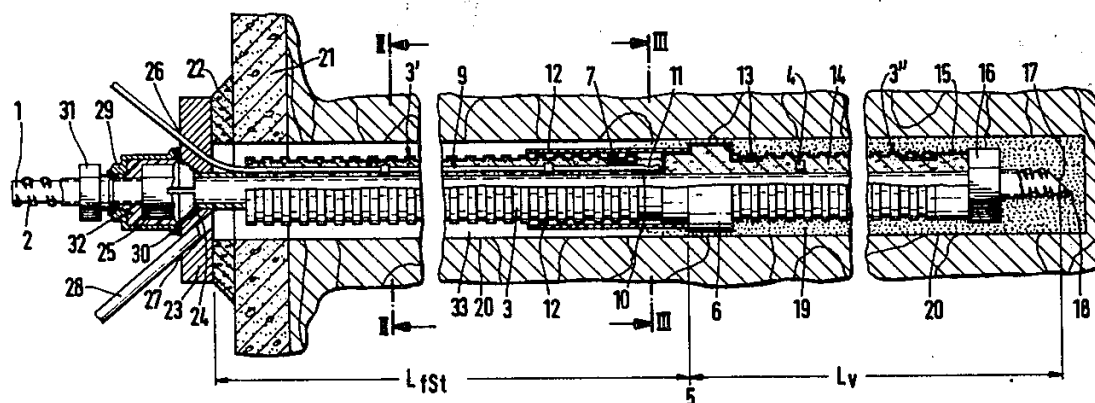
Family 38/100 - FAMPAT - ©Questel

Title

(US4140429)

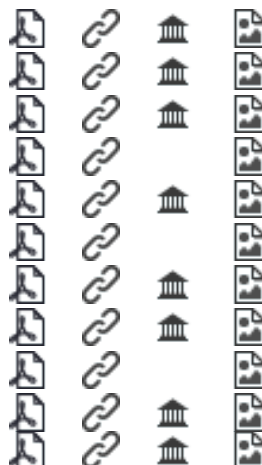
Corrosion protected tensioning member for a prestressable anchor in solid rock

Images



Publication data including kind & date

CH630439	A5	1982-06-15	CH-630439
GB1586550	A	1981-03-18	GB1586550
FR2381167	B1	1980-09-12	FR2381167
AT354963	B	1980-02-11	AT-354963
CA1064745	A	1979-10-23	CA1064745
ATA117678	A	1979-07-15	AT7801176
DE2707238	C3	1979-07-12	DE2707238
US4140429	A	1979-02-20	US4140429
ZA7800332	B	1979-01-31	ZA7800332
DE2707238	B2	1978-11-09	DE2707238



FR2381167

A1 1978-09-15 FR2381167

DE2707238

A1 1978-08-24 DE2707238

**Abstract**

(US4140429)

A profiled tensioning **rod** or combination of rods is provided at the end which is to be inserted into the bore hole of a rock, with a corrosion protective tube formed in three parts, an **anchoring** part adapted to extend over the greater portion of the anchored end of the **rod**, a "free steel part" adapted to extend over the (initially) unconnected part of the **anchoring rod** which extends into the bore hole and a junction part to which the other two parts are connected. The junction part extends beyond the periphery of the other parts of the tube and is large enough to prevent any substantial flow of **cement** outwardly from the space between the **anchoring** part and the bore hole. The free steel part of the tube contains a deaerating conduit so that when the rock formation is stabilized after the various borings, etc., the free steel part of the bore hole may be cemented.

Inventors

HERBST THOMAS

Latest standardized assignees - inventors removed

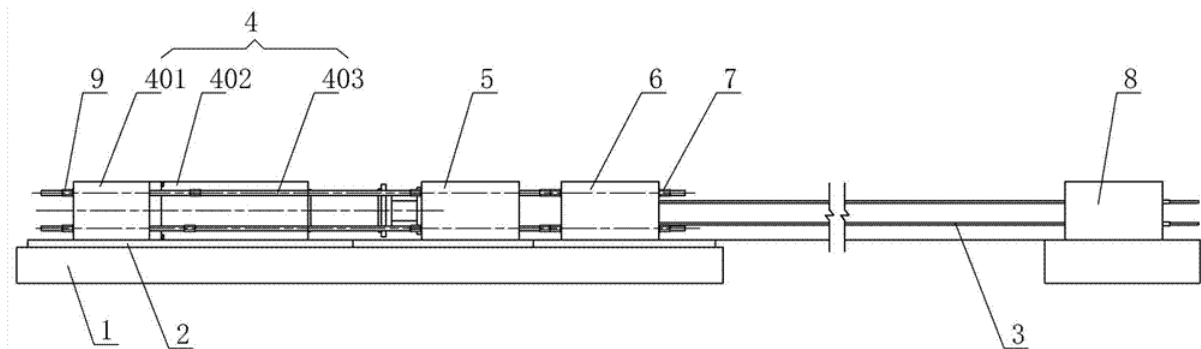
STRABAG

Family 39/100 - FAMPAT - ©Questel

Title

(CN208163977U)

Automatic push -pull system that opens of prestressing steel

Images**Publication data including kind & date**

CN208163977

U 2018-11-30 CN208163977U

**Abstract**

(CN208163977)

The utility model relates to an automatic push -pull system that opens of prestressing steel, including base, two sets of loading subassembly and the fixed beam that sets gradually, shifting beam and end beam, two sets of loading subassemblies and shifting beam set up in fixing on the track on the base, fixed beam, shifting beam and end beam three parallel arrangement, two sets of loading subassemblies all arrange along reinforcing bar stretch -draw direction, and with the length direction line of fixed beam, shifting beam and end beam is the central symmetry setting, and many reinforcing bars of treating stretch -draw on average divide into two sets ofly, and two sets of reinforcing bars group symmetry sets up, the stretch -draw end and the tail end of two sets of reinforcing bars group are fixed through the ground tackle correspondence respectively on the shifting beam with on the end beam. The utility model discloses overall structure reasonable in design, simple structure, stretch-draw is carried out to prestressing steel through two sets of drive assembly to easily installation, can be simultaneously carries out stretch -draw to multiunit reinforcing bar group.

Inventors

ZOU HONGCHAO

SUN YABIN

YANG JIAJIA

Latest standardized assignees - inventors removed

RUZHOU ZHENG TIE SANJIA CEMENT PRODUCT

Family 40/100 - FAMPAT - ©Questel

Title

(EP2893139)

Arrangement for the high-strength anchorage of a tendon having a tie rod in a structural element and method for producing an anchorage of this type

Images

ES2715996	T3	2019-06-07	ES2715996				
EP2893139	B1	2018-12-19	EP2893139				
DE202013012224	U1	2015-10-29	DE202013012224				
EP2893139	A1	2015-07-15	EP2893139				
DE102012017704	A1	2014-03-13	DE102012017704				
WO2014/037113	A1	2014-03-13	WO201437113				

Abstract

(EP2893139)

The invention relates to an arrangement and a method for the high-strength anchorage of a tendon (1) having a **tie rod** (4) in a structural element (3). To this end, the structural element (3) has a channel (17) in which the end of the **tie rod** (4) to be anchored is inserted. A force-locked connection with the wall of the channel (17) is created by means of a curable jointing compound (18). According to the invention, the **tie rod** (4) has at least one circumferential collar (12) in the region of the end to be anchored, which collar has a radial play with respect to the wall of the channel (17). In this way, it is possible to guarantee a high-strength anchorage for tendons (1) even with a short anchorage length in the channel (17).

Inventors

JUNGWIRTH DIETER

DEMELT ARMIN

DOTZLER FRIEDRICH

Latest standardized assignees - inventors removed

DYWIDAG SYSTEMS INTERNATIONAL

Family 41/100 - FAMPAT - ©Questel

Title

(EP1310595)

Anchoring device

Images

KR20030040092	A	2003-05-22	KR20030040092				
FR2832194	A1	2003-05-16	FR2832194				
TW200300195	A	2003-05-16	TW200300195				
US20030089048	A1	2003-05-15	US20030089048				
EP1310595	A1	2003-05-14	EP1310595				
CA2411686	A1	2003-05-13	CA2411686				
BRPI0204640	A1	2002-12-17	BR200204640				

Abstract

(EP1310595)

The procedure for reinforcing a cast concrete slab anchor (1) in the form of a long bolt (12) in a sleeve (11) with an outer galvanized metal casing consists of coating the sleeve with a mortar (3) made from a resin mixed with sand and **cement** before the concrete is poured.

Inventors

RADA NICOLAS

Latest standardized assignees - inventors removed

ALSTOM

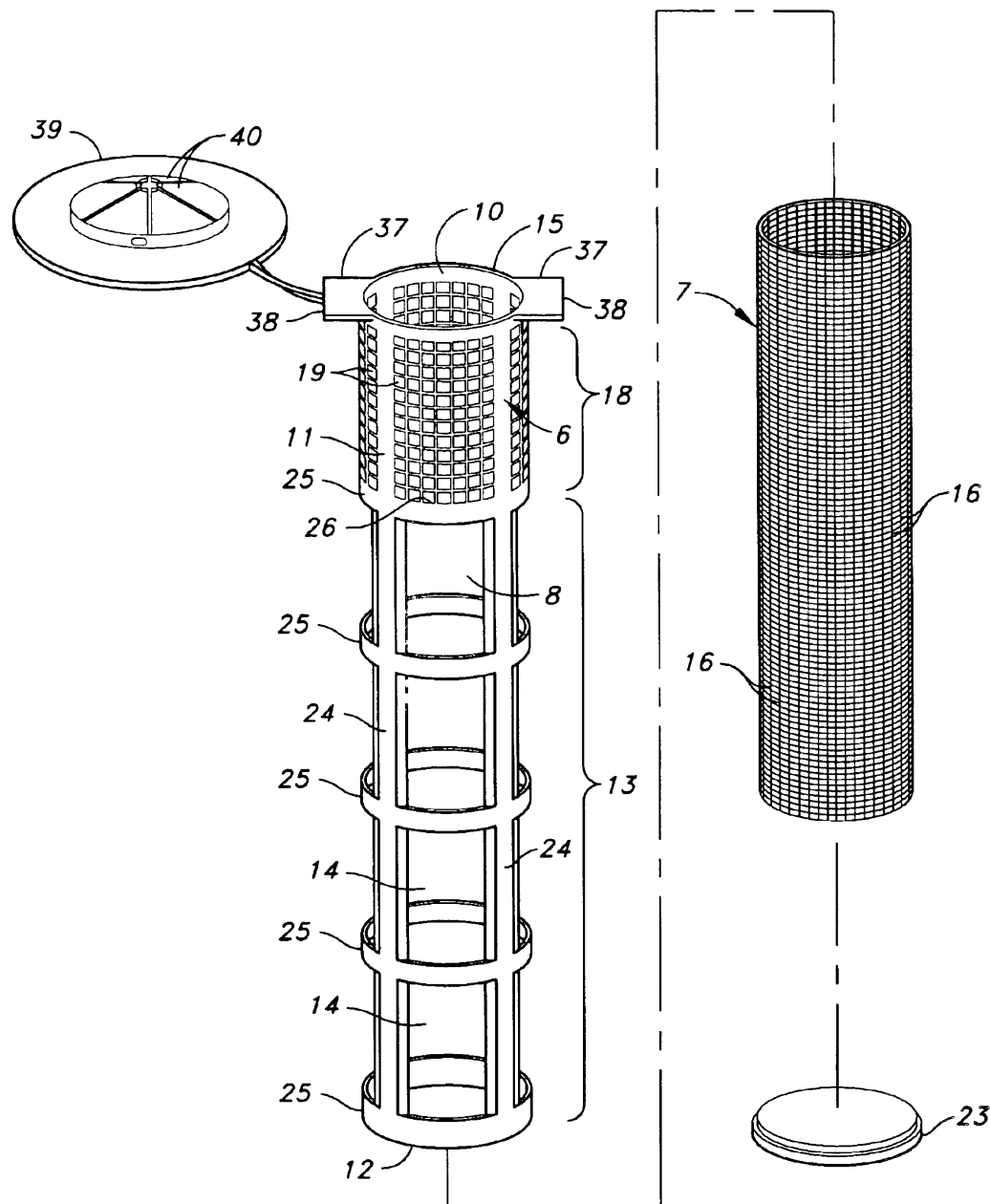
Family 42/100 - FAMPAT - ©Questel

Title

(US6837018)

Connection and method for setting a composite anchor with an apertured screen in a substrate

Images

**Publication data including kind & date**[US6837018](#)

B1 2005-01-04 US6837018

[US20040250497](#)

A1 2004-12-16 US20040250497

**Abstract**

(US20040250497)

A connection, and a method of forming a connection, that adhesively fixes and bonds a fastening element or anchor in bore hole, particularly in a soft substrate or substrate with an interior cavity or void where the anchor is to be set in vertical wall or set upwardly into a ceiling. To make the connection, an accessory is used that has the form of a sleeve having a closed or partially blocked insertion end and an open anchor receiving end and apertures running along its length. The accessory helps to ensure that the anchor is surrounded with mortar or adhesive, and the mortar or adhesive contacts the wall of the bore. The cylindrical wall of the sleeve has apertures along its length. The sleeve can be formed with larger apertures formed near the anchor receiving end of the sleeve and smaller apertures formed near the insertion end of the sleeve. The sleeve is formed by inserting an open-ended cylindrical mesh tube into a frame that holds the tube along its length at a select location. This select location can be near the insertion end and away from the anchor receiving end. The sleeve has an external diameter that allows the sleeve to fit into the bore in the substrate and an internal diameter that is large enough to receive the anchor that is to be secured in the bore. The length of the sleeve corresponds or is similar in length to the

embedded length of the anchor. The apertures in the peripheral surface of the sleeve create passages therethrough for the uncured adhesive.

Inventors

HAGEL GERALD W

HOUCK JOEL M

Latest standardized assignees - inventors removed

SIMPSON STRONG TIE

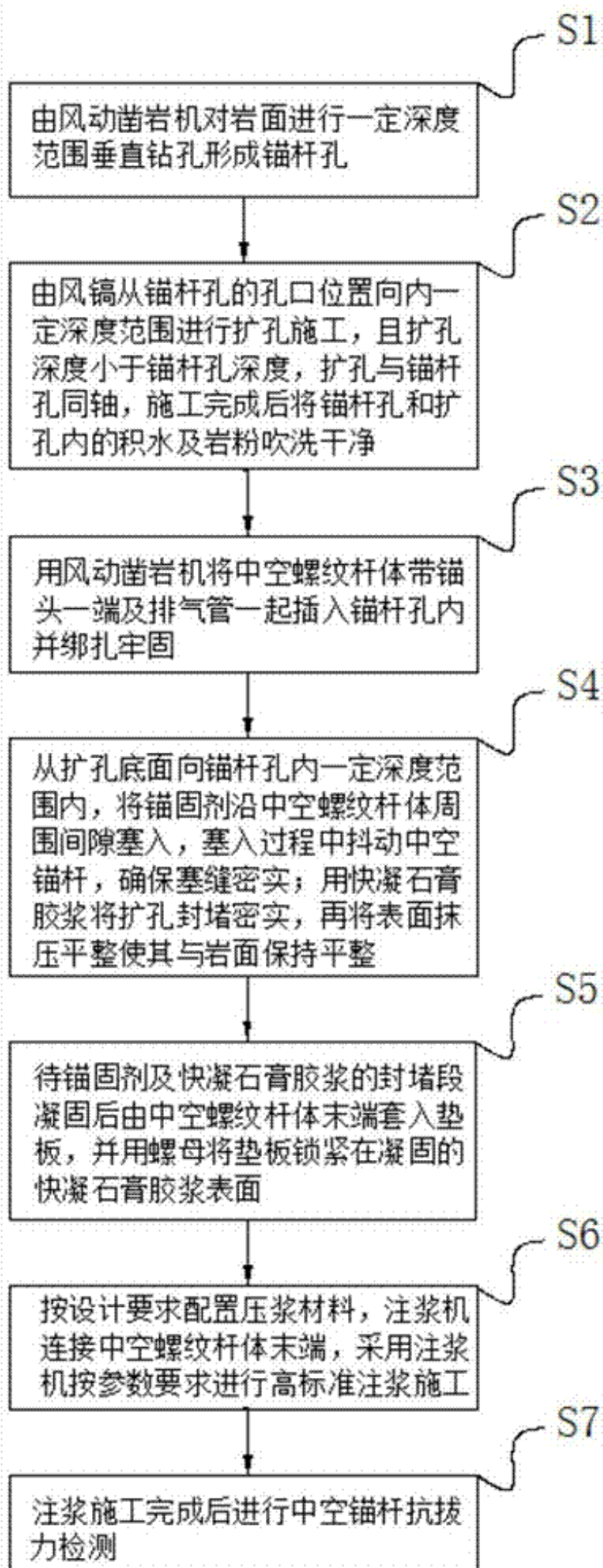
Family 43/100 - FAMPAT - ©Questel

Title

(CN109268048)

Construction method for improving grouting quality of hollow anchoring rods in tunnel anchor

Images



Publication data including kind & date

CN109268048

A 2019-01-25 CN109268048

**Abstract**

(CN109268048)

The invention provides a construction method for improving grouting quality of hollow **anchoring** rods in a tunnel anchor. The method is applicable to the technical field of building construction and includes the following steps that perpendicular drilling is conducted on a rock surface within a certain depth scope through a pneumatic rock drill to form **anchoring rod** holes; hole expansion construction is conducted from the hole openings of the **anchoring rod** holes to the inside within a certain depth scope through a pneumatic pick; the pneumatic rock drill adopts hollow threaded rods for driving one end of each **anchoring** head and venting pipes into the **anchoring rod** holes, and the **anchoring** heads and the venting pipes are firmly bound; gaps around the hollow threaded rods are filled with an **anchoring** agent; fast-setting gypsum adhesive **cement** is used for fully sealing expanded holes; after the segments sealed by the **anchoring** agent and the fast-setting gypsum adhesive **cement** are solidified, the hollow threaded rods are sleeved with padding plates from the tail ends, and nuts are used for tightly locking the padding plates on the surface of the solidified fast-setting gypsum adhesive **cement**; a grouting machine is adopted for conducting high-standard grouting construction according to parameter requirements. By means of the method, not only can design requirements be met, but also the cost can be reduced to the greatest degree, the actual operation performance is great, and the construction difficulty of rigid grouting of the tunnel **anchoring** rods is effectively solved.

Inventors

LI WEIHONG

LAN QINGPENG

HE CHENGLIN

ZHOU CHANGDONG

XU GUOWEI

WANG YONG

GONG LEI

Latest standardized assignees - inventors removed

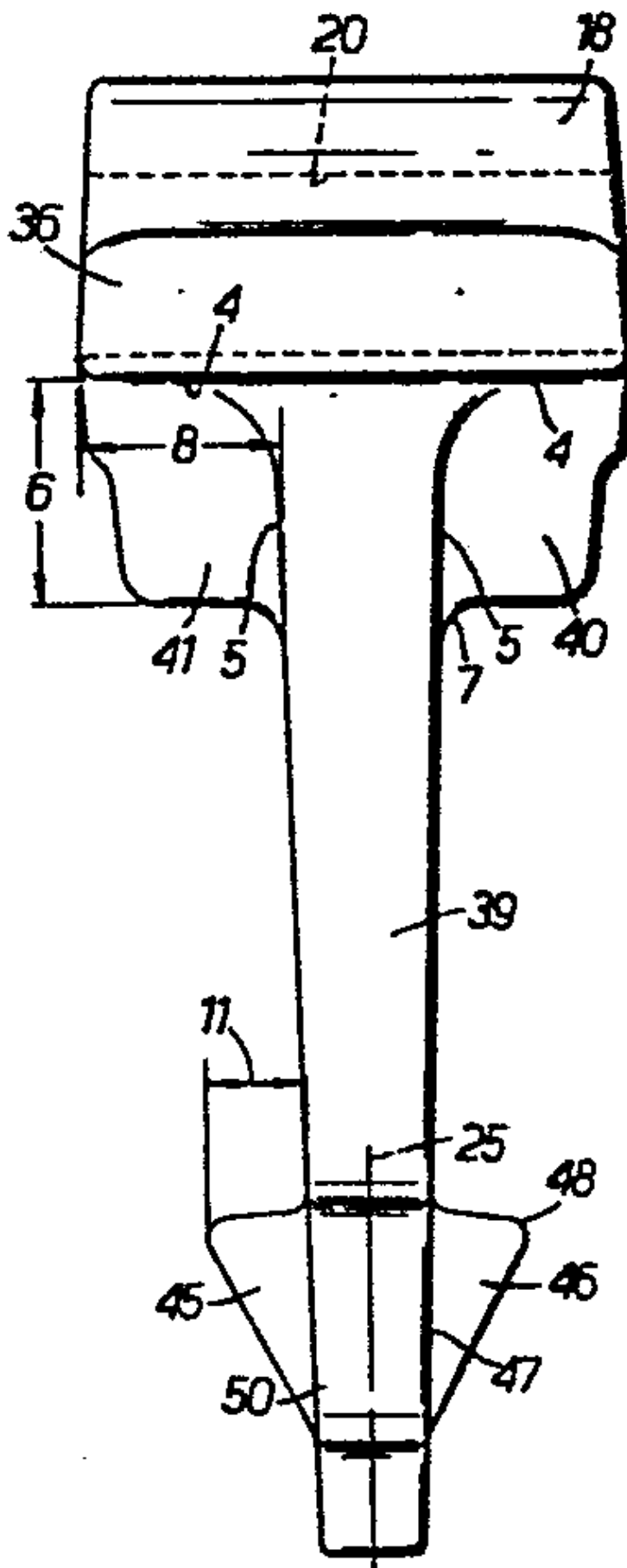
THIRD CONSTRUCTION

Family 44/100 - FAMPAT - ©Questel

Title

(EP--50048)

Anchoring a railway rail-fastening clip to a foundation for a railway rail**Images**

**FIG. 6.**

Publication data including kind & date

JPH0242721	Y2	1990-11-14	JP02042721Y
IE51939	B1	1987-04-29	IE--51939
JPS61184704	U	1986-11-18	JP61184704U
CA1192531	A	1985-08-27	CA1192531
AU544757	B2	1985-06-13	AU-544757
US4466569	A	1984-08-21	US4466569
EP0050048	B1	1984-07-18	EP--50048
GB2087460	B	1984-05-31	GB2087460
YU246981	A	1984-04-30	YU8102469
JPS5796101	A	1982-06-15	JP57096101
GB2087460	A	1982-05-26	GB2087460
AU7633081	A	1982-04-22	AU8176330
EP0050048	A1	1982-04-21	EP--50048
IE812394	L	1982-04-15	IE8102394

**Abstract**

(EP0050048)

An **anchoring** device has a head part (18), which anchors the clip and is to lie above the foundation, and a tail part (39) which is to lie in the foundation and is in the form of a single vertical **rod**. At least one vane (40), to resist turning of the device about its vertical axis, has its upper extremity (4) joined to the bottom of the head part and has one of its sides (5) joined to the upper portion of the tail part, the vane having a vertical height (6) and a horizontal width (8) greater than its horizontal thickness. At least one projection (46), below the vane or vanes, projects laterally from the tail part and has a horizontal or nearly horizontal top, the projection or projections serving to resist vertical forces tending to pull the **anchoring** device vertically upwardly out of the foundation.

Inventors

TAYLOR, HOWARD PETER JOHN

Latest standardized assignees - inventors removed

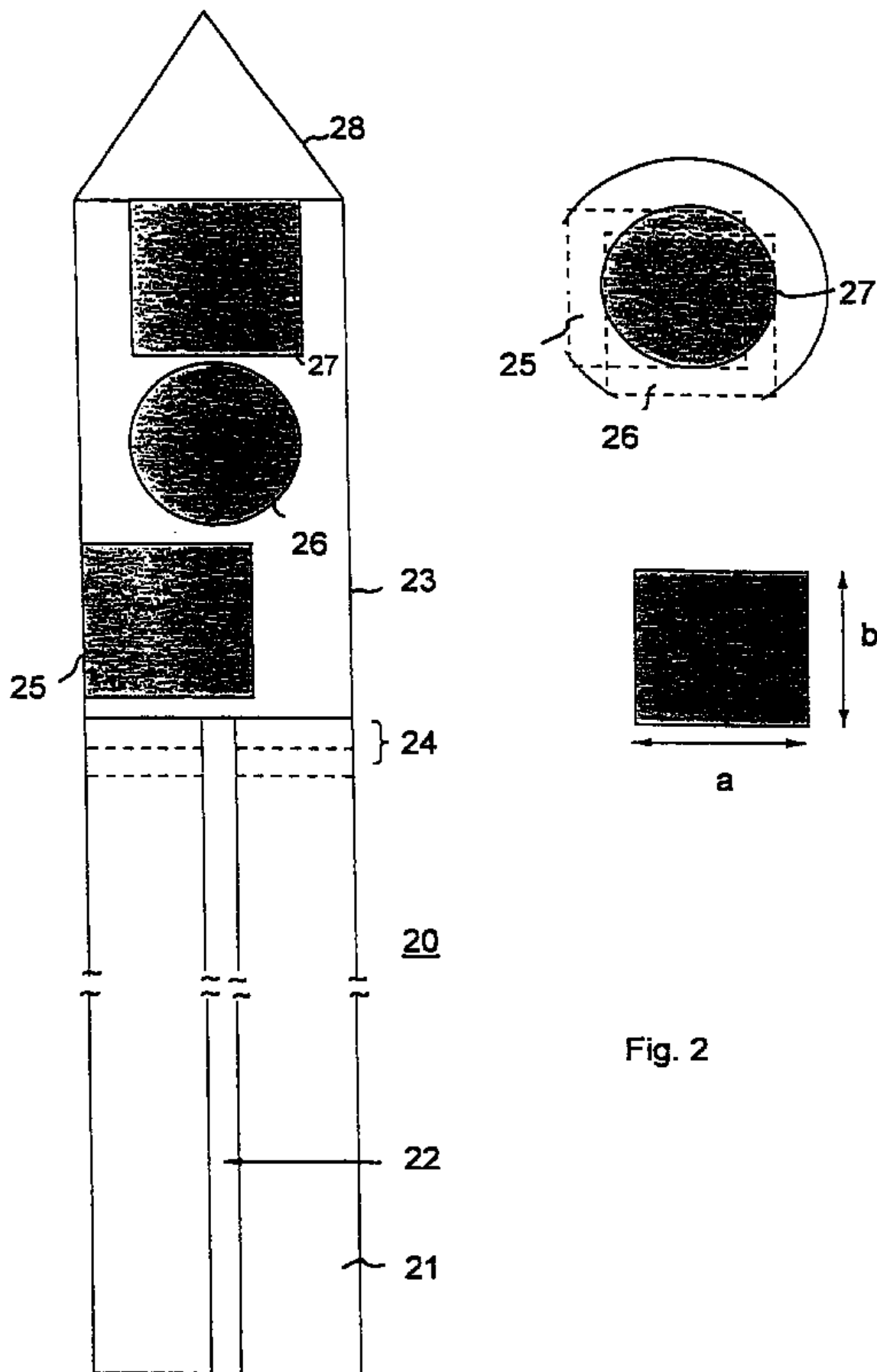
PANDROL GREAT BRITAIN A BRITISH

Family 45/100 - FAMPAT - ©Questel

Title

(EP1001134)

Anchoring device with a seismic sensor**Images**



Publication data including kind & date

JP4344440	B2	2009-07-17	JP4344440
AT276429	T	2004-10-15	ATE276429
EP1001134	B1	2004-09-15	EP1001134
DE19852455	C2	2003-12-24	DE19852455



[DE19852455](#)

A1 2000-05-31 DE19852455

[JP2000147130](#)

A 2000-05-26 JP2000147130

[EP1001134](#)

A1 2000-05-17 EP1001134

**Abstract**

(EP1001134)

The arrangement has an **anchoring rod** (21) and an **anchoring** head with at least one vibration sensor mounted on the **anchoring rod**. Several vibration sensors (25-27) can be mounted at different relative positions in relation to the longitudinal axis of the **anchoring rod**. The sensors can be mounted in a fitting on the end of the **rod** remote from the **anchoring** head with a cable guide (22) from the sensors to the head. Independent claims are also included for a system **anchoring** arrangement for tunnel construction and for a method of high resolution seismic tomography.

Inventors

BORM GUENTER

SCHMIDT-HATTENBERGER CORNELIA

GIESE RUEDIGER

BRIBACH JENS

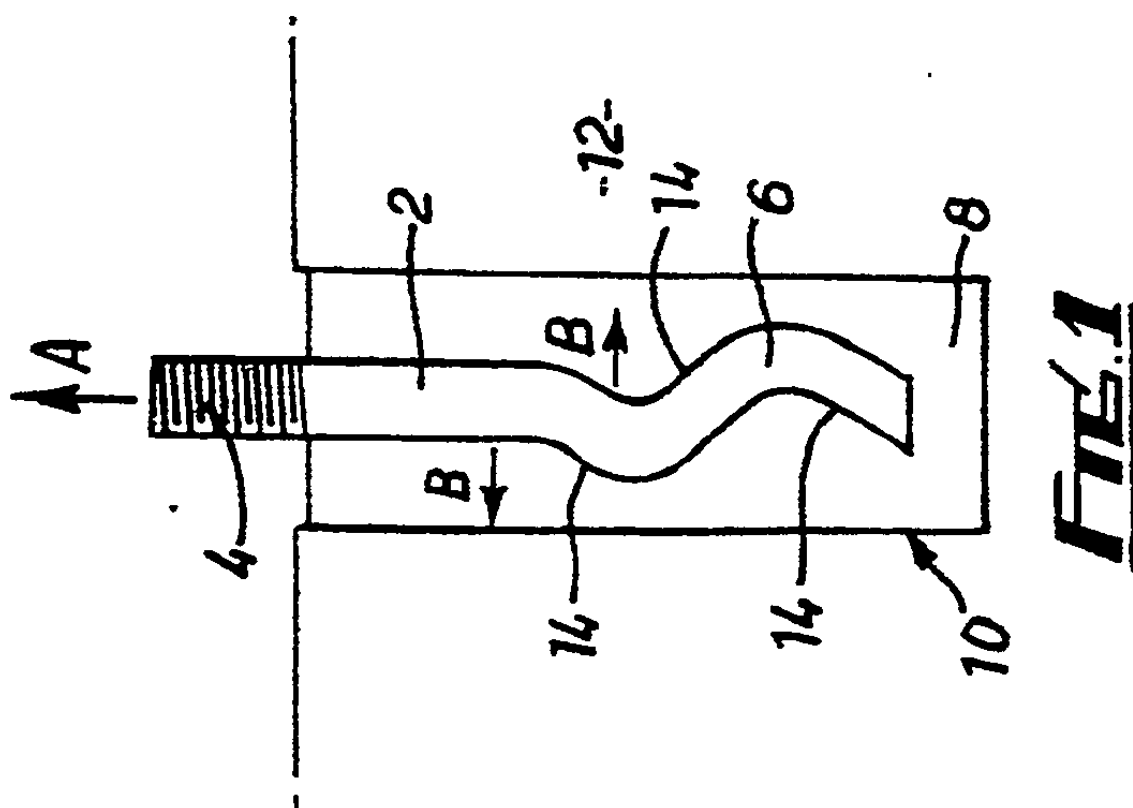
Latest standardized assignees - inventors removed

GEOFORSCHUNGSZENTRUM POTSDAM

Family 46/100 - FAMPAT - ©Questel

Title

(EP-453266)

An **anchoring** system.**Images****Publication data including kind & date**[EP0453266](#)

A1 1991-10-23 EP-453266

[GB9008573](#)

D0 1990-06-13 GB9008573

**Abstract**

(EP0453266)

An **anchoring** system comprising a **tie rod** (2) embedded in a hole (10) is described. The hole (10) contains a hardenable material (8) and the **tie rod** (2) has disposed around it an element (20) which presents an angled face with respect to the central axis of the **tie rod** (2). The arrangement is such that application of an axial withdrawal force to the **tie rod** (2) results in a proportion of the force being transferred laterally through the element (20) and the hardenable material (8) to the wall of the hole (10) when the hardenable material has cured.

Inventors

WALLACE THOMAS CAMPBELL

Latest standardized assignees - inventors removed

RAWLPLUG

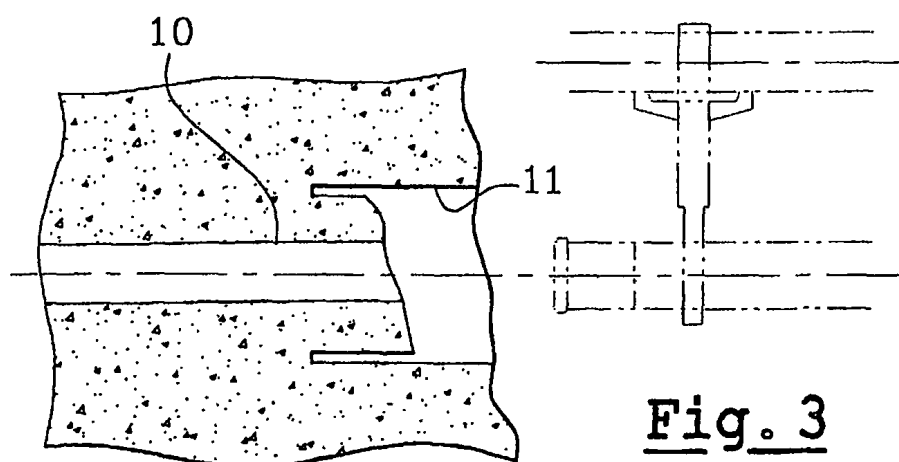
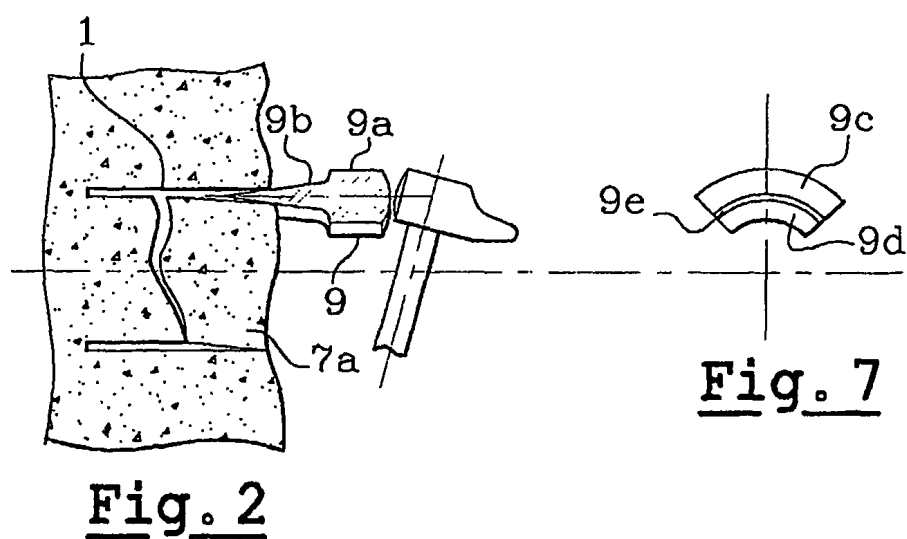
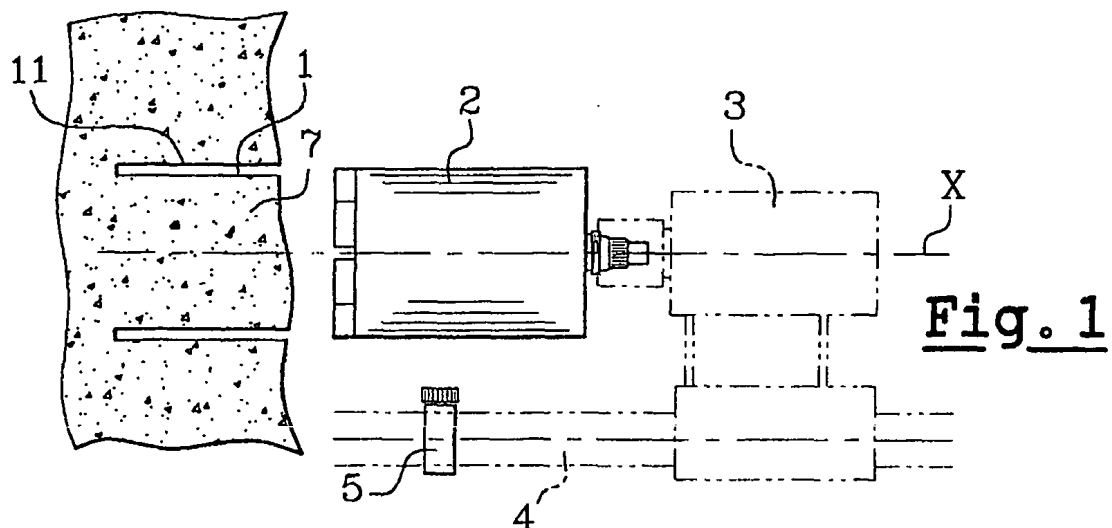
Family 47/100 - FAMPAT - ©Questel

Title

(EP1267016)

Method for setting a tendon

Images



Publication data including kind & date

ES2341705

T3 2010-06-25

ES2341705

DE60235857

D1 2010-05-20

DE60235857

EP1267016

B1 2010-04-07

EP1267016



FR2826034	B1	2004-04-02	FR2826034
EP1267016	A3	2003-02-05	EP1267016
FR2826034	A1	2002-12-20	FR2826034
EP1267016	A2	2002-12-18	EP1267016

**Abstract**

(EP1267016)

The procedure for inserting a **tie rod** to consolidate a building or rock face consists of cutting an annular groove (1) the surface material with a cylindrical cutter, removing at least the outer portion of the core (7) made by the groove, and drilling a hole for the **tie** bolt in the end wall of the hole (11) left by the core. Once the **tie rod** has been fitted the front portion of the core is replaced in the hole and the groove filled with a sealant made from a resin and powder of the original material to restore its appearance.

Inventors

BOUDOUL ROBERT

CERNESSON PATRICK

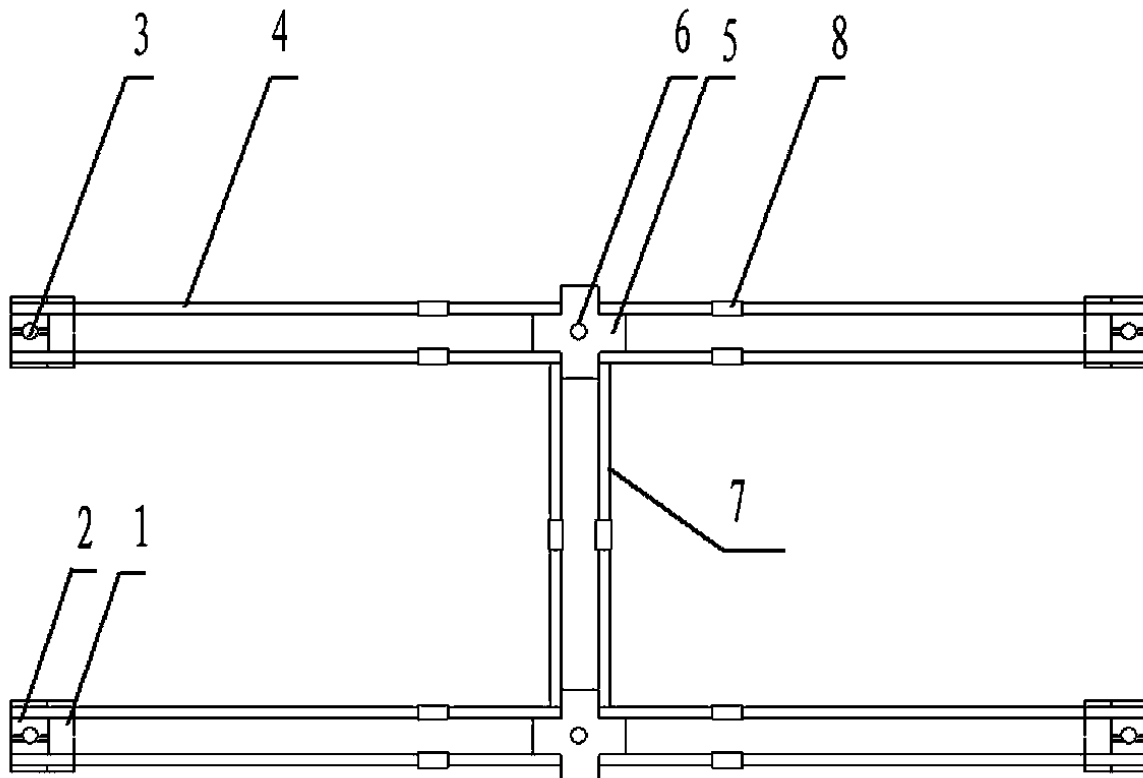
Latest standardized assignees - inventors removed

ENTPR DEGAINE

Family 48/100 - FAMPAT - ©Questel

Title

(CN103572669B)

Ballast bed and tunnel bottom defect regulating and constructing method as well as **anchoring** device**Images****Publication data including kind & date**

CN103572669	B	2015-04-22	CN103572669B
CN103572669	A	2014-02-12	CN103572669

**Abstract**

(CN103572669)

The invention discloses a ballast bed and tunnel bottom defect regulating and constructing method as well as an **anchoring**

device. The **anchoring** device comprises anchor **rod** and ballast bed slab **anchoring** ends and ballast bed slab middle **anchoring** ends, wherein each anchor **rod** and ballast bed slab **anchoring** end comprises a combination end, an anchor **rod** I and deformed steel bars I, the combination end is welded by two pieces of anchor **rod** clamp-fixing angle steel and a piece of ballast bed slab clamp-fixing angle steel, the two pieces of anchor **rod** clamp-fixing angle steel are welded on the same surface of the ballast bed slab clamp-fixing angle steel, and an interval allowing the anchor **rod** I to pass is reserved between the two pieces of angle steel, and the deformed steel bars I are welded on two sides of the combination end respectively; and each ballast bed slab middle **anchoring** end comprises a bearing plate, an anchor **rod** II and deformed steel bars II, the bearing plate adopts a crossed steel plate provided with a hole which is formed in the middle and allows the anchor **rod** II to pass, and the deformed steel bars II are welded on two sides of the bearing plate respectively. According to the ballast bed and tunnel bottom defect regulating and constructing method as well as the **anchoring** device, the structure is simple, the processing is easy, the problems of baseplate reinforcement and controlling and blocking of opening and closing cracks between the ballast bed slab and the baseplate can be solved effectively, and the purpose of quick, effective and comprehensive regulation of the ballast bed slab and tunnel bottom defects is achieved.

Inventors

ZHENG BAOCAL

ZHANG JUNBING

YU SHANYI

HU GUOWEI

XIN ZHENSHENG

SUVALATU

SUN BOLE

Latest standardized assignees - inventors removed

CHINA RAILWAY NO 3 ENGINEERING

Family 49/100 - FAMPAT - ©Questel

Title

(FR1459427)

Method of **anchoring tie** rods in the ground, **tie rod** for the application of this method, and construction anchored by this method

Publication data including kind & date[FR1459427](#) A 1966-04-29 FR1459427**Latest standardized assignees - inventors removed**

SANDVIKENS JERNVERKS

ATLAS COPCO

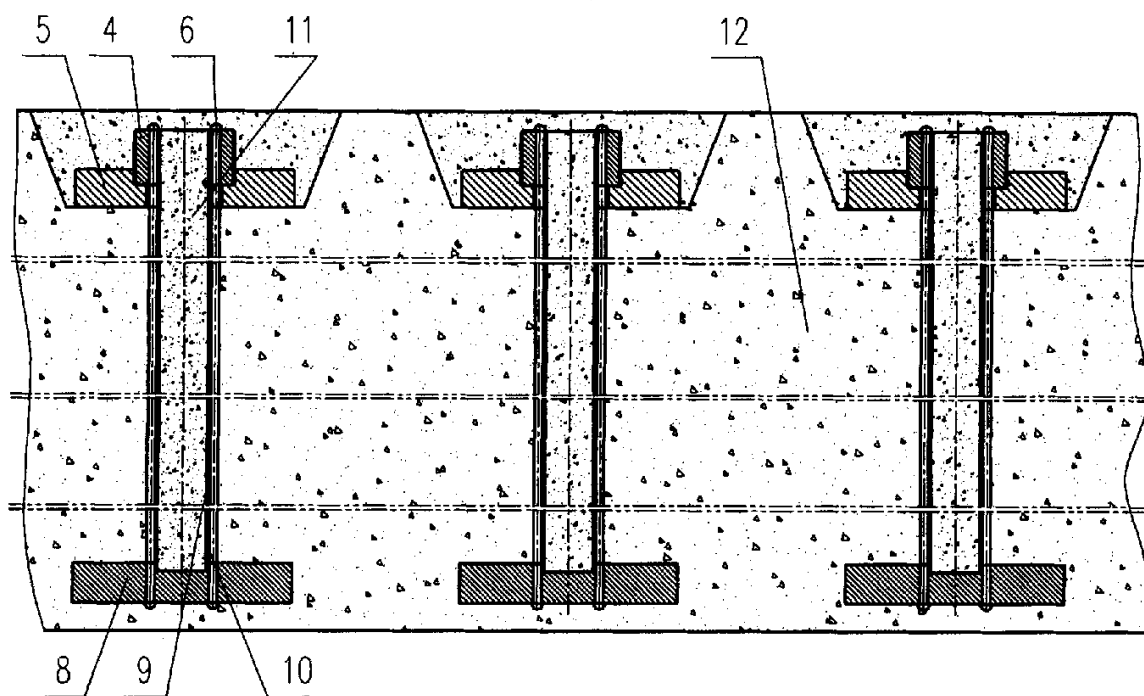
Family 50/100 - FAMPAT - ©Questel

Title

(CN100396868C)

Prestressed **anchoring** system by high tensile steel wire pretension and construction method thereof

Images



Publication data including kind & date

CN100396868	C	2008-06-25	CN100396868C
CN1699709	A	2005-11-23	CN1699709



Abstract

(CN1699709)

The invention discloses a kind of pre-tensioned pre-stressing force system for **anchoring** the high-tensile steel wire and its method for construction. The **anchoring** system includes n **anchoring** elements; each **anchoring** element comprises fixed **anchoring** plates, tension-**anchoring** plates; upsetting screw nuts and bundles of steel wire with pre-stressing in toroid form. The bundles of steel wire with pre-stressing force, are constructed with the various steel wire of the fix-length high-tensile steel wire bundles, which are closely fastened by the toroid devices; the ends of these steel wire are anchored to the fixed anchor plate through upsetting method, the other ends are anchored to the screw bolts. Through the upsetting screw bolts and the tension end-anchored plates adjacent to the casing pipes placed in the toroid high-tensile steel wire bundles, m strengthened toroid put in the toroid shape steel wire bundles and the casing pipes; grout mortar in the casing pipes; the said construction method includes manufacture, placement of components of single high-tensile steel wire pre-tensioned pre-stressing **anchoring** system, grout **cement**, mobile vaulting pole, the sealing-off processes, etc. The loss of pre-tension force of the **anchoring** system is less, the deviation of uncertainty is small; the cohesion with the **cement** mortar is good; the structural components are safe; its construction method is compact, convenient and it improves the property of the construction of structural components.

Inventors

LI GUOPING
XIE ZHENGYUAN
JIANG YEDONG

Latest standardized assignees - inventors removed

OVM
TONGJI UNIVERSITY

Family 51/100 - FAMPAT - ©Questel

Title

(EP-448952)

Compound **anchoring** element.

Images

EP0448952	A3	1992-11-25	EP-448952
JP04219508	A	1992-08-10	JP04219508
AU623308	B2	1992-05-07	AU-623308
US5104266	A	1992-04-14	US5104266
IE910993	A1	1991-10-09	IE9100993
AU7288891	A	1991-10-03	AU9172888
EP0448952	A2	1991-10-02	EP-448952
CA2039356	A1	1991-09-30	CA2039356
DE4010051	C1	1991-08-08	DE4010051



Abstract

(EP0448952)

A compound **anchoring** element for insertion into a drilled hole (8) in an attachment base (7) consists of an **anchoring rod** (10) having a plurality of expanding cones (13) and is surrounded in the insertion region with a screen sleeve (20) of wire mesh which cleans the drilled hole and mixes the mortar compound (9) when the compound **anchoring** element is screwed in.

Inventors

DARYOUSH ANISI

RINKLAKE MANFRED

FRISCHMANN ALBERT

Latest standardized assignees - inventors removed

UPAT

Family 52/100 - FAMPAT - ©Questel

Title

(DE3116619)

Tie rod, in particular a permanently prestressed **rod**

Images

Anmeldetag:

27. April 1981

Offenlegungstag:

11. November 1981

Fig. 1

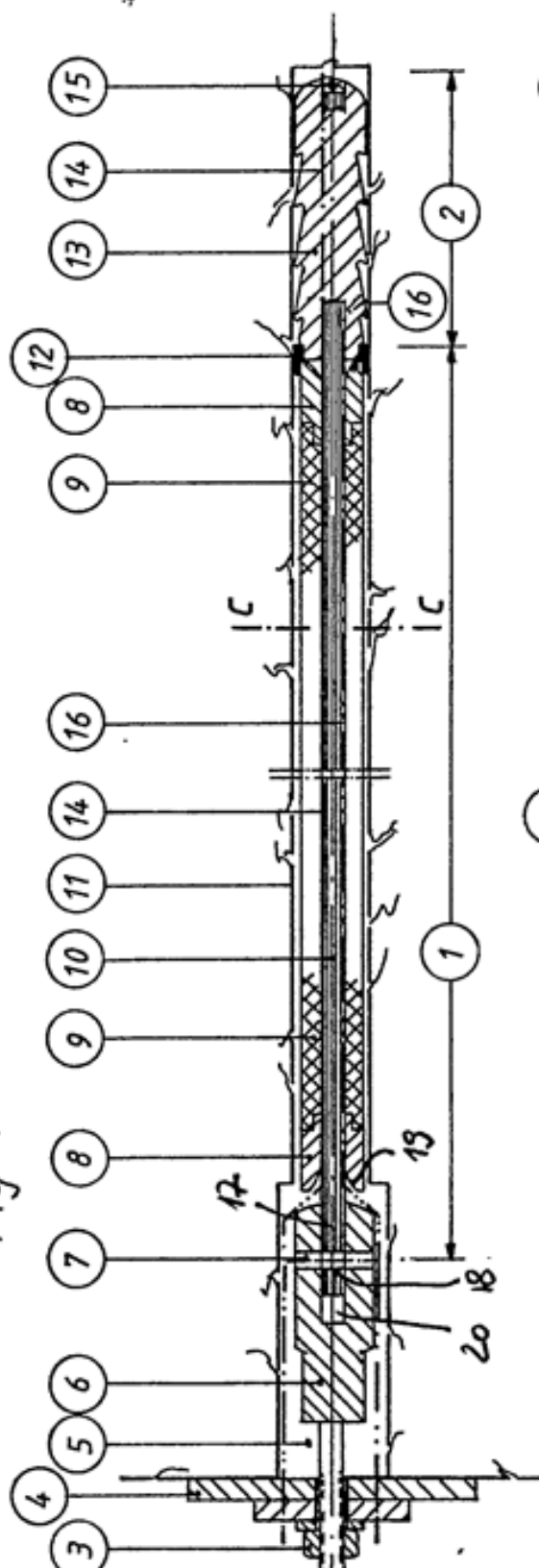


Fig. 3

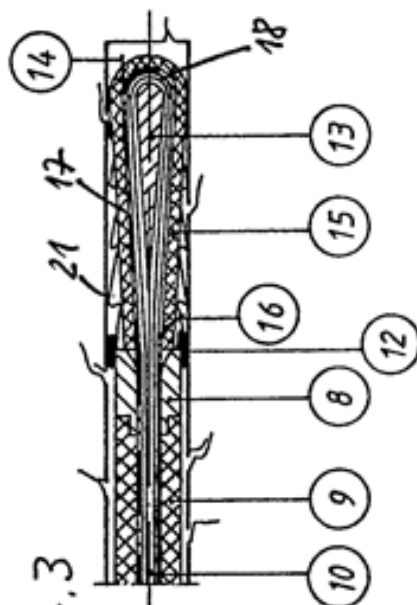
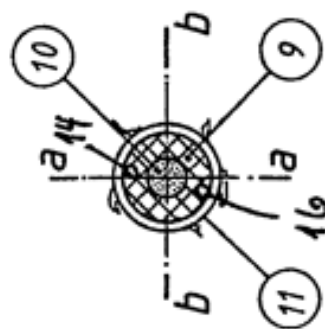


Fig. 2



3116619

Publication data including kind & date

DE3116619 C2 1983-07-28 DE3116619
 DE3116619 A1 1982-11-11 DE3116619

**Abstract**

(DE3116619)

In order to provide a **tie rod** with a corrosion-resistant and anti-shear **tie** member, a carbon fibre is passed many times around the clamping head (6) and the **anchoring** member (19) and is connected to their ends. The carbon-fibre strand (10) thereby formed between clamping head (6) and **anchoring** member (19) is enclosed by a plastic-foam envelope (9) which allows the carbon-fibre strand (10) to move freely in it in the longitudinal direction.

Inventors

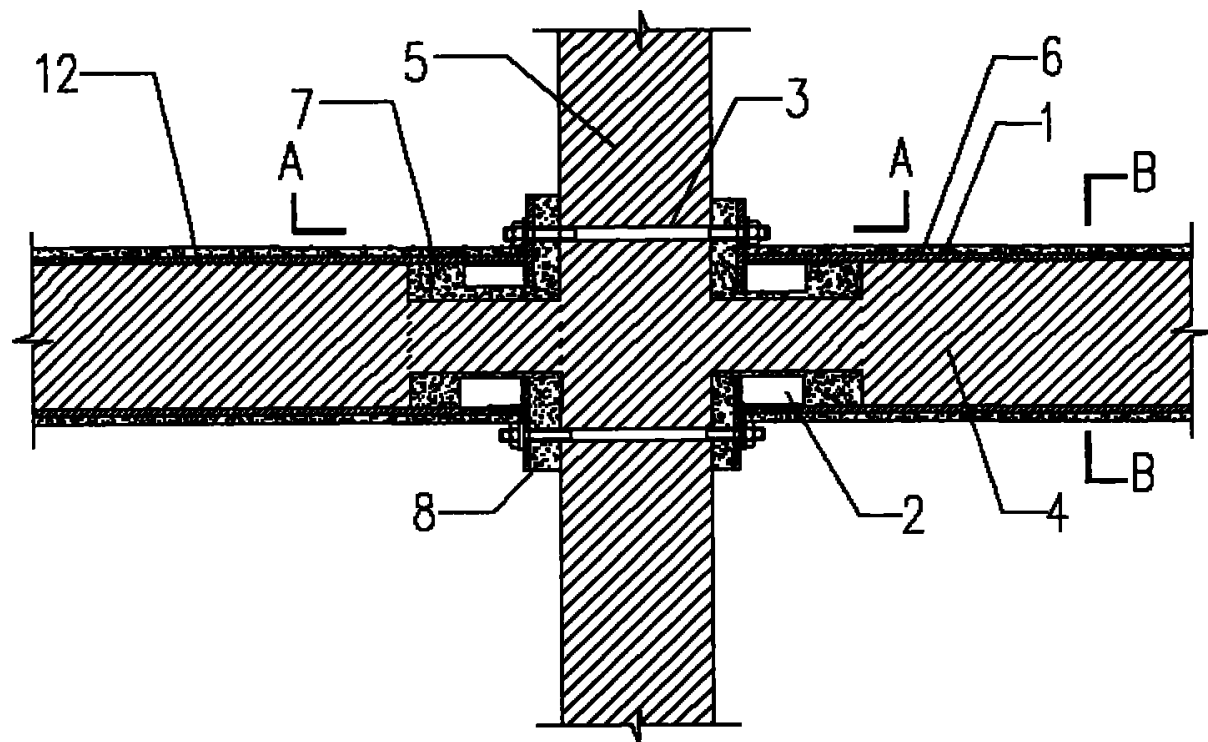
COMPERNASS, JOSEF, 6943 BIRKENAU, DE

Family 53/100 - FAMPAT - ©Questel

Title

(CN202866314U)

Cross wall adding steel flat **tie rod** to reinforce masonry structure system

Images**Publication data including kind & date**

CN202866314 U 2013-04-10 CN202866314U

**Abstract**

(CN202866314)

The utility model relates to a cross wall adding a steel flat **tie rod** to reinforce a masonry structure system, and belongs to the field of seismic strengthening. The flat **tie rod** is horizontally arranged on a cross wall upper floor slab or on the lower portion of a roof boarding, close to a wall space. Steel flat supports are respectively arranged at the two ends of the steel flat **tie rod**, and the two steel flat supports are respectively arranged in grooves at the two ends of the cross wall and are symmetrically tied through a draw-in bolt. The structure system and method utilize the steel flat **tie rod** to replace a steel **tie rod** of a traditional binding-type strengthening method. The steel flat is laid close to a wall. Antirust mortar is adopted to protect. Defect that the steel **tie rod** is rusted easily is overcome. The steel flat is prestressed to be stretched especially. Cooperative work of the steel flat **tie rod** and a wall body is ensured, the phenomenon of stress hysteresis is reduced. The steel flat **tie rod** has stronger tensioning force than the steel **tie rod**, and the effect of seismic strengthening is more remarkable.

Inventors

DONG YOU

ZHAO ENPING

JU XIANG

JU SHUSEN

Latest standardized assignees - inventors removed

BEIJING ZHUFU CONSTRUCTION ENGINEERING

Family 54/100 - FAMPAT - ©Questel

Title

(FR1443392)

Method and device for the **anchoring tie** rods in unstable ground and **tie** rods thus produced**Publication data including kind & date**[FR1443392](#) A 1966-06-24 FR1443392[BE669020](#) A 1966-02-28 BE-669020**Inventors**

DUPEUBLE PAUL

SEGUY PIERRE

Latest standardized assignees - inventors removed

SONDAGES INJECTIONS FORAGES SO

Family 55/100 - FAMPAT - ©Questel

Title

(CN103912027)

Site **anchoring** test manufacturing, installing and automatic data collection method**Images****Publication data including kind & date**[CN103912027](#) B 2015-10-21 CN103912027B[CN103912027](#) A 2014-07-09 CN103912027**Abstract**

(CN103912027)

The invention discloses a site **anchoring** test manufacturing, installing and automatic data collection method. The method includes the steps of A, machining anchor rods: (1) polishing a cut groove and adopting the longitudinal-bar-free deformed steel bar anchor rods, (2) pasting a strain gage in the center of the groove, and (3) conducting strain gage and wire protection, filling the groove with silicone rubber to enable the silicone rubber to be flush with reinforcing steel bar crescents, and binding the groove with thin copper sheets; B, conducting anchor **rod** site installation: conducting installation from the top to the two sides, installing the upper portions of the anchor rods on the two sides firstly, then installing the lower portions of the anchor rods on the two sides, punching anchor **rod** holes, and fastening nuts after installation; C, conducting **anchoring** data automatic collection: adopting an intelligent data collector, leading data lines of the anchor rods into the data collector, receiving automatically-collected data, storing the data in a U disc memorizer, and enabling the data to be used for data processing and analyzing work. The site **anchoring** test manufacturing, installing and automatic data collection method is practical and easy and convenient to operate, site **anchoring** tests can be carried out according to the primary rock stress state, strain data of the anchor rods can be automatically collected and stored through a data collection

instrument DT80, and the site **anchoring** test manufacturing, installing and automatic data collection method is safe and reliable.

Inventors

WU GUOJUN

YANG DIANSEN

CHEN WEIZHONG

ZHENG PENGQIANG

Latest standardized assignees - inventors removed

INSTITUTE OF ROCK & SOIL MECHANICS CHINESE ACADEMY OF SCIENCES

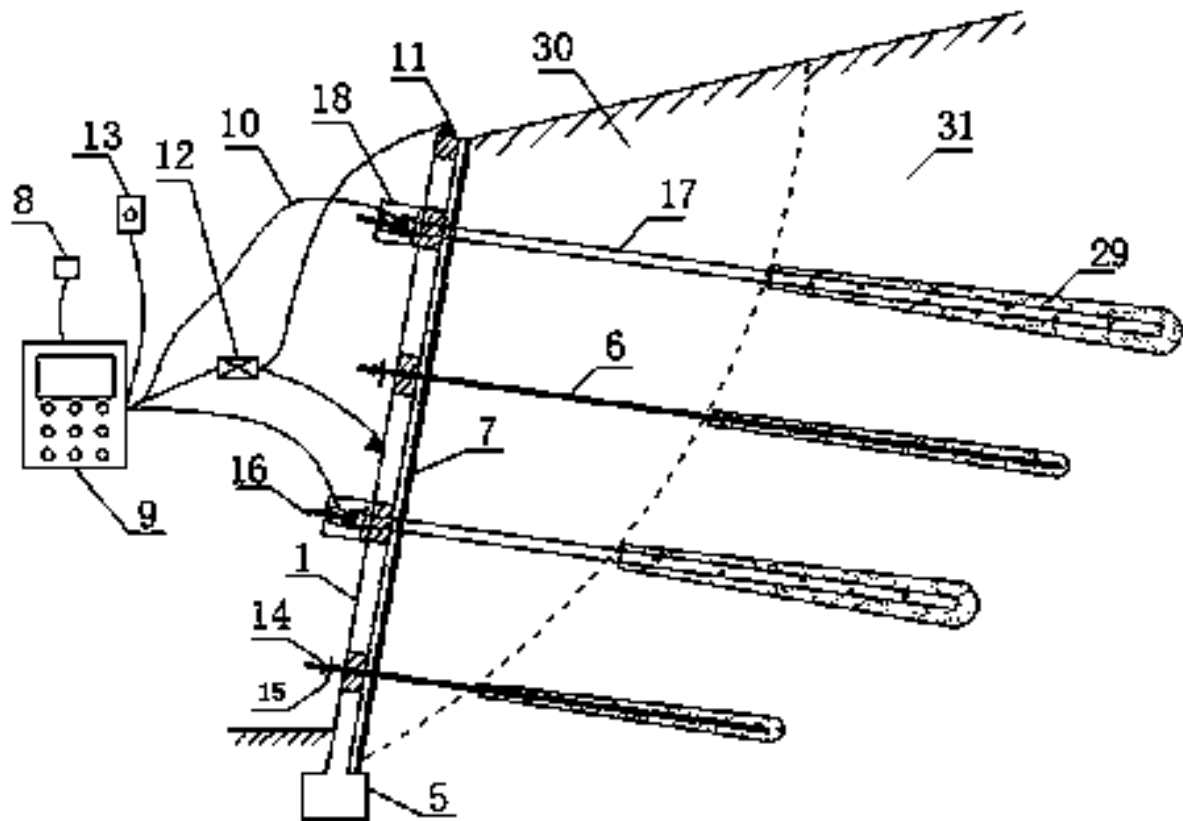
Family 56/100 - FAMPAT - ©Questel

Title

(CN103850254B)

Side slope **anchoring** structure with early warning energy consumption and damping control system and construction method

Images



Publication data including kind & date

CN103850254	B	2015-07-08	CN103850254B
CN103850254	A	2014-06-11	CN103850254



Abstract

(CN103850254)

The invention discloses a side slope **anchoring** structure with an early warning energy consumption and damping control system and a construction method, belonging to the field of rock and soil anchorage disaster prevention and reduction. A framework 1 is anchored with an anchor **rod** 6 and a control anchor tube 16 through an anchorage device 14; a displacement sensor 11 on the framework 1 and an electro-hydraulic servo valve 25 of the control anchor tube 16 are connected with a single-chip microcomputer 9 through a communication line, thereby forming a damping control **anchoring** structure. The side slope **anchoring** structure is characterized in that an early warning program is installed in the single-chip microcomputer 9 and is connected with an alarm 13; a shock isolation layer 7 is formed between the framework 1 and an

(US4386876)

The invention relates in particular to a device for producing **tie-rods** anchored in the ground, which comprises a tubular protective element comprising a top part and a base part and provided on its base part with at least one injection aperture, and at least one element constituting a **tie-rod** situated inside the tubular element, wherein the part of the element constituting the **tie-rod** extending along the top part of the tubular element is surrounded by a protective casing, with lubricant inserted between the element constituting the **tie-rod** and the casing.

Inventors

DUPEUBLE PAUL

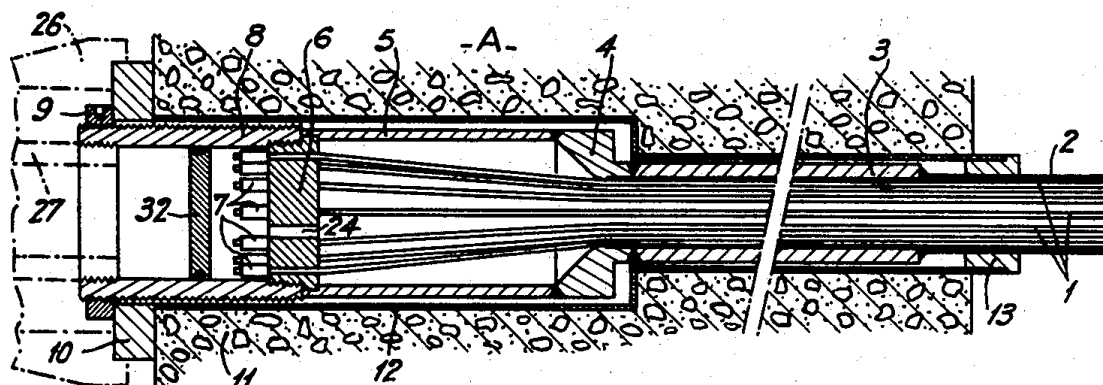
Latest standardized assignees - inventors removed

SIF ENTREPRISE BACHY

Family 58/100 - FAMPAT - ©Questel

Title

(US3967421)

Tie formed of stressed high-tensile steel tendons**Images****Publication data including kind & date**

DE2530420	C3	1986-05-07	DE2530420
JP1134142	C	1983-02-14	JP1134142
JPS5721605	B2	1982-05-08	JP82021605
DE2530420	B2	1981-03-19	DE2530420
FR2277953	B1	1978-01-20	FR2277953
US3967421	A	1976-07-06	US3967421
JPS5136717	A	1976-03-27	JP51036717
FR2277953	A1	1976-02-06	FR2277953
DE2530420	A1	1976-01-29	DE2530420

**Abstract**

(US3967421)

A **tie** for connecting together parts of a structure, for example a stay for suspending the deck of a bridge from a tower, is constructed so that its length can be adjusted in a simple manner with the **tie** in service. The **tie** is made up from several stressed steel tendons, enclosed in a protective sheath filled with hardened material. At its ends the sheath incorporates **anchoring** devices for the transfer of the pull from the **tie** to the structure. The sheath forms a conduit whose ends are fixed securely to the **anchoring** devices. The conduit is isolated, throughout its length, from the structure so as to be capable of sliding longitudinally with respect thereto. At least one of the **anchoring** devices includes connection means for the active part of a tensioning apparatus and also includes means for bearing against the structure. This bearing means is adjustable on the **anchoring** device in the longitudinal direction of the **tie**.

Inventors

DUFOSSEZ MARCEL EMILE

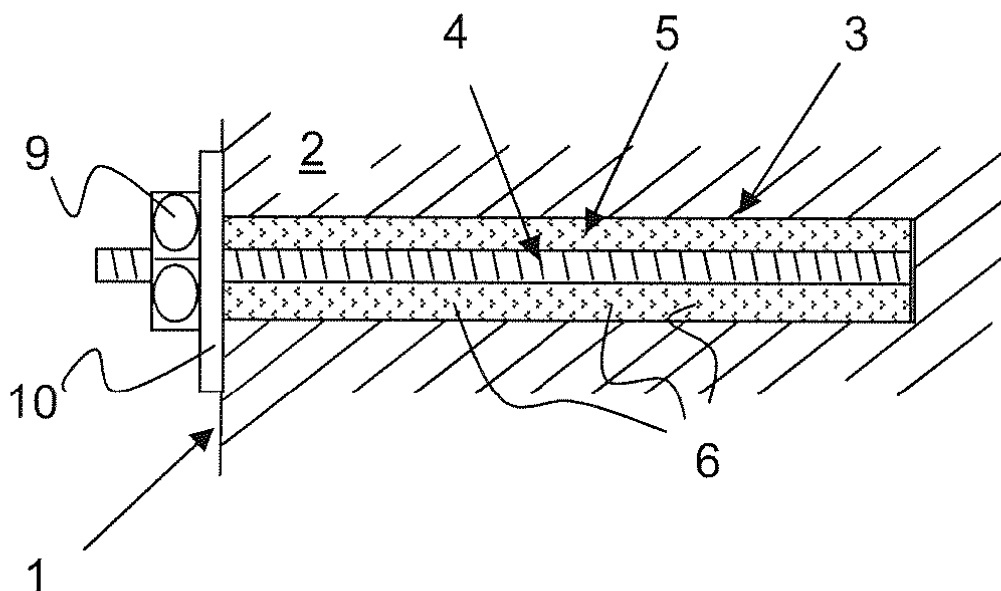
Latest standardized assignees - inventors removed

FREYSSINET

Family 59/100 - FAMPAT - ©Questel

Title

(EP2885439)

Anchoring system for a support in construction, and method for using same**Images****Publication data including kind & date**

US9476195	B2	2016-10-25	US9476195
CH706824	B1	2016-10-14	CH-706824
US20150218797	A1	2015-08-06	US20150218797
EP2885439	A1	2015-06-24	EP2885439
CA2882097	A1	2014-02-20	CA2882097
WO2014/026299	A1	2014-02-20	WO201426299
CH706824	A2	2014-02-14	CH-706824

**Abstract**

(EP2885439)

The **anchoring** system is suitable for rock and concrete (2) and any solid support. The anchor **rod** (4), which is made, for example, of a threaded **rod** made of a shape memory alloy (SMA), is held in the anchor bore (3) by means of a filling compound (5) as the **anchoring** medium. In order to fill the anchor bore (3) between the anchor **rod** (4) and the wall of the anchor bore (3), a heat-resistant filling compound (5) is used which consists of a two-component polymer compound or of polymer compound on a cementitious basis. The anchor **rod** (4) is then heated to its austenite phase by applying heat externally via its stub that protrudes from the filling compound, thus pre-stressing the anchor **rod** (4). The anchor **rod** (4) is subsequently cooled to the external temperature after the filling compound has cooled (5). An abutment plate (10) lies on the external wall (1) around the opening of the anchor bore (3), and is clamped with the anchor **rod** (4).

Inventors

SCHERER JOSEF

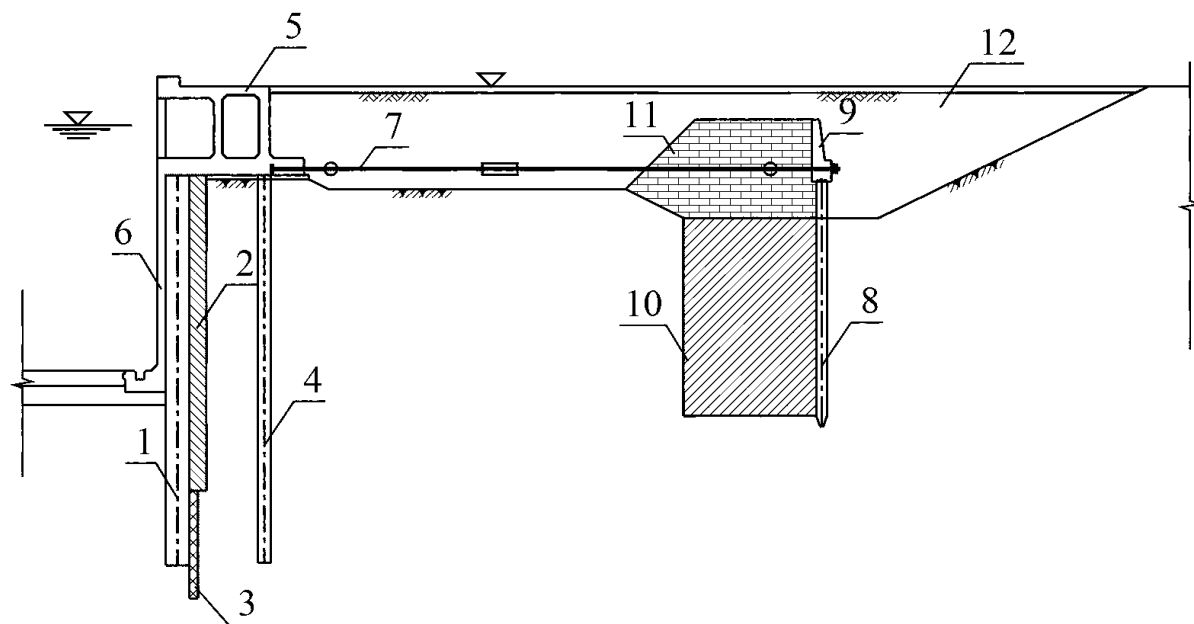
Latest standardized assignees - inventors removed

S & P CLEVER REINFORCEMENT

Family 60/100 - FAMPAT - ©Questel

Title

(CN202672093U)

Anchoring type dock wall structure of sheet-pile wall**Images****Publication data including kind & date**

CN202672093

U

2013-01-16

CN202672093U

**Abstract**

(CN202672093)

The utility model discloses an **anchoring** type dock wall structure of a sheet-pile wall, and belongs to an underground hydraulic structure in the technical field of port, shore and offshore engineering. The dock wall structure is composed of a retaining structure, a **tie rod** and an **anchoring** structure, and is characterized in that the top parts of a cast-in-situ bored pile front wall and a cast-in-situ bored pile bearing pile are rigidly connected with the bottom part of a gallery, the top of a jet grouting pile waterproof curtain is connected with the bottom of the gallery, an ejection water-plugging curtain is positioned below the jet grouping pile waterproof curtain with the lower bottom of the ejection water-plugging curtain lower than the bottom end of the cast-in-situ bored pile front wall, two ends of an anchor **tie** are respectively anchored with the bottom of a front gallery and a guide beam at the top of a rear **anchoring** sheet pile, a mixing pile reinforcing body and a dry building block rock body are positioned on the front sides of an **anchoring** sheet pile and the guide beam, and wall-back backfill is positioned on the back side of the gallery. According to the utility model, the cast-in-situ bored pile and the **anchoring** structure forms a whole stress system together, and a sealing waterproof system is formed through the waterproof curtain and a lined wall together, therefore, not only can the lateral deformation and the vertical settlement of the dock wall be efficiently controlled, but also the seepage of underground water can be efficiently prevented, and the engineering construction effect is well.

Inventors

DING YONGCHUN

GU KUANHAI

CHENG ZEKUN

LIU JIACAI

LI GUANGHUI

Latest standardized assignees - inventors removed

CCCC THIRD HARBOR CONSULTANTS

CA2280569

A1 2000-02-26 CA2280569

Abstract

(US6161339)

An arrangement for **anchoring** a roof of a building so that it can resist wind forces captures each roof truss, or other roof framing member, under a wire rope passed through a sequence of eyebolts protruding above a top plate of one of the walls of. Each of the eyes is the upper portion of one of a plurality of **rod** assemblies, each of which is connected to a respective one of a plurality of anchors disposed beneath the wall. A turnbuckle connecting each **rod** assembly to a respective eyebolt is used to draw the eyebolt down against the top plate and hence apply tension to the wire rope. A connecting nut at the bottom of each **rod** assembly attaches the **rod** assembly to a threaded upper end of an anchor set in the foundation of the building. Thus, tightening the turnbuckles firmly ties down the roof to the foundation.

Inventors

CORNETT SR ROBERT M

CORNETT JR ROBERT M

WOEHLK ALAN

CRUMPLER NORMAN

Latest standardized assignees - inventors removed

HURRI BOLT

Family 62/100 - FAMPAT - ©Questel

Title

(EP3336259)

Anchor for **anchoring** in the ground and/or rock with reversible tension member**Images**

Publication data including kind & date

EP3336259

A1 2018-06-20 EP3336259

**Abstract**

(EP3336259)

Anchor for **anchoring** in the ground and/or rocks includes rückbaubares **tie**, free erection in tubing (6) extends and an end (9) anchorage is secured, a release device for releasing the tension member of the end anchorage when removing and the tubing (6) arranged cage bars (7), which continually from the end (9) anchorage to its respective **rod** end are. The **rod** ends define the end (9) anchorage opposite end of the cage. The rods (7) are used as reinforcing a pressure tube (12), for introducing the **anchoring** force in the foundation (1) can be formed, whereby between the tubing (6) the tension (5) member and the borehole wall after displacement of the armature **cement** mortar is injectable.

Inventors

HALTER MARKUS

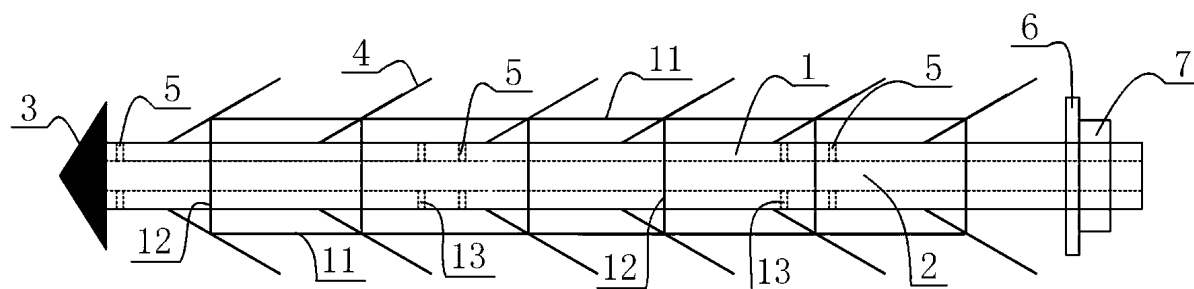
Latest standardized assignees - inventors removed

STAHLTON

Family 63/100 - FAMPAT - ©Questel

Title

(CN103615272)

Hollow anchor **rod** with rebar framework and construction method of hollow anchor **rod****Images****Publication data including kind & date**

CN103615272

A 2014-03-05 CN103615272

**Abstract**

(CN103615272)

The invention discloses a hollow anchor **rod** with a rebar framework. The hollow anchor **rod** comprises an **anchoring rod** and is characterized in that the inside of the **anchoring rod** is a grouting passage, a drill bit is arranged at the front end of the **anchoring rod**, multiple slurry outgoing holes and air return holes are formed in the **anchoring rod**, annular stirrups are fixed on thorny branches at a same section, multiple longitudinal rebars are arranged along the axial direction of the **anchoring rod**, and the thorny branches, the annular stirrups and the longitudinal rebars jointly form a rebar framework reinforcing the **anchoring rod**. The construction method includes: a), preparing equipment; b), measuring cloth holes; c), drilling holes; d), cleaning the holes and inspecting; e), beating in the anchor **rod**; f), mounting a slurry stop plug; g), screwing a nut; h), grouting. The rebar framework is formed on the periphery of the anchor **rod**, and the anchor **rod** can be fully and uniformly wrapped by injecting **cement** mortar, so that **anchoring** force is effectively increased, corrosion dangerousness is avoided, and the objective of long-term supporting can be achieved.

Inventors

LI JIN

ZHANG QI

GUO DEDONG

ZHAO ZHIZHONG

Latest standardized assignees - inventors removed

SHANDONG JIAOTONG UNIVERSITY

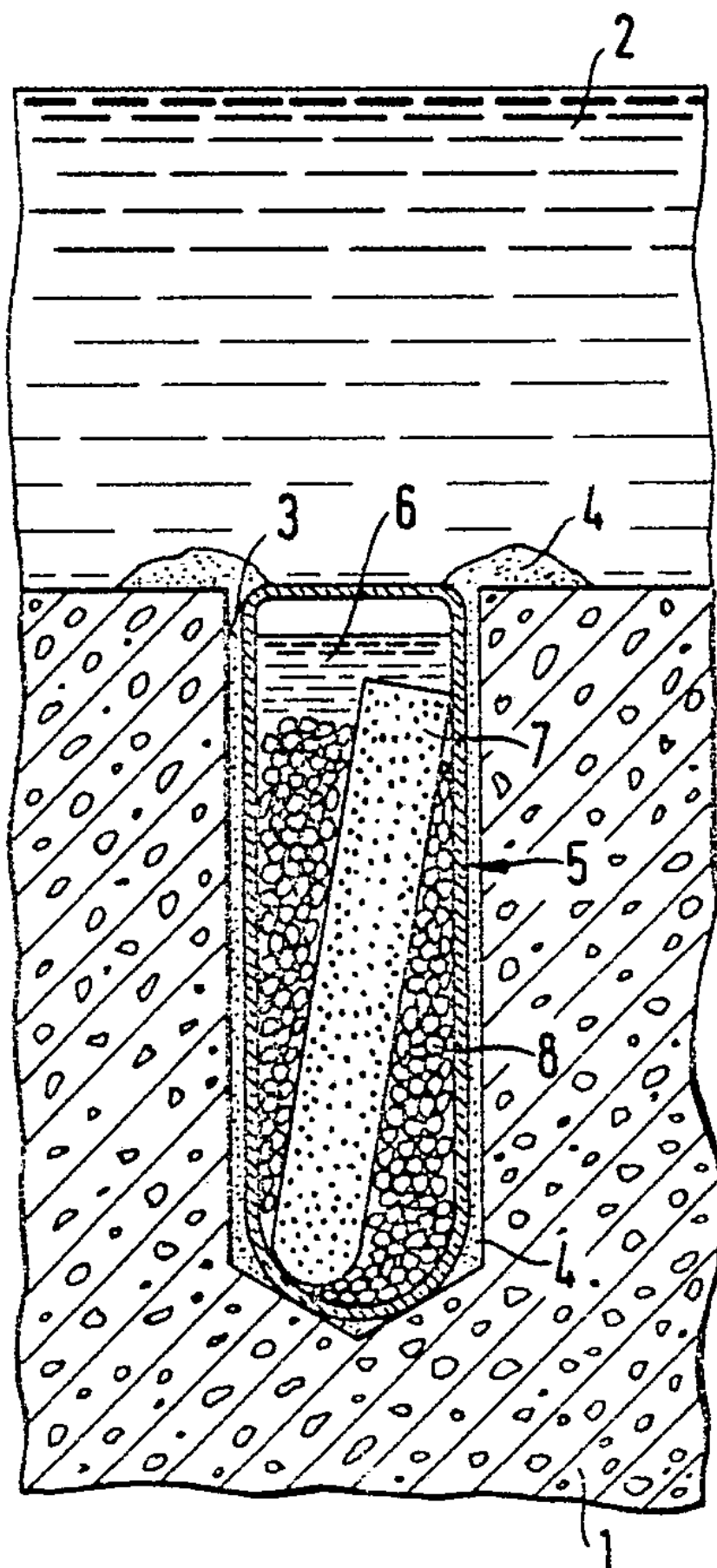
Family 64/100 - FAMPAT - ©Questel

Title

(EP-312776)

Process for fixing **anchoring** rods

Images

Fig. 2

Publication data including kind & date

KR960013591	B1	1996-10-09	KR960013591
JP2060959	C	1996-06-10	JP2060959
JP7100938	B2	1995-11-01	JP95100938
ES2026619	T3	1992-05-01	ES2026619
DE3865804	D1	1991-11-28	DE3865804
EP0312776	B1	1991-10-23	EP-312776
AU608906	B2	1991-04-18	AU-608906
US4907917	A	1990-03-13	US4907917
KR19890006932	A	1989-06-16	KR19890006932
DE3735592	A1	1989-05-11	DE3735592
JP01116111	A	1989-05-09	JP01116111
AU2405388	A	1989-04-27	AU8824053
EP0312776	A1	1989-04-26	EP-312776

**Abstract**

(EP0312776)

In the process for the attachment, without expansion pressure, of **anchoring** rods (9) in the underwater region, the holes (3) are partially filled in a first step, with a flowing, curable adhesive mass (4). Thereafter, a cartridge (5), which likewise contains a curable adhesive mass (11), is delivered to the holes (3). During delivery of the cartridge (5), the fluid (2) is forced out of the hole (3), the flowing adhesive mass (4) being introduced into the gap between the cartridge (5) and the wall of the hole (3). The subsequent driving in of an **anchoring rod** into the hole (3) leads to destruction of the cartridge (5), resulting in a reliable bond between the **anchoring rod** and the wall of the hole (3).

Inventors

LEIBHARD, ERICH

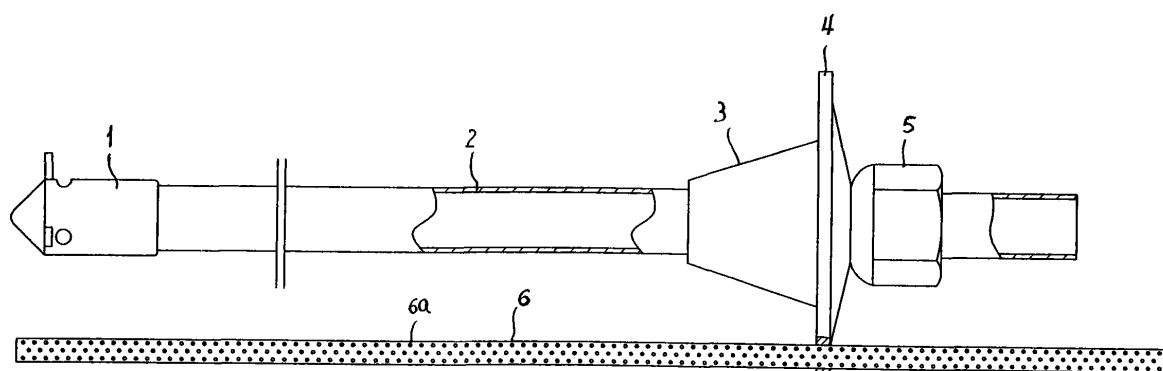
Latest standardized assignees - inventors removed

HILTI

Family 65/100 - FAMPAT - ©Questel

Title

(CN201137141U)

Hollow grouting **anchoring**-bolt capable of measuring length and discharging gas**Images****Publication data including kind & date**

CN201137141	Y	2008-10-22	CN201137141U
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**Abstract**

(CN201137141)

A hollow casting anchor **rod** capable of measuring length and exhausting comprises an anchor head, an anchor **rod** body and an exhaust pipe capable of measuring length, wherein the anchor head is connected with the anchor **rod** body, the

anchor **rod** body is equipped with a stop-grouting plug, a backing plate and a clamp nut, the exhaust pipe capable of measuring length is axially arranged along the anchor **rod** and positioned on the outer side of the anchor **rod** body, and is connected with the anchor **rod** body, the front end of the exhaust pipe capable of measuring length is flush with the anchor head, the rear end of the exhaust pipe capable of measuring length is opened and extends out from the anchor body, and the pipe wall of the exhaust pipe capable of measuring length is pervaded with vents capable of preventing **cement** mortar from coming. The hollow casting anchor **rod** is simple in structure and convenient in usage, not only can conveniently measure the true length of the anchor **rod** body to ensure **anchoring** construction quality after anchor **rod** construction, but exhaust air in an anchor hole in casting construction to be favorable for performance of casting construction.

Inventors

NIU JIANWEN

WU HANG

Latest standardized assignees - inventors removed

CHENGDU MODERN WANTONG ANCHOR TECHNOLOGY

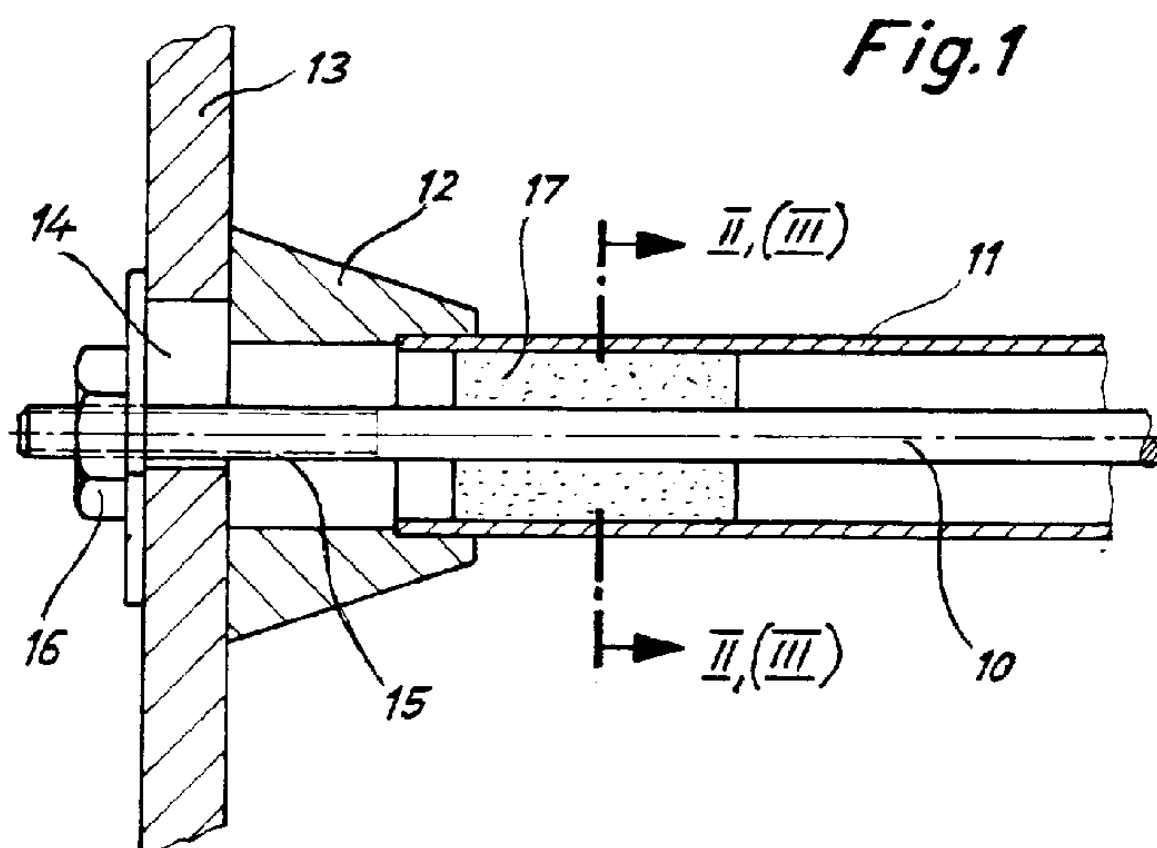
Family 66/100 - FAMPAT - ©Questel

Title

(DE3929849)

Anchoring device for concrete shuttering and formwork - has tubular sleeve, with conical spacer threaded bar and nut and washer

Images



Publication data including kind & date

DE3929849	C2	1996-06-13	DE3929849
DE8916208	U1	1995-01-12	DE8916208
DE3929849	A1	1991-03-21	DE3929849



Abstract

(DE3929849)

A tubular plastics sleeve (11) contains a monolithic extruded plastics insert (17) which has a jagged internal wall with sufficient clearance in the centre to allow the steel anchor **tie rod** (10) to pass through the insert (17) prevents the ingress of

cement grout during concreting operations into the tubular sleeve. The plastics sleeve (11) terminates inside a conical plastics distance piece (12) which terminates on the internal face of the formwork. The anchor **tie rod** (10) is externally threaded at each end and is long enough to pass through the back of the supporting formwork (13). A hexagonal nut (16) and plate washer is screwed onto the end of the anchor **tie rod** (10) and tightened thereby pulling the whole formwork arrangement together. After the concrete has cured sufficiently the plastics spacer piece (12) anchor **tie rod** (10) and hexagonal nut (16) are recovered ready for re-use. The small hole in the concrete can then be filled with minimum of effort. USE/ADVANTAGE - Formwork and mouldwork for concrete. Costly inserts and **tie** rods are retrievable and minimal amount of making good required around **tie** bar position.

Inventors

VERZICHT DES ERFINDERS AUF NENNUNG

Latest standardized assignees - inventors removed

PFLIEGER LIESELOTTE

Family 67/100 - FAMPAT - ©Questel

Title

(EP-314927)

Anchoring device for a tensioning member and method of **anchoring**.**Images**

Publication data including kind & date

DE3888088	D1	1994-04-07	DE3888088
AT102280	T	1994-03-15	ATE102280
EP0314927	B1	1994-03-02	EP-314927
CA1302724	C	1992-06-09	CA1302724
EP0314927	A3	1991-04-10	EP-314927
US4934118	A	1990-06-19	US4934118
JPH01163344	A	1989-06-27	JP01163344
DE3737393	A1	1989-05-18	DE3737393
EP0314927	A2	1989-05-10	EP-314927

**Abstract**

(EP0314927)

Fibre composite prestressing element, and method and device to tense and anchor such a prestressing element, in which the ends of the prestressing element are embedded using synthetic-resin mortar in a transversely corrugated **anchoring** or prestressing sleeve, which is deformed during the tensing and permits cracks caused by stretching the prestressing bars inside the sleeve, which cracks subdivide the **anchoring** member over part of its length into discs and consequently permit movement of the prestressing bars when subjected to vibratory stresses. After the tensing, the prestressing bars of the prestressing element can be anchored directly in sheath enlargements by means of **anchoring** mortar.

Inventors

MIESSELER HANS-JOACHIM DIPL-IN

Latest standardized assignees - inventors removed

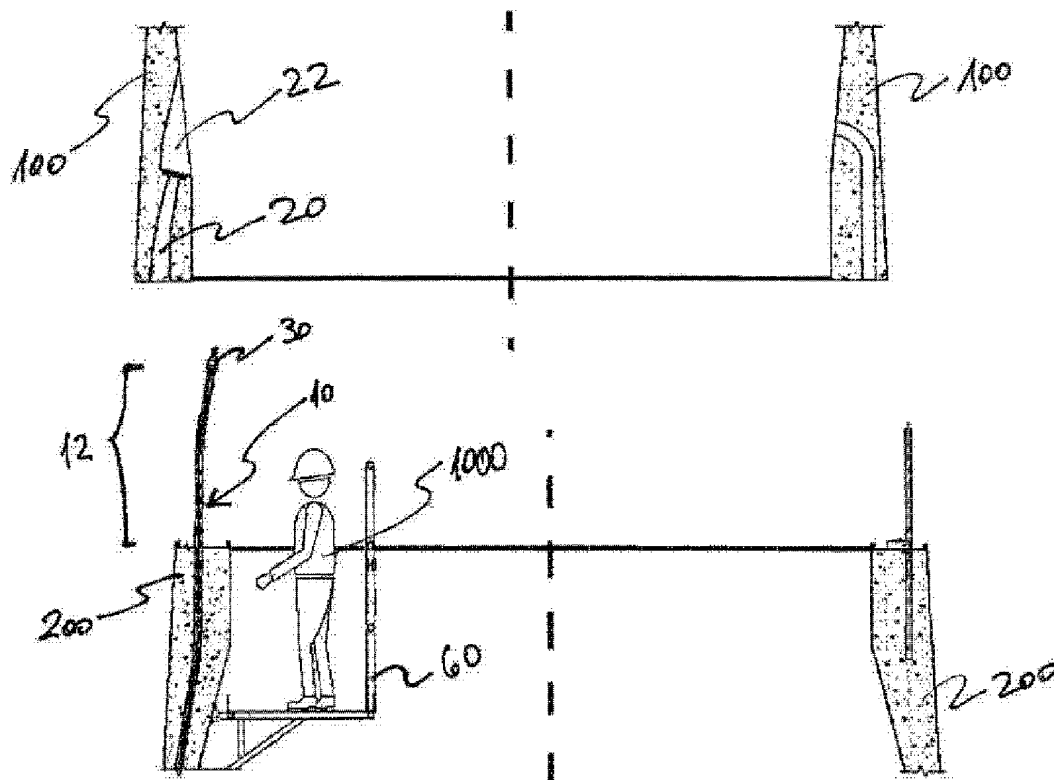
STRABAG BAU

Family 68/100 - FAMPAT - ©Questel

Title

(EP3118393)

Anchoring means using a cable for a horizontal joint, and **anchoring** method using a cable for a horizontal joint

Images

Publication data including kind & date

JP6538091	B2	2019-07-03	JP6538091				
AU2015226086	B2	2019-04-18	AU2015226086				
CN106232917	B	2019-03-12	CN106232917B				
EP3118393	A4	2018-02-07	EP3118393				
JP2017510741	A	2017-04-13	JP2017510741				
US20170067256	A1	2017-03-09	US20170067256				
EP3118393	A1	2017-01-18	EP3118393				
CL2016002239	A1	2016-12-23	CL2239201600				
CN106232917	A	2016-12-14	CN106232917				
MX2016011563	A	2016-11-29	MX2016011563				
AU2015226086	A1	2016-10-27	AU2015226086				
IN201627033037	A	2016-10-21	IN201627033037				
ES2547584	B1	2016-07-12	ES2547584				
BR102014011880	A2	2015-12-01	BR102014011880				
ES2547584	A1	2015-10-07	ES2547584				
UY36022	A	2015-09-30	UY--36022				
CA2941682	A1	2015-09-11	CA2941682				
WO2015/132436	A1	2015-09-11	WO2015132436				
BR102014011880	A1	2014-06-03	BR102014011880				

Abstract

(EP3118393)

Cable **anchoring** means for a horizontal joint between two elements, comprising: a cable partially embedded in an element, a receiving through duct provided in the other element to receive the protruding portion of said cable, traction means, fastening means and a threading device applicable on said protruding portion of said cable and comprising a part with a pointed and flexible geometry that extends coaxially with respect to said protruding portion from the free end of said protruding portion. a cable **anchoring** procedure for a horizontal joint between two elements, comprising: a) providing said elements; b) providing said **anchoring** means; c) bringing said elements close to one another and threading said cable into said duct; also comprising the step c): c.1) stopping the approximation when the distance between the elements is adequate; c.2) placing said flexible part inside said duct; c.3) resuming movement.

Inventors

GARCÍA ACÓN CARLOS

SERNA GARCÍA-CONDE JOSÉ

Latest standardized assignees - inventors removed

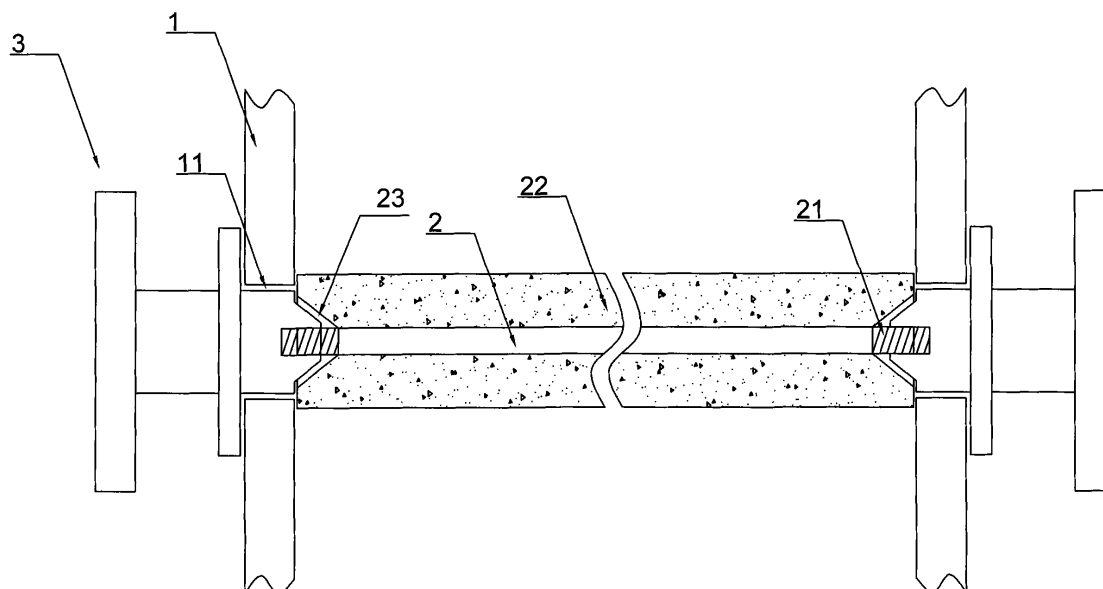
ESTEYCO

Family 69/100 - FAMPAT - ©Questel

Title

(CN202164822U)

Device for positioning and **anchoring** templates on beam, column and shear wall**Images**



Publication data including kind & date

CN202164822

U 2012-03-14 CN202164822U



Abstract

(CN202164822)

The utility model discloses a device for positioning and **anchoring** templates on a beam, a column and a shear wall. The device comprises a pull **rod** used for being connected with the templates, wherein screw heads with threads are arranged at the two end parts of the pull **rod**, and connected with fastening bolts via the threads; the templates are matched and fixed with the pull **rod** via the fastening bolts; holes for allowing the fastening bolts to be inserted are formed on the templates; concrete is wrapped and poured outside the pull **rod** to form a pull **rod cement** stick; counter bores are formed at the two ends of the **cement** stick; the screw heads at the two ends of the pull **rod** are positioned in the counter bores; the pull **rod cement** stick is circular or square; each of the fastening bolt comprises a screw **rod**, a thread hole for allowing the screw head at the end part of the pull **rod** to be screwed into and connected is formed at one end part of the screw **rod**, and a rotating handle is arranged at the other end part of the screw **rod**; and a bolt cap is further arranged in the middle of each fastening bolt. The device provided by the utility model is used for fixing the templates on the **cement** beam, the **cement** column and the **cement** shear wall in **cement** structure construction, can effectively prevent the templates from crippling during the concrete structure construction, and greatly reduces the stable support in the prior art when the templates are supported in the structure.

Inventors

JIANG CANGRU

XU JINHUA

LIN WEIHONG

LI WEI

LÜ GUOYU

JI ESU

Latest standardized assignees - inventors removed

BUSINESS COLLEGE HBUT

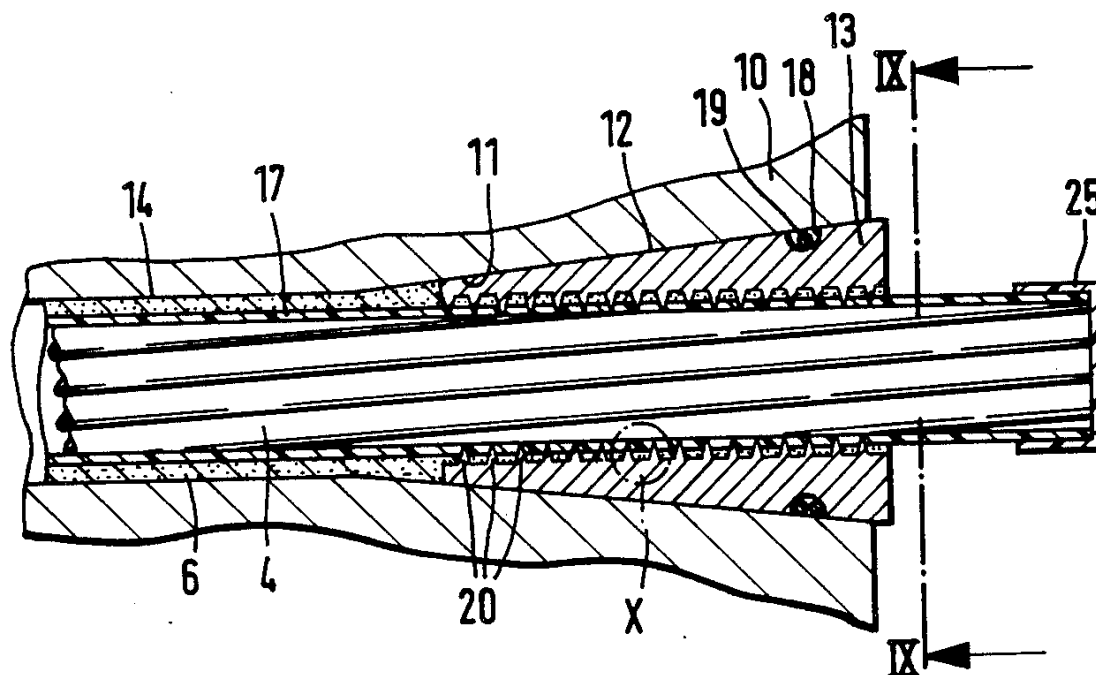
Family 70/100 - FAMPAT - ©Questel

Title

(US4633540)

Tension **tie** member

Images



Publication data including kind & date

JP1938471	C	1995-06-09	JP1938471
JP6063303	B2	1994-08-22	JP94063303
DE3437107	C2	1991-01-03	DE3437107
CA1240533	A	1988-08-16	CA1240533
AU569829	B2	1988-02-18	AU-569829
AU6505886	A	1987-06-11	AU8665058
US4633540	A	1987-01-06	US4633540
JPS6195145	A	1986-05-13	JP61095145
DE3437107	A1	1986-04-10	DE3437107



Abstract

(US4633540)

A **tie** member includes at least one tension element, such as a steel wire or strand, enclosed within a tubular sheathing. An **anchoring** unit is located at each end of the **tie** member for transmitting the tension force to a part of a structure. Each **anchoring** unit includes an anchor plate with at least one conically shaped bore so that a tension element can be secured in the borehole by a multi-part annular wedge. To provide additional corrosion protection and improve fatigue strength in the anchorage, the tension element is enclosed within a coating of a synthetic resin for its entire length. The inside surface of the wedge is shaped between the ends with a series of coarse or rough teeth with the tips rounded off. When the wedge grips a tension element the synthetic resin material is displaced by the teeth, however, the resin material continues to cover the surface of the tension element not contacted by the teeth so that oxygen is prevented from communicating with the areas where the wedge and tension element are in contact whereby friction corrosion cannot take place.

Inventors

JUNGWIRTH DIETER

THIELEN GERD

LANGWADT OTMAR

Latest standardized assignees - inventors removed

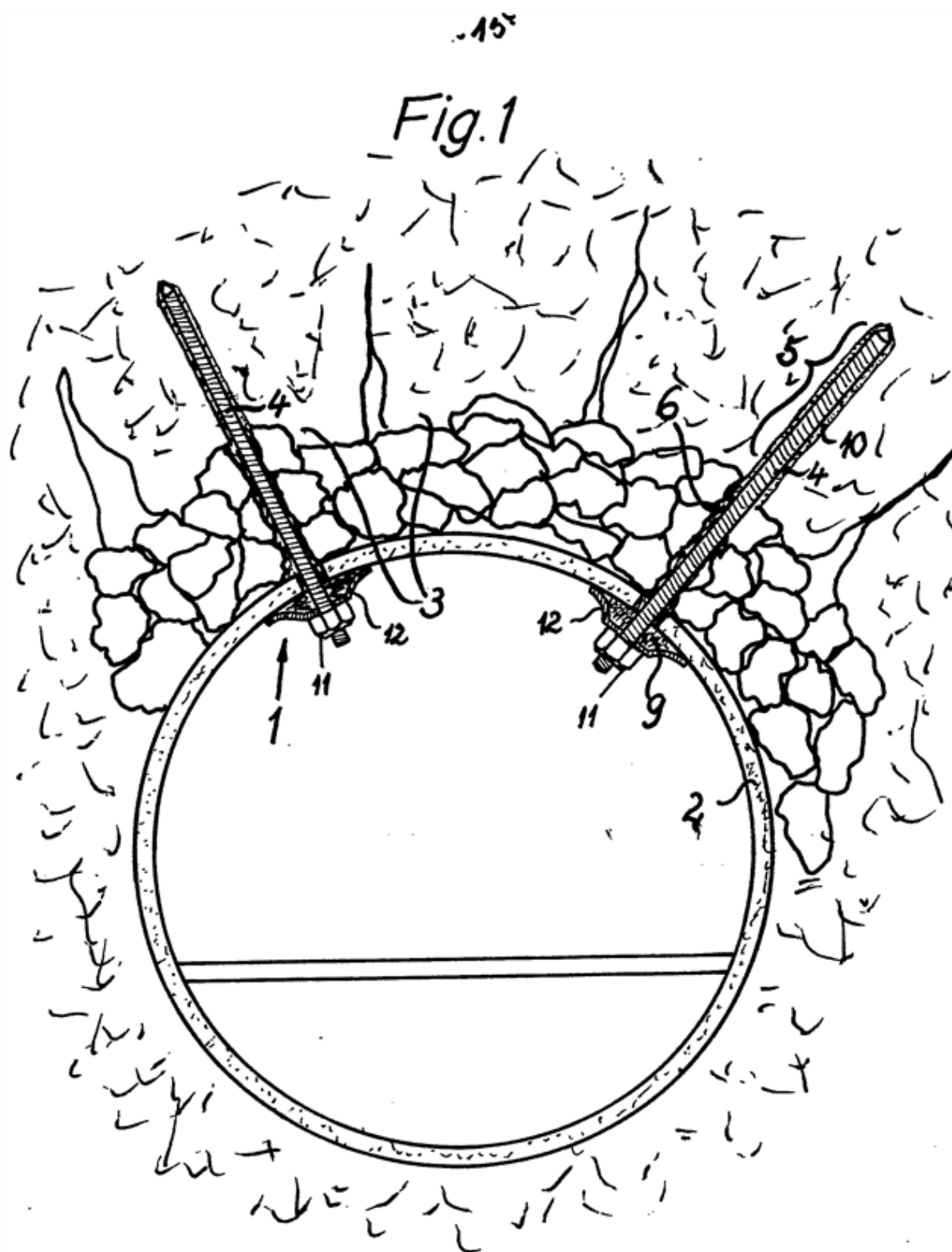
DYWIDAG

DYWIDAG SYSTEMS INTERNATIONAL

Family 71/100 - FAMPAT - ©Questel

Title

(DE2547580)

Corrosion protection for tunnel **anchoring** rods - produced by enveloping in polyurethane foam where not cemented in rock**Images****Publication data including kind & date**[DE2547580](#)

A1 1977-04-28 DE2547580

**Abstract**

(DE2547580)

An **anchoring** arrangement for mountains/tunnels has an **anchoring** and **rod** cemented in a hole in the rock by a synthetic resin adhesive (pref. in a top end cartridge), at the opposite end to that cemented in the hole a foaming agent is used to envelop the uncemented part with foam. The **anchoring rod** is resin cemented at its top end, the remaining space in the hole is filled with foam to protect it from corrosion. The end cartridge contains the **cement**. A second cartridge is filled with

foaming agent at the lower end of the hole; the **rod** is then pushed in, the cartridge is broken, and its contents fill the hole. The arrangement provides good protection from corrosion, and good bonding to the end of the **anchoring rod**. The **rod** can be prestressed at any time after the **cement** has cured, and some support for the rock at the open end of the hole is obtained.

Inventors

BAPPERT ADOLF

FRISCHMANN ALBERT

LANDSCHUETZ CHRISTIANE

LIST HANSJOERG

Latest standardized assignees - inventors removed

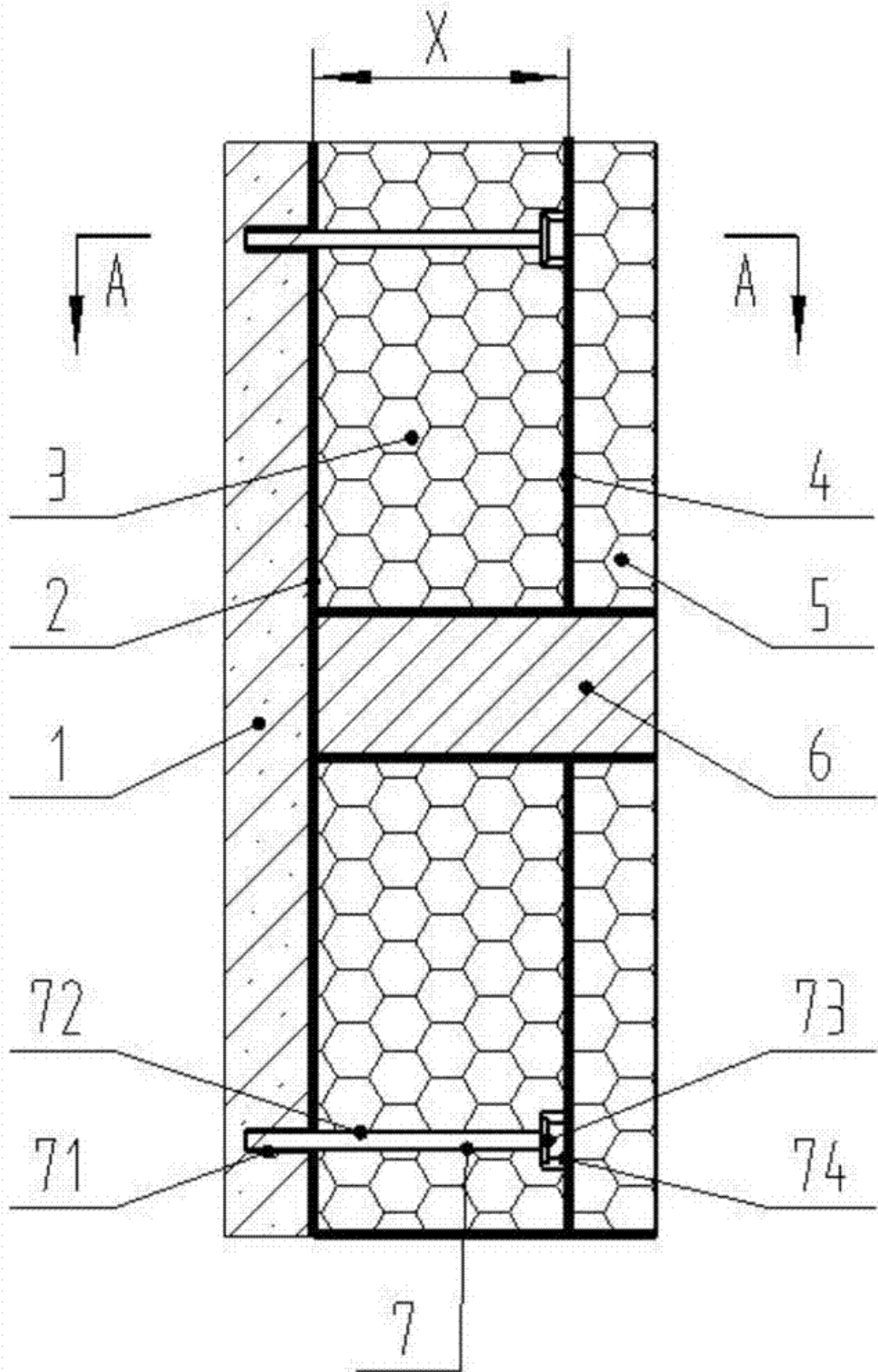
UPAT

Family 72/100 - FAMPAT - ©Questel

Title

(CN109083366)

Anchoring structure and construction method based on large EPS lines**Images**

**Publication data including kind & date**

CN109083366

A 2018-12-25 CN109083366

**Abstract**

(CN109083366)

The invention discloses an **anchoring** structure based on large EPS lines. A first bonding layer and a second bonding layer

are combined to achieve a double-layer line bonding structure principle of a first line and a second line, a transverse width Y of the first line is greater than or equal to a convex thickness X , the second line is adapted to the first line, several anchors are combined, the fixing reliability of an EPS line group is effectively improved, the second line can be set to cover the first line and the anchors, a fireproof isolation belt arranged has effective isolation fireproof effect, and the structure has the advantages of good look feeling, system safety and simple structure; the construction method of the above **anchoring** structure adopts benchmark determination, adhesive **cement** application, fireproof isolation belt setting, first line bonding, **anchoring** setting, second line bonding and the completion of **anchoring** construction to satisfy the structural stress or the anchoring support strength of different convex thicknesses, and the structure is suitable for popularization and application.

Inventors

XIAO XIA

SHI CUNLIN

Latest standardized assignees - inventors removed

CHONGQING TRICOLOR ENERGY SAVING BUILDING ENGINEERING

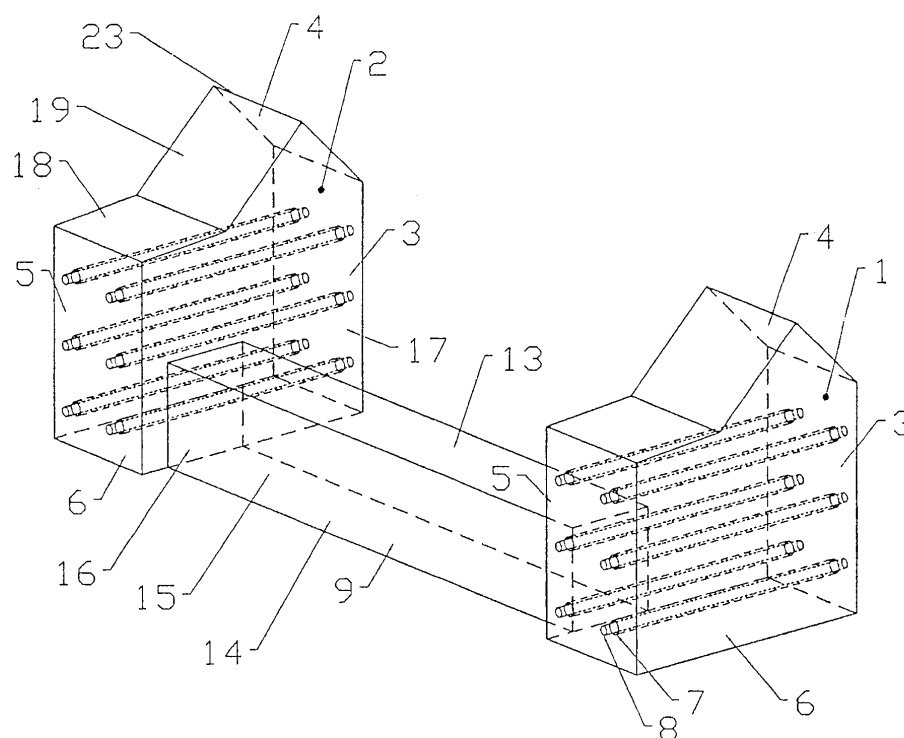
Family 73/100 - FAMPAT - ©Questel

Title

(FR2941242)

Bowstring bridge end supporting device for use during construction of Bowstring bridge, has **anchoring** blocks made of anti-corrosion material i.e. concrete, where each block has support face that supports end of arch of Bowstring bridge

Images



Publication data including kind & date

FR2941242	B1	2011-03-18	FR2941242
FR2941242	A1	2010-07-23	FR2941242



Abstract

(FR2941242)

The device has parallelepipeded **anchoring** blocks (1, 2) made of anti-corrosion material i.e. concrete. Each block has a set of cylindrical reserves (7) traversed by prestressing **anchoring** bars (8) projected above a front functional face (3) such that a **tie rod**'s ends supporting against the front face are fixed to the bars. Each block has an arch support face (4) that is turned towards an interior of a Bowstring bridge, while making an angle with respect to a direction in which metal **tie** rods are extended. The support face supports an end of a metal arch of the Bowstring bridge. An independent claim is also included for a Bowstring bridge comprising a **tie rod**.

Inventors

MATHIEU PIERRE

Latest standardized assignees - inventors removed

BAUDIN CHATEAUNEUF

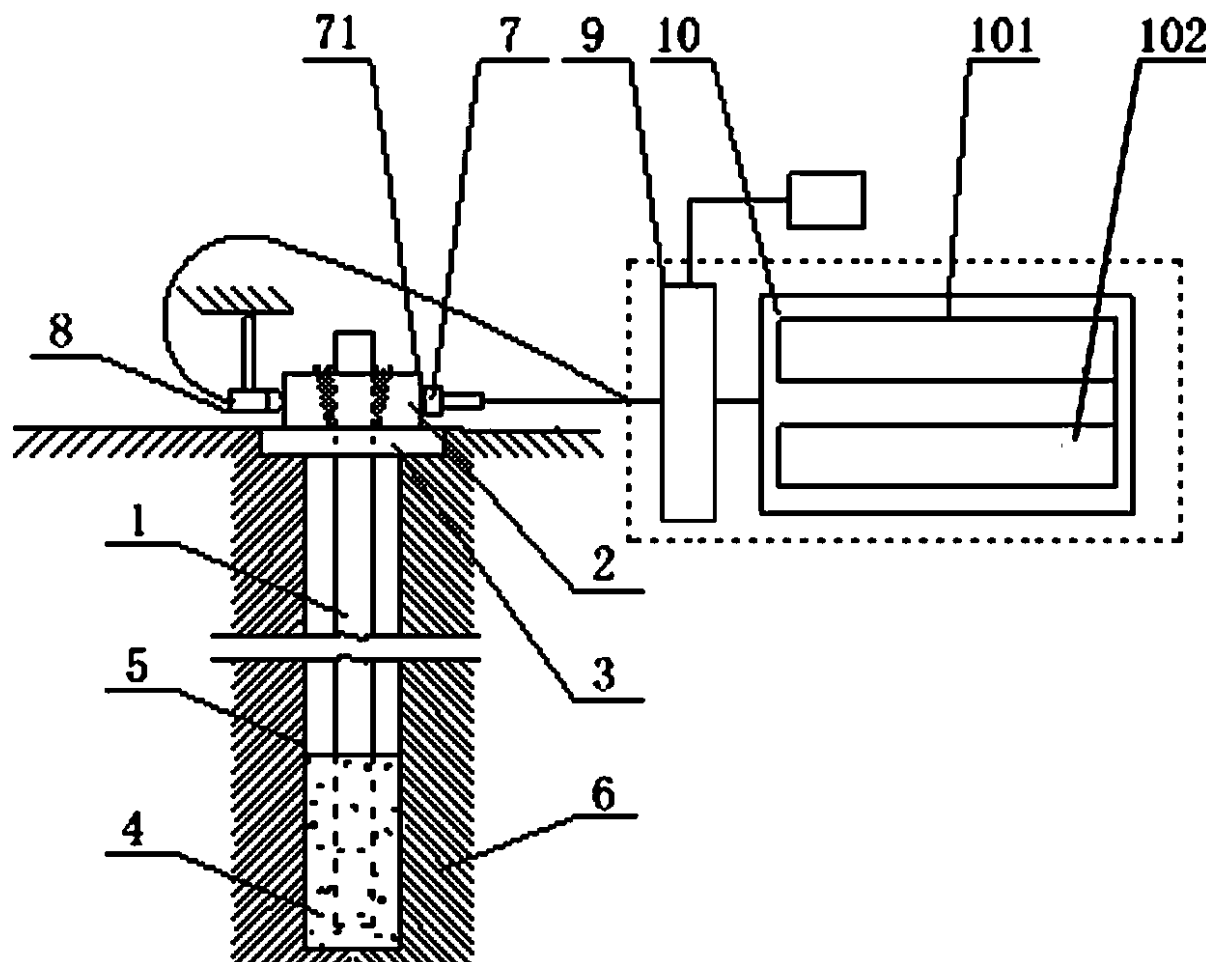
Family 74/100 - FAMPAT - ©Questel

Title

(CN103837279)

Prestress **anchoring** structure tensioning force detecting system based on single-freedom-degree system

Images



Publication data including kind & date

CN103837279

A 2014-06-04 CN103837279



Abstract

(CN103837279)

The invention discloses a prestress **anchoring** structure tensioning force detecting system based on a single-freedom-degree system. The prestress **anchoring** structure tensioning force detecting system comprises twisted steel or steel strands, an anchorage device, a corrugated conduit, an anchor bearing plate and an **anchoring** object. An anchor **rod** hole or an anchor cable hole are formed in the **anchoring** object, the twisted steel or the steel strands are arranged in the anchor **rod** hole or the anchor cable hole of the **anchoring** object through the **anchoring** segment of the twisted steel or the steel strands, the corrugated conduit is arranged in the anchor **rod** hole or the anchor cable hole of the **anchoring** object and is arranged outside the twisted steel or the steel strands in a sleeved mode, the anchor bearing plate and the **anchoring** device are arranged on an end opening of the anchor **rod** hole or the anchor cable hole of the **anchoring** object, the anchor bearing plate compresses the corrugated conduit, the **anchoring** device is used for fixing the anchor bearing plate, a hitting vibration device is arranged on one side of the **anchoring** device, an acceleration sensor is arranged on the other side of the **anchoring** device, and the acceleration sensor and the hitting vibration device are respectively connected with a computer through a data collector. The prestress **anchoring** structure tensioning force detecting system has the advantages of being convenient and easy to operate, high in practicality, wide in application and the like, and important technological and economic significance in improving the reliability of a prestress **anchoring** structure and avoiding serious engineering accidents is achieved.

Inventors

ZHONG XINGU

WANG GANG

SHU XIAOJUAN

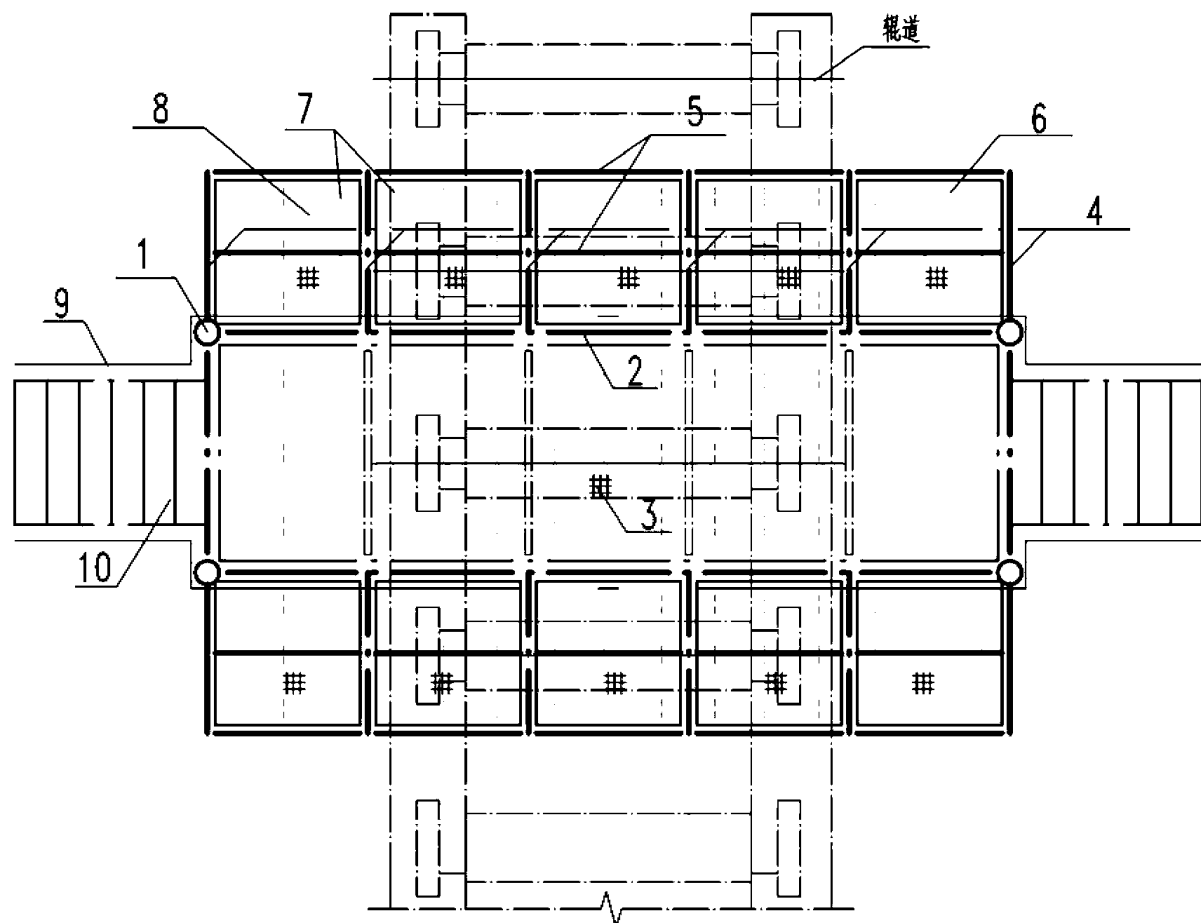
Latest standardized assignees - inventors removed

Family 75/100 - FAMPAT - ©Questel

Title

(CN203462393U)

Industrial high-temperature-resistant overpass bridge

Images**Publication data including kind & date**

CN203462393

U 2014-03-05

CN203462393U

**Abstract**

(CN203462393)

The utility model relates to an industrial high-temperature-resistant overpass bridge which comprises a platform column, a platform beam, a platform plate, an overhanging oblique beam, a round steel **tie rod**, a steel plate, an **anchoring** steel bar, a foaming **cement** thermal-insulating layer, a handrail and a steel ladder. The platform beam is fixed on the platform column. The round steel **tie rod**, the overhanging oblique beam and the platform beam form a grid structure, the overhanging oblique beam is supported and fixed through the platform beam, and the round steel **tie rod** is fixedly connected with the overhanging oblique beam. The steel plate is welded to the platform beam and the overhanging oblique beam and provided with the **anchoring** steel bar and is in **anchoring** connection with the foaming **cement** thermal-insulating layer through the **anchoring** steel bar, and the foaming **cement** thermal-insulating layer is formed by pouring foaming **cement**. The industrial high-temperature-resistant overpass bridge has the advantages that the new material foaming **cement** is adopted to serve as the fireproof thermal-insulating layer, is simple and convenient to construct and can be cast into any shape, thermal-insulating efficiency is high, and the thickness of the thermal-insulating layer can be calculated according to the thermal radiation temperature; and labor intensity of operators caused by thermal radiation on the overpass bridge is reduced.

Inventors

LI SHUANGHE

LIU YINPING

XU JUN

YIN ZIFENG

BAO YING

QIU YUNJIE

Kuanghonghong

HUANG KAI

CUI ZHENTONG

ZHANG JUN

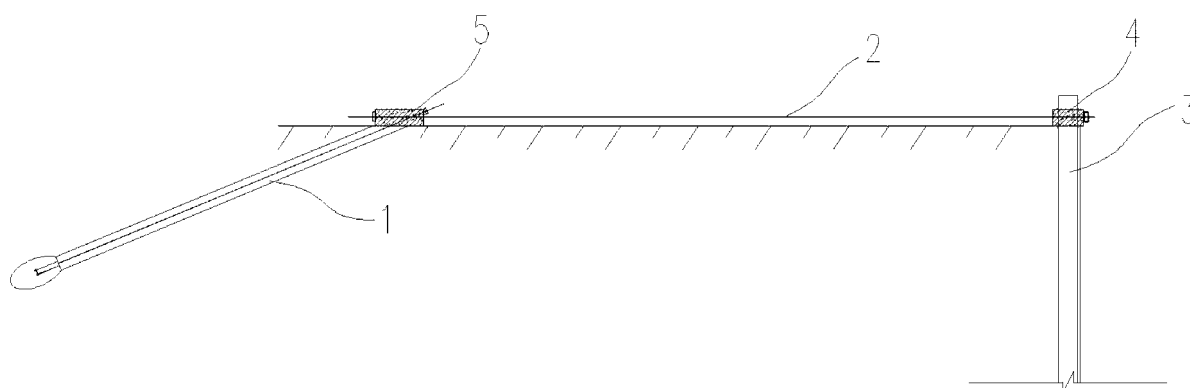
Latest standardized assignees - inventors removed

ANSTEEL ENGINEERING TECHNOLOGY

Family 76/100 - FAMPAT - ©Questel

Title

(CN202610807U)

Horizontal drawing and inclined **anchoring** type supporting structure for foundation pits**Images****Publication data including kind & date**[CN202610807](#)

U

2012-12-19

CN202610807U

**Abstract**

(CN202610807)

The utility model provides a horizontal drawing and inclined **anchoring** type supporting structure for foundation pits. The supporting structure is characterized in that an anchor rope which horizontally extends towards outside of a foundation pit is arranged at the top of the foundation pit, one end of the anchor rope is connected with a foundation pit top maintenance structure, and the other end of the anchor rope is connected with a stiffening pile which stretches into a soil body in an inclined direction. A stiffening pile support form with the anchor rope can bypass anchor **rod** construction obstacles in foundation pit supporting, and the **anchoring** force of the anchor **rod** is prolonged, so that the foundation pit can still obtain good **anchoring** supports.

Inventors

LIU QUANLIN

SONG WEIMIN

LIU FEIRAN

XIANG XIANGRONG

FAN JUNYU

Latest standardized assignees - inventors removed

SHANGHAI STRONG FOUNDATION ENGINEERING

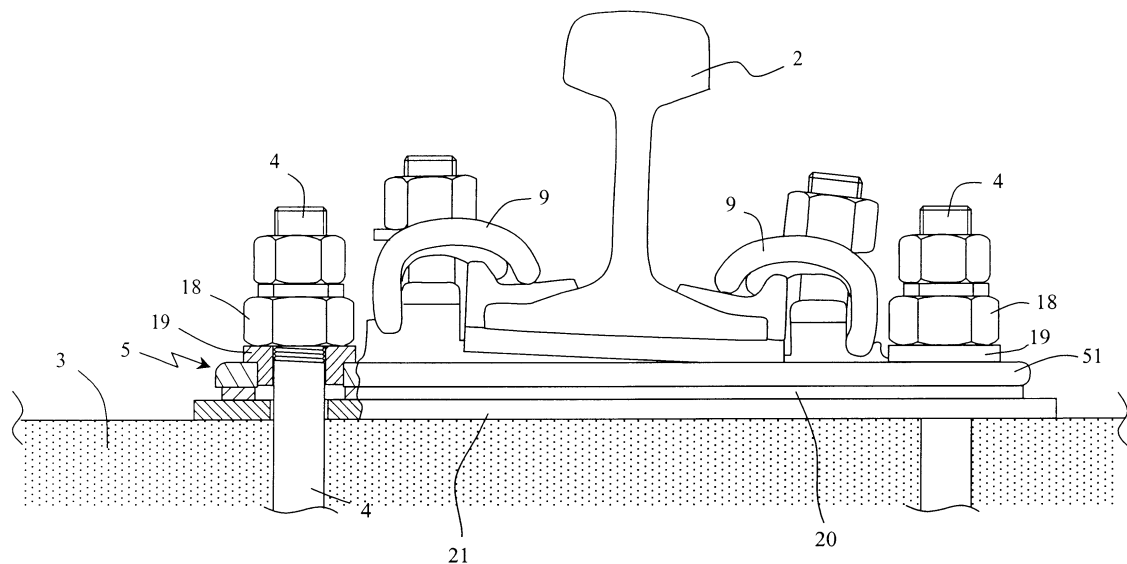
Family 77/100 - FAMPAT - ©Questel

Title

(EP1310596)

Ballastless railway construction method and **tie** plate for carrying out the method

Images



Publication data including kind & date

BR0204608	B1	2012-11-27	BR200204608
BRPI0204608	A2	2010-12-14	BR200204608
CA2410924	C	2010-02-09	CA2410924
KR100918359	B1	2009-09-22	KR100918359
HK1057771	A1	2009-04-24	HK1057771
DE60225104	T2	2009-02-12	DE60225104
PT1310596	E	2008-07-10	PT1310596
ES2301613	T3	2008-07-01	ES2301613
DK1310596	T3	2008-06-02	DK1310596T
DE60225104	D1	2008-04-03	DE60225104
JP4102161	B2	2008-03-28	JP4102161
AT386842	T	2008-03-15	ATE386842
EP1310596	B1	2008-02-20	EP1310596
TWI274094	B	2007-02-21	TWI274094
FR2831898	B1	2004-10-01	FR2831898
MXPA02010917	A	2004-07-16	MX2002PA010917
US6732418	B2	2004-05-11	US6732418
BR0204608	A	2003-09-16	BR200204608
JP2003184009	A	2003-07-03	JP2003184009
KR20030038406	A	2003-05-16	KR20030038406
TW200300194	A	2003-05-16	TW200300194
EP1310596	A1	2003-05-14	EP1310596
FR2831898	A1	2003-05-09	FR2831898
US20030084558	A1	2003-05-08	US20030084558
CA2410924	A1	2003-05-07	CA2410924
BRPI0204608	A1	2002-12-17	BR200204608



Abstract

(EP1310596)

The method involves pouring a slab forming concrete up to the height of temporary tie plates (1). The temporary tie plates are removed after the slab forming concrete has dried to form a concrete slab. Main tie plates are placed to support rails in their final positions. The main tie plates are fixed to anchor rods. <??>An Independent claim is also included for a

temporary **tie** plate.

Inventors

RADA NICOLAS

Latest standardized assignees - inventors removed

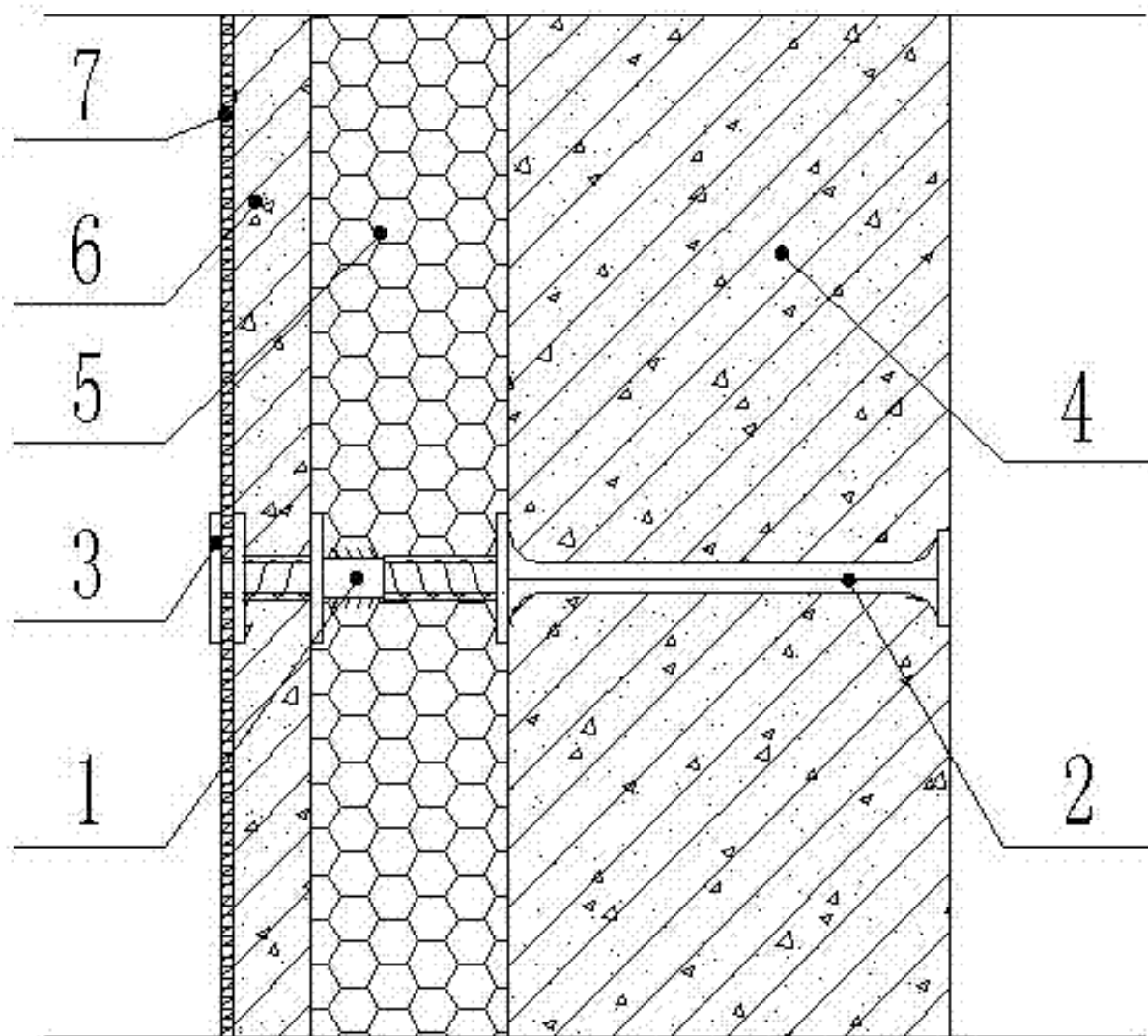
ALSTOM TRANSPORT

Family 78/100 - FAMPAT - ©Questel

Title

(CN109403477)

Anchoring part for connecting fastening heat-insulation layer and pouring heat-insulation protection layer with main wall, and installing structure

Images**Publication data including kind & date**

[CN109403477](#)

A

2019-03-01

CN109403477

**Abstract**

(CN109403477)

The invention belongs to the technical field of architectural engineering, and particularly relates to an **anchoring** part for connecting fastening heat-insulation layer and pouring heat-insulation protection layer with main wall, and an installing structure. According to the technical scheme, the **anchoring** part comprises a middle **anchoring rod**, an outer side **anchoring** piece and an inner side **anchoring** piece, wherein the outer side **anchoring** piece and the inner side **anchoring** piece are in threaded connection with the middle **anchoring rod**; and the middle **anchoring rod** comprises two pouring heat-insulation layer supporting plates, the two pouring heat-insulation layer supporting plates are connected through a first

SIBILLA VINCENZO

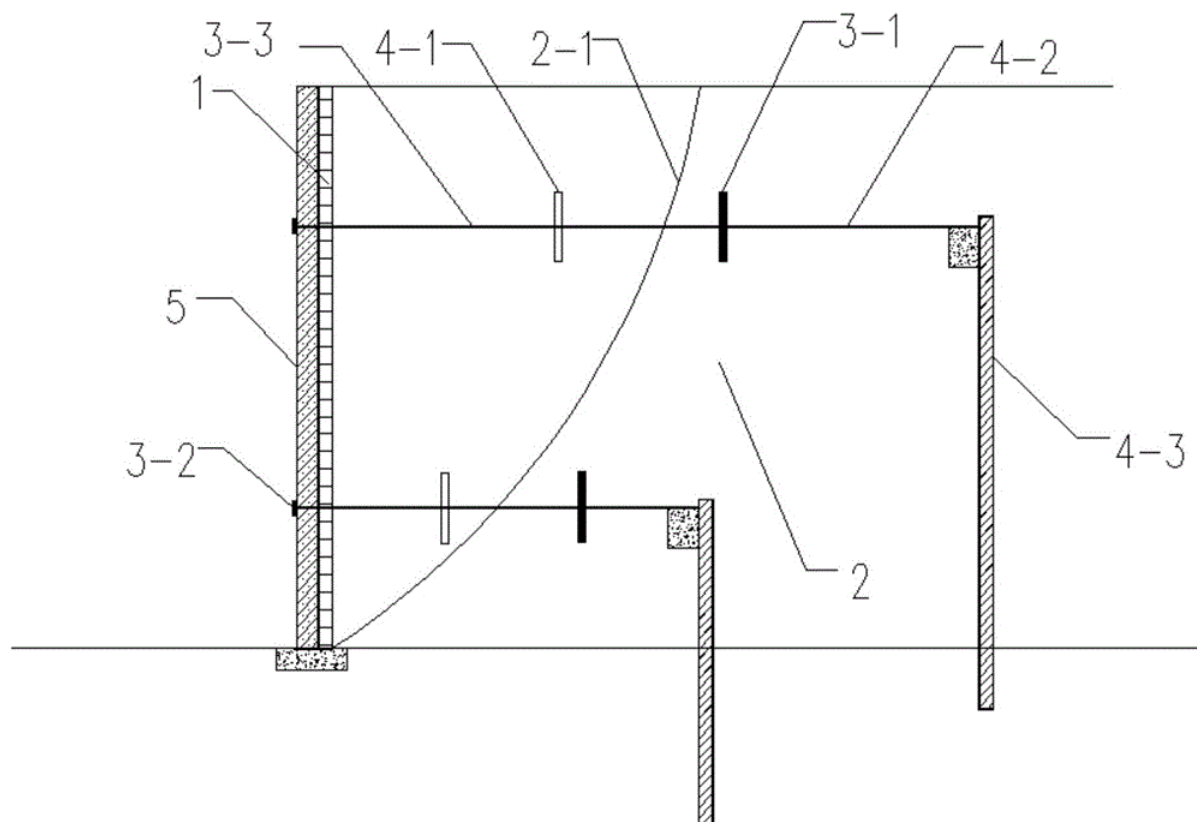
Latest standardized assignees - inventors removed

FORASOL

Family 80/100 - FAMPAT - ©Questel

Title

(CN205382507U)

Two -way anchored retaining wall by **tie** rods**Images****Publication data including kind & date**[CN205382507](#)

U 2016-07-13 CN205382507U

**Abstract**

(CN205382507)

The utility model provides a two -way anchored retaining wall by **tie** rods. Two -way anchored retaining wall by **tie** rods includes the retaining wall wall body, banket layer, a plurality of forward anchor structure and a plurality of reverse anchor structure, forward anchor structure includes many roots post and the layering setting multiunit forward anchorage element on every root post, and every group forward anchorage element comprises forward anchor plate, anchor head and connection anchor plate and the forward pull **rod** of rib post, and the setting of forward anchor plate is at the potential glide plane rear of banketing the layer, reverse anchor structure includes the reverse anchorage element of multiunit that the layering set up, and every layer of reverse anchorage element comprises with the reverse pull **rod** of **anchoring** body the reverse anchor plate of reverse anchor plate, **anchoring** body and connection, and the **anchoring** body setting is in the potential glide plane trailing edge or original side slope on layer that banket, and the potential glide plane the place ahead on the layer of banketing is arranged in to reverse anchor plate. The utility model discloses can increase the stability of barricade to reduce it and self take place the possibility of destruction, make the interface that bankets with the sloping body of original state obtain the reinforcement.

Inventors

LIU XU

WANG ZONGKUI

ZHOU REN

Latest standardized assignees - inventors removed

WUHAN SURVEYING GEOTECHNICAL RESEARCH INSTITUTE

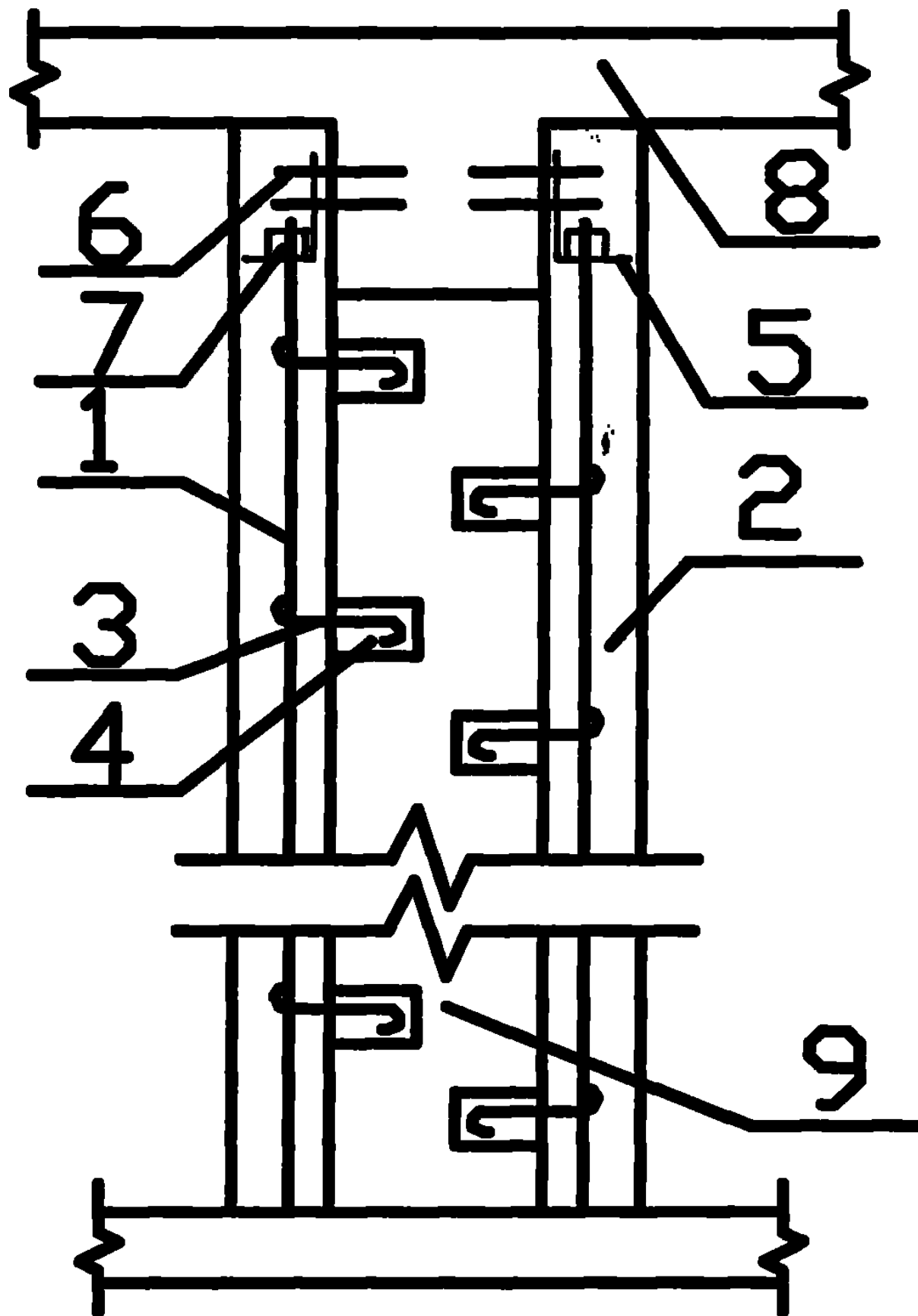
Family 81/100 - FAMPAT - ©Questel

Title

(CN101845899B)

Structure of lower load bearing wall of reinforcement floorslab and construction method

Images



Publication data including kind & date

CN101845899	B	2012-10-31	CN101845899B
CN101845899	A	2010-09-29	CN101845899

**Abstract**

(CN101845899)

The invention discloses a structure of a lower load bearing wall of a reinforcement floorslab and a construction method. The structure is characterized by comprising a prestressed **tie rod**, gunite, an S-shaped **anchoring** rib, water glass mortar, angle iron and bolts, wherein the angle iron is arranged at a position of 50cm below the floorslab, double bolts are fixed on a concrete beam below the floorslab, the prestressed **tie rod** is fixed on the angle iron by using a nut after the stretching of the prestressed **tie rod** is finished, the side face of the prestressed **tie rod** is fixed on the load bearing wall by the S-shaped **anchoring** rib, and the outer side of the prestressed **tie rod** is provided with the gunite. The invention has strong safety and reliability and convenient operation.

Inventors

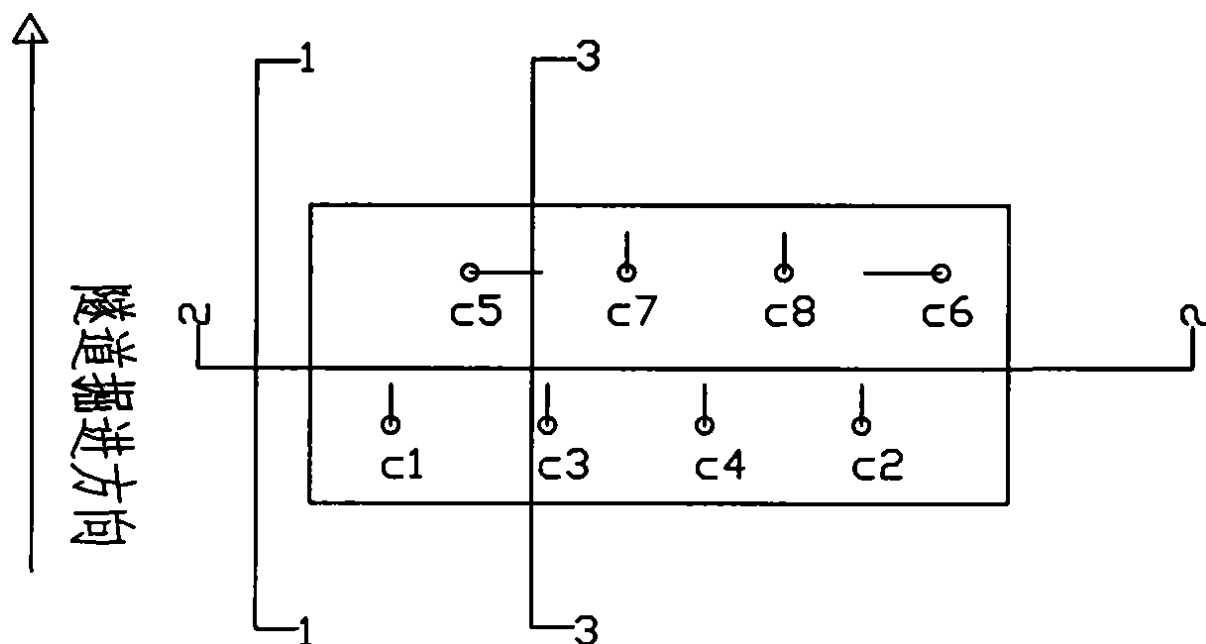
ZHU KUI

Family 82/100 - FAMPAT - ©Questel

Title

(CN102678142B)

Multi-directional inclined combination type **anchoring** system for horizontal lamellar surrounding rock of tunnel and mounting method thereof

Images**Publication data including kind & date**

CN102678142	B	2014-11-19	CN102678142B
CN102678142	A	2012-09-19	CN102678142

**Abstract**

(CN102678142)

The patent refers to the field of 'setting **anchoring** bolts'. The invention discloses a multi-directional inclined combination type **anchoring** system for a horizontal lamellar surrounding rock of a tunnel and a mounting method thereof. The **anchoring** system comprises a tunnel vault anchor **rod** group and a tunnel haunch anchor **rod** group, wherein the tunnel vault anchor **rod** group is formed in the way that: anchor rods are arranged in a quincunx manner, a first anchor **rod** is upwards obliquely anchored in an anchored point at an inclined angle of 30 degrees along a face direction, meanwhile, after each anchor **rod** is anchored, a second anchor **rod** is anchored along a direction of a vertical layer; the tunnel haunch anchor **rod** group is formed in the way that: anchor rods are arranged in a quincunx manner, a first anchor **rod** is upwards obliquely anchored at

an inclined angle of 30 degrees along a direction of a funnel central line, meanwhile, after each anchor **rod** is anchored, a second anchor **rod** is anchored along a direction of a vertical layer, and the residual anchor rods are placed in the same manner. The **anchoring** system, provided by the invention, can effectively reach an effect of reinforcing the horizontal lamellar surrounding rock by the conventional **anchoring** system.

Inventors

ZHANG QIANGUAN

WENG QINENG

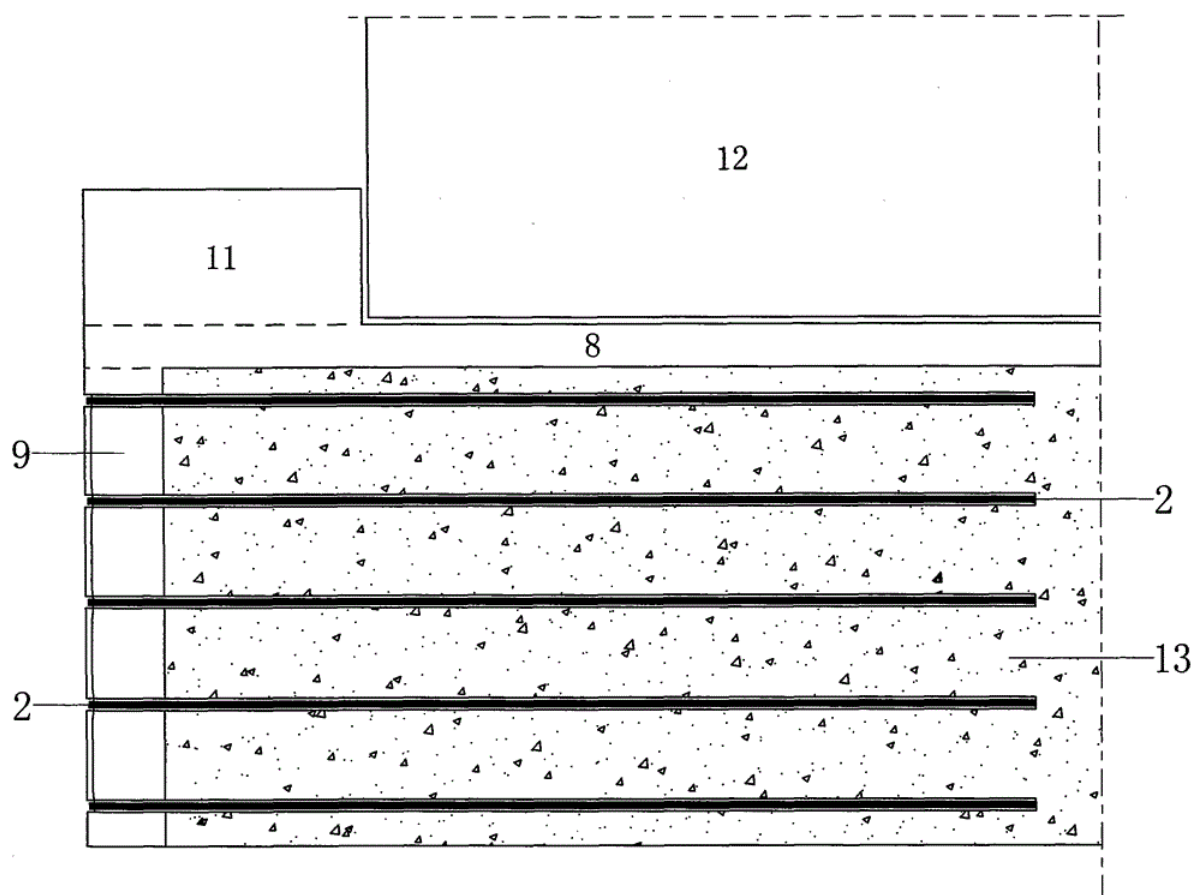
Family 83/100 - FAMPAT - ©Questel

Title

(CN104746440)

Mudjacking type anchor **rod** reinforcing method for repairing longitudinal cracking of U-shaped bridge abutment

Images



Publication data including kind & date

CN104746440	B	2016-06-08	CN104746440B
CN104746440	A	2015-07-01	CN104746440



Abstract

(CN104746440)

The invention relates to a mudjacking type anchor **rod** reinforcing method for repairing longitudinal cracking of a U-shaped bridge abutment. When the U-shaped bridge abutment longitudinally cracks, concrete on the two sides of a longitudinal crack is broken and weathered seriously, and rebars of an original structure are rusted and even broken. Because of scouring of water seepage of a bridge deck, a large number of cavities are formed in filling soil of the bridge abutment. When the U-shaped bridge abutment is repaired, mudjacking type anchor rods are driven into the U-shaped bridge abutment in a matrix shape in the horizontal direction of a cross bridge, cracked bridge abutment side walls and the filling soil of the bridge abutment are anchored together, and the cavities in the filling soil of the bridge abutment are all filled with **anchoring cement** mortar. The tensile strength of the mudjacking type anchor rods is high, and the structure is novel and unique. Firstly, the **anchoring cement** mortar forms backflow in anchor holes, air in the anchor holes is completely

exhausted and the space in the anchor holes is filled with the **anchoring cement** mortar; then, the **anchoring cement** mortar is enabled to have enough pressure so that the **anchoring cement** mortar can permeate to the cavities in the filling soil of the bridge abutment. An operating tool for the method is simple, the building cost of a project is low, repairing quality is high, and bridge deck traffic does not need to be interrupted in the whole construction process.

Inventors

YANG HONGLIANG

PEI CHENGRUN

Latest standardized assignees - inventors removed

BEIJING GONGLIAN XINDA INTELLIGENT TRANSPORTATIONTECHNOLOGY

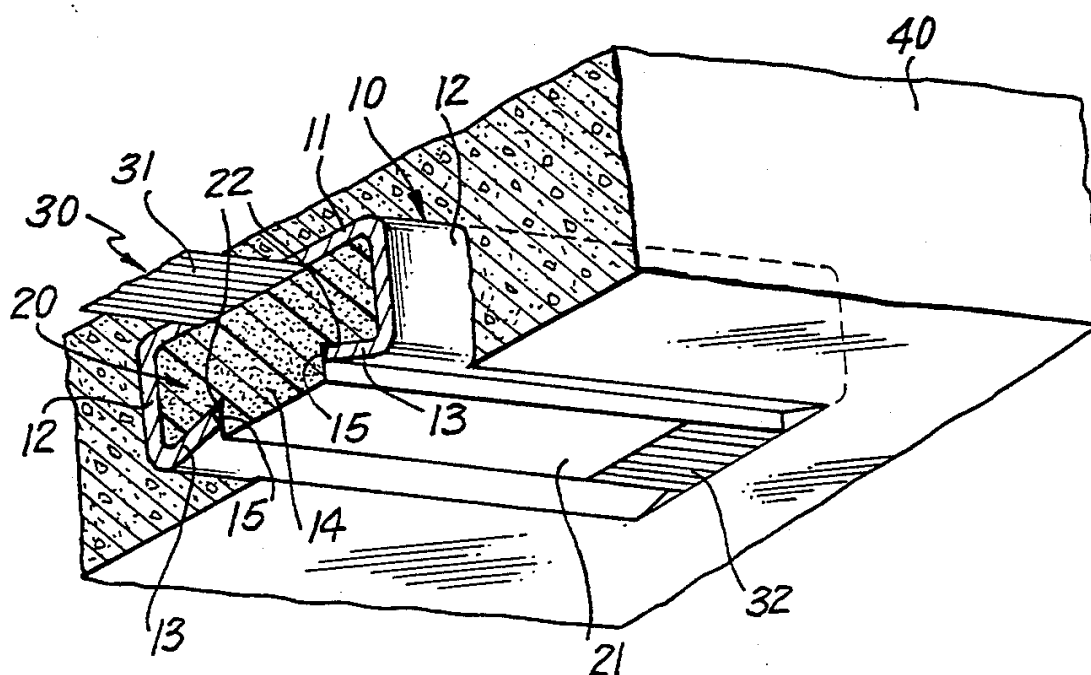
Family 84/100 - FAMPAT - ©Questel

Title

(EP-123979)

Anchoring channel for structural engineering

Images



Publication data including kind & date

JP1801945	C	1993-11-26	JP1801945
KR930001139	B1	1993-02-18	KR930001139
JPH055012	B2	1993-01-21	JP93005012
DE3483891	D1	1991-02-14	DE3483891
AT59869	T	1991-01-15	ATE059869
EP0123979	B1	1991-01-09	EP-123979
CA1220954	A	1987-04-28	CA1220954
EP0123979	A3	1986-11-05	EP-123979
DE3315632	C2	1986-05-07	DE3315632
US4532740	A	1985-08-06	US4532740
KR840009125	A	1984-12-24	KR19840009125
JPS59206541	A	1984-11-22	JP59206541
DE3315632	A1	1984-11-08	DE3315632
EP0123979	A2	1984-11-07	EP-123979



Abstract

(EP0123979)

An **anchoring** track designed to be embedded in the surface of a structural member of concrete, the track having a C-shaped profile and a styrofoam filler body filling out the interior of the track to prevent the penetration of mortar into the track, the filler body being removable from the embedded track by means of a tear strip which is arranged between the back side of the filler body and the base wall of the **anchoring** track, in alignment with the slot of the **anchoring** track. The tear strip, when pulled through the slot of the track, tears out a central profile portion from the filler body to permit easy removal of the profile portions of the filler body remaining underneath the flange portions of the **anchoring** track.

(From US4532740 A)

Inventors

FRICKER, SIEGFRIED

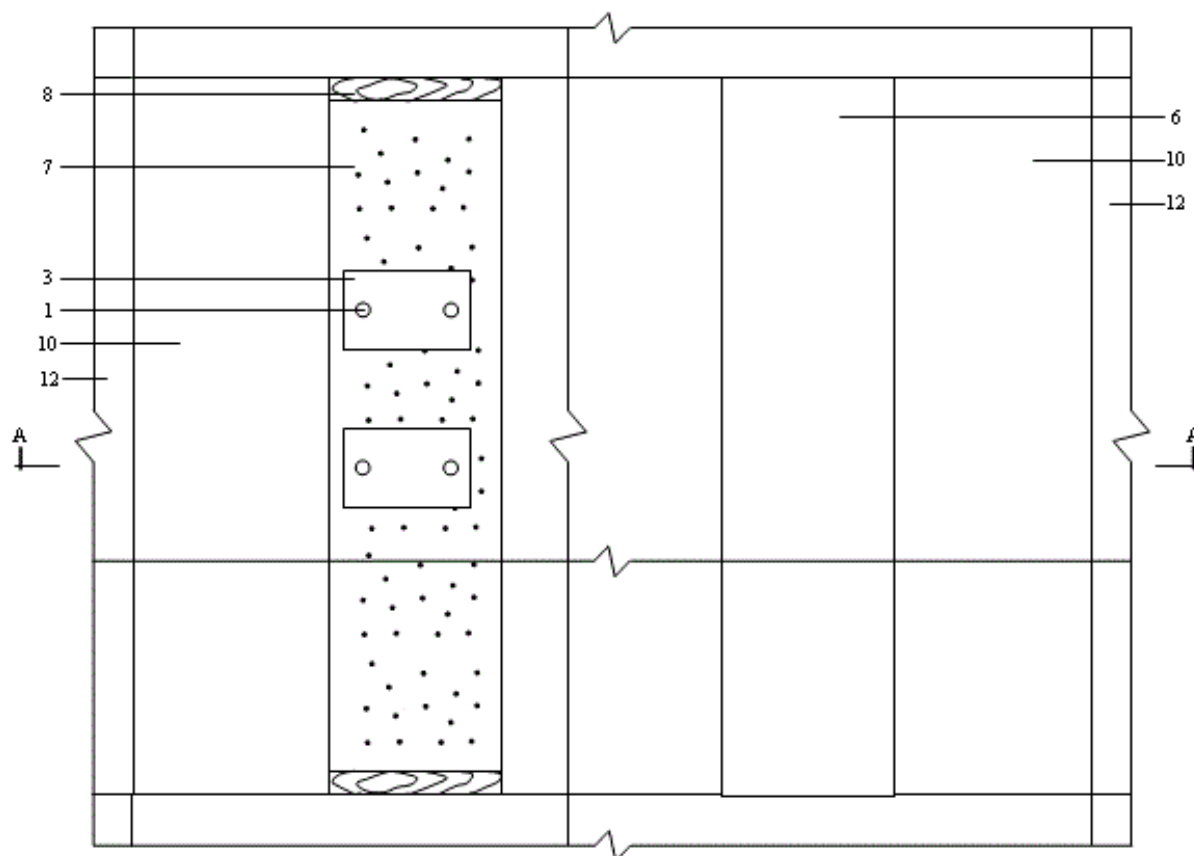
Latest standardized assignees - inventors removed

HALFEN

Family 85/100 - FAMPAT - ©Questel

Title

(CN104594619)

Construction and implementation method for tool type **anchoring** end of overhung external scaffold profile steel beams**Images****Publication data including kind & date**

CN104594619	B	2017-04-05	CN104594619B
CN104594619	A	2015-05-06	CN104594619

**Abstract**

(CN104594619)

The invention relates to a construction and implementation method for a tool type **anchoring** end of overhung external scaffold profile steel beams. A scaffold support, a main standard keel, auxiliary standard keels, small standard formworks, seam splicing formworks, standard formworks, PVC sleeve pipes, U-shaped bolts, profile steel beams, seam splicing formworks, plugging battens and heating steel plates are included, wherein the scaffold support is built through phi 48 steel tubes, adjustable supporting heads are arranged on the top of the scaffold support, the main standard keel is arranged on

the scaffold support in the full length, the auxiliary standard keels are arranged on the main standard keel in the perpendicular direction of the main standard keel, the small standard formworks, the seam splicing formworks and the standard formworks are arranged at the upper end of the auxiliary standard keels and used for carrying floor slab concrete, the PVC sleeve pipes penetrate through the concrete, the U-shaped bolts penetrate into steel cushion plates and are sleeved with the PVC sleeve pipes, the seam splicing formworks are arranged below the profile steel beams and on auxiliary non-standard keels and used for carrying **cement** mortar, the plugging battens are arranged perpendicular to the two ends of the seam splicing formworks in the length direction, and the heating steel press plates press the profile steel beams and are fixed through nuts. The safety of the profile steel beam **anchoring** end can be effectively improved, the U-shaped bolts, the steel cushion plates, the formworks, the auxiliary non-standard keels and the battens can be tooled and used repeatedly, the material cost is greatly lowered, hard blocks formed by the **cement** mortar can be scraped and then used for **rod** padding, the installation speed is high, and the construction speed is increased.

Inventors

WEI YONG

JIN ZHENYU

LU JIANBING

XU FEN

DU YONG

TANG SHENG

CHEN YANG

SHI WEIDE

HUANG ZHENGJIE

SHI HUAPING

Latest standardized assignees - inventors removed

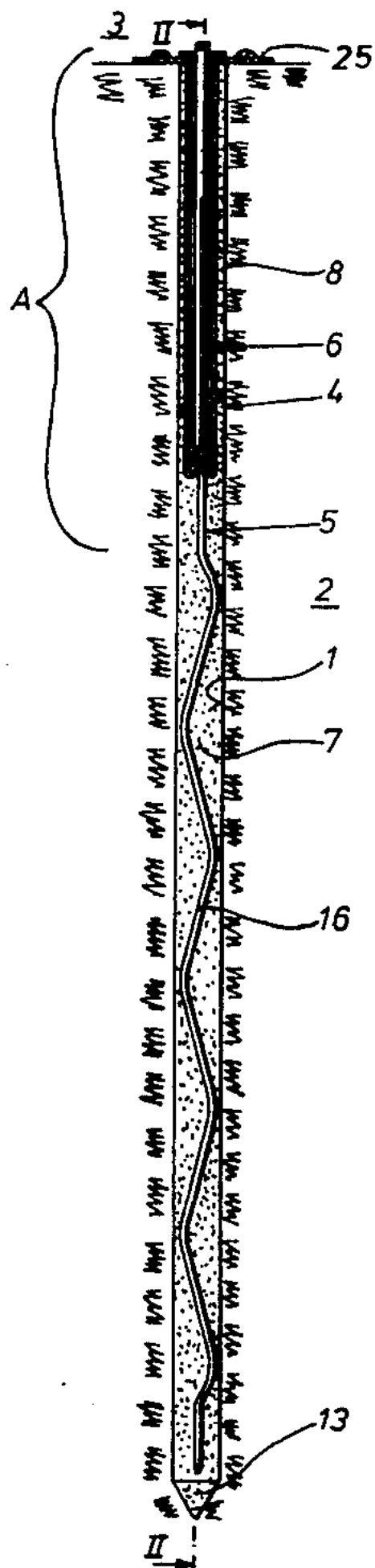
NANTONG NO 3 CONSTRUCTION

Family 86/100 - FAMPAT - ©Questel

Title

(US4440526)

Rock **anchoring** arrangement**Images**



Publication data including kind & date

FR2496752	B1	1985-08-23	FR2496752
AU545378	B2	1985-07-11	AU-545378
CA1172477	A	1984-08-14	CA1172477
US4440526	A	1984-04-03	US4440526
DE3047709	C2	1983-02-24	DE3047709
ES508077	A0	1982-12-01	ES-508077
ES8302848	A1	1982-12-01	ES8302848
ZA8106373	B	1982-09-29	ZA8106373
DE3047709	A1	1982-07-22	DE3047709
FR2496752	A1	1982-06-25	FR2496752
AU7786481	A	1982-06-24	AU8177864
ZW23681	A1	1982-02-17	ZW8100236



Abstract

(US4440526)

A rock **anchoring** arrangement for use especially in tunnel and mine constructions involving considerable convergences comprises an **anchoring** sleeve having a leading and a trailing end as considered in the direction of introduction of the **anchoring** arrangement into an **anchoring** bore in the rock formation, an **anchoring rod** having a trailing end portion passing through the interior of the **anchoring** sleeve and a leading end portion which extends beyond the leading end of the sleeve, a mounting plate arranged at the trailing end of the sleeve and engaging the rock formation around the open end of the bore, and a drawing die secured to the sleeve at the leading end. The **anchoring** sleeve and the **anchoring rod** are both retained in the bore by a body of a hardenable material, such as an adhesive, in which the sleeve and the leading end portion of the **rod** are embedded. The leading end portion of the **rod** has a smaller diameter than the trailing end portion so that a transition region exists between these portions. The drawing die has an aperture which receives the leading end portion and, when pulling force acts on the arrangement, acts on the transition region to deform the same when the magnitude of the pulling force is at a predetermined level and thus to increase the axial length of the **anchoring rod**. The aperture is either conical throughout, or includes alternating conical and cylindrical zones.

Inventors

KOPPERS MANFRED

BOHNES KARL HEINZ

STEPHAN BERNHARD

Latest standardized assignees - inventors removed

HEINTZMANN

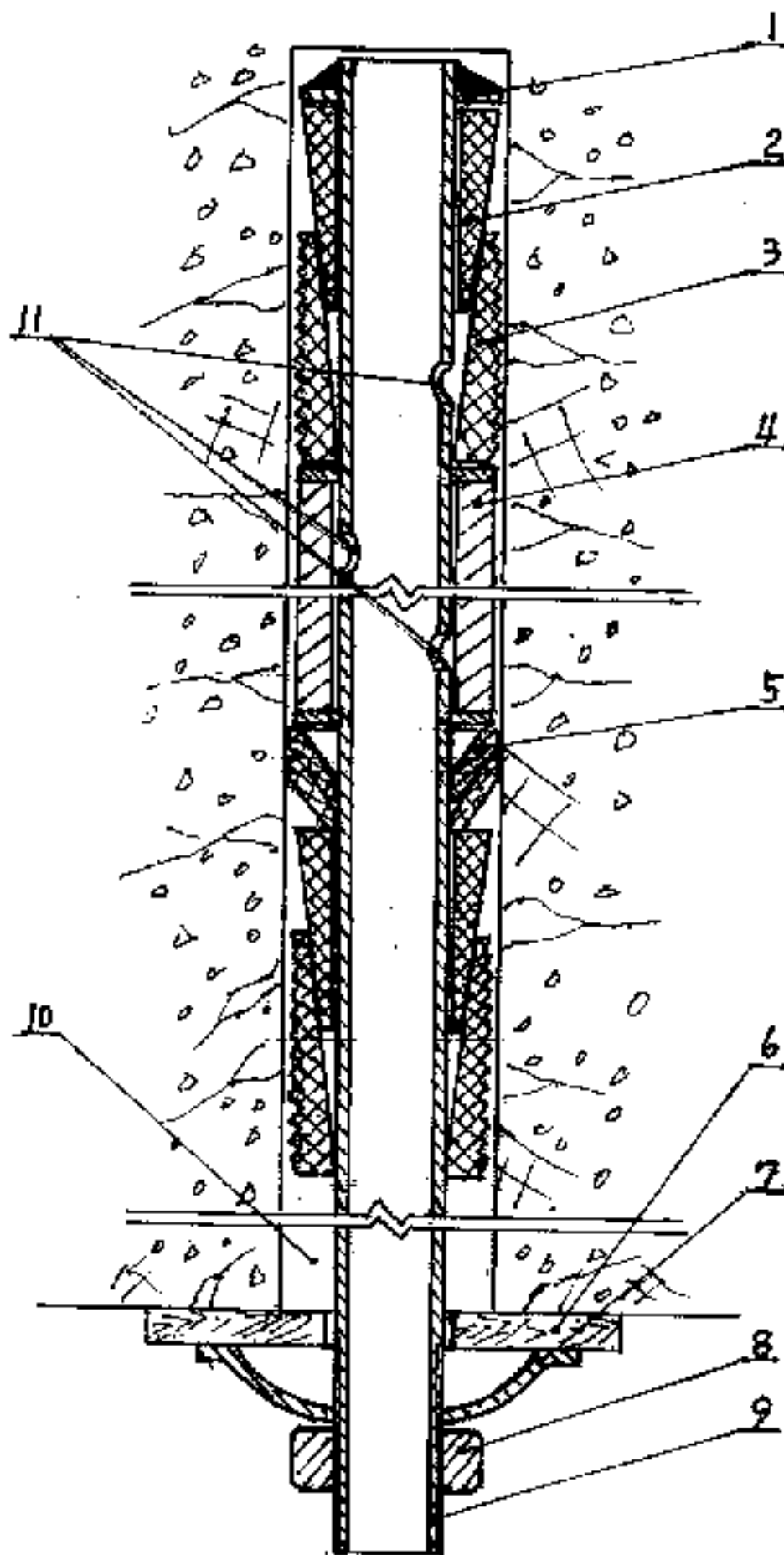
Family 87/100 - FAMPAT - ©Questel

Title

(CN2720118U)

Internal slurry-injection anchor rod of plastic expand housing external anchor

Images



Publication data including kind & date

[CN2720118](#)

Y 2005-08-24 CN2720118U



Abstract

(CN2720118)

The utility model relates to a device used for slurry injecting, strengthening or water blocking to peripheral surrounding rock in underground rock body engineering, in particular to an internal slurry-injection anchor **rod** of plastic expand housing external anchor which is used for slurry injecting, strengthening or water blocking to peripheral surrounding rock in underground rock body engineering such as a tunnel, a well bore, a laneway, a different chamber, etc. The internal slurry-injection anchor **rod** of plastic expand housing external anchor is composed of an anchor **rod** body 9, a locking nut 8, a butterfly shape tray 7, a wooden backing board 6 and a shield ring 1; a plurality of **anchoring** heads are movably sheathed outside the anchor **rod** body 9 inside a drill hole 10; the **anchoring** head comprises an anchor core 2; an expand housing is movably sheathed outside the anchor core 2; a separating rack is movably provided between the lower part of the expand housing 3 and the anchor core 2 of the next anchor head, and two or three wedge shape rubber sealing rings 5 are sheathed between the lower part of the expand housing 3 and the anchor core 2 of the next anchor head. The internal slurry-injection anchor **rod** of plastic expand housing external anchor has double functions of **anchoring** and slurry injecting, which is very favorable for optimizing construction technology; the final bolt locking force of the anchor **rod** can be greatly improved by the co-action of the plastic expand housing **anchoring** head and concretionary slurry liquid.

Inventors

ZHANG WENJUN

DUAN KEXIN

ZHANG YONGJI

Latest standardized assignees - inventors removed

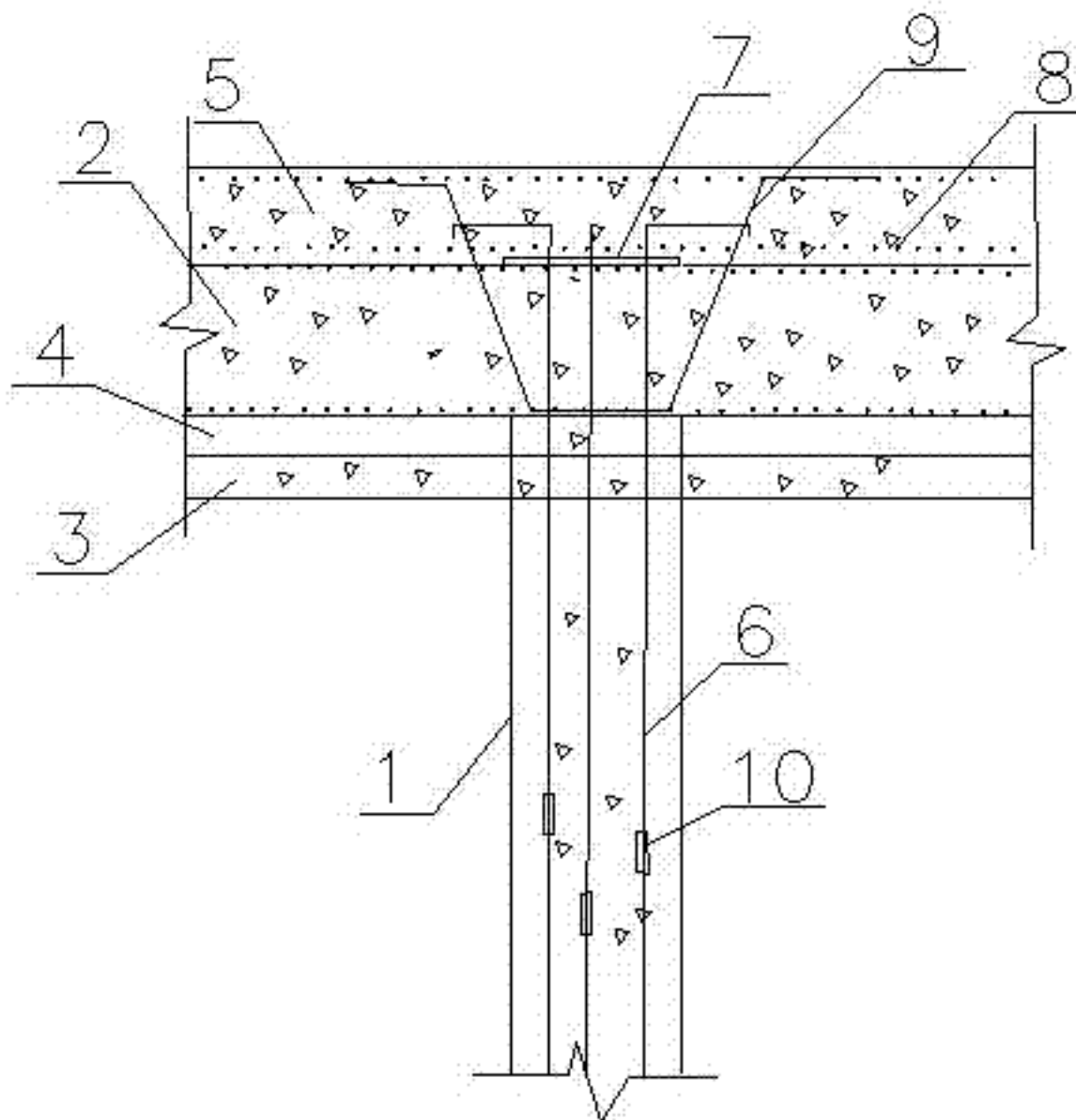
LIAONING TECHNICAL UNIVERSITY

Family 88/100 - FAMPAT - ©Questel

Title

(CN108560611)

Anchoring structure used after return and leveling for inclination and floating of basement, and construction method**Images**



Publication data including kind & date

CN108560611

A

2018-09-21

CN108560611



Abstract

(CN108560611)

The invention relates to an **anchoring** structure used after return and leveling for the inclination and floating of a basement, and a construction method. The **anchoring** structure is T-shaped, and comprises an anchor pile, a concrete floor, a cushion layer, a **cement** paste filling layer and an upper sealing layer, wherein the upper end of the anchor pile is fixedly connected with the concrete floor; the cushion layer is arranged at the lower end of the concrete floor; the **cement** paste filling layer is arranged between the cushion layer and the concrete floor; the upper sealing layer is arranged on the upper end surface of the concrete floor; three anchor pile steel bars are arranged in the anchor pile; the upper ends of the three anchor pile steel bars penetrate through the concrete floor and stretch into the upper sealing layer; an anchor plate is arranged in the upper sealing layer; and the anchor plate sleeves the three anchor pile steel bars. The **anchoring** structure disclosed by the invention is simple and firm in structure, reliable in quality, and high in engagement force; and with the adoption of the **anchoring** structure and the construction method, the anti-floating and reinforcing effects of the basement can be effectively improved, and the **anchoring** structure is high in overall strength, convenient and rapid in construction, and low in construction cost.

Inventors

WU QIANCHANG

LIU RONG

ZHOU XIN

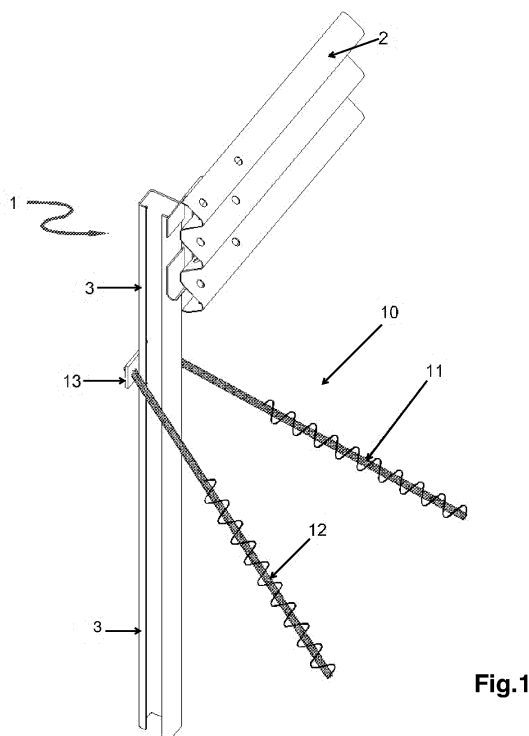
Latest standardized assignees - inventors removed

JIANGSU HUWU CONSTRUCTION

Family 89/100 - FAMPAT - ©Questel

Title

(WO201908525)

Device for **anchoring** safety road barrier poles to the ground**Images****Publication data including kind & date**[WO2019/008525](#)

A1 2019-01-10

WO201908525

[IT201700074885](#)

A1 2019-01-04

IT201700074885

**Abstract**

(WO2019/008525)

An **anchoring** device for safety road barrier supporting pole (3) comprises a coupling element (13) fixed to the pole (3) when it is driven into ground near a road, at last one metal **tie-rod** (11, 12) fixed to an end of the bracket (13) and at the second end has with a surface provided with surface protrusions which increase the grip of the materials with which it is made to the road superstructure.

Inventors

PERNETTI MARIANO

CALAMANI OTTAVIA

Latest standardized assignees - inventors removed

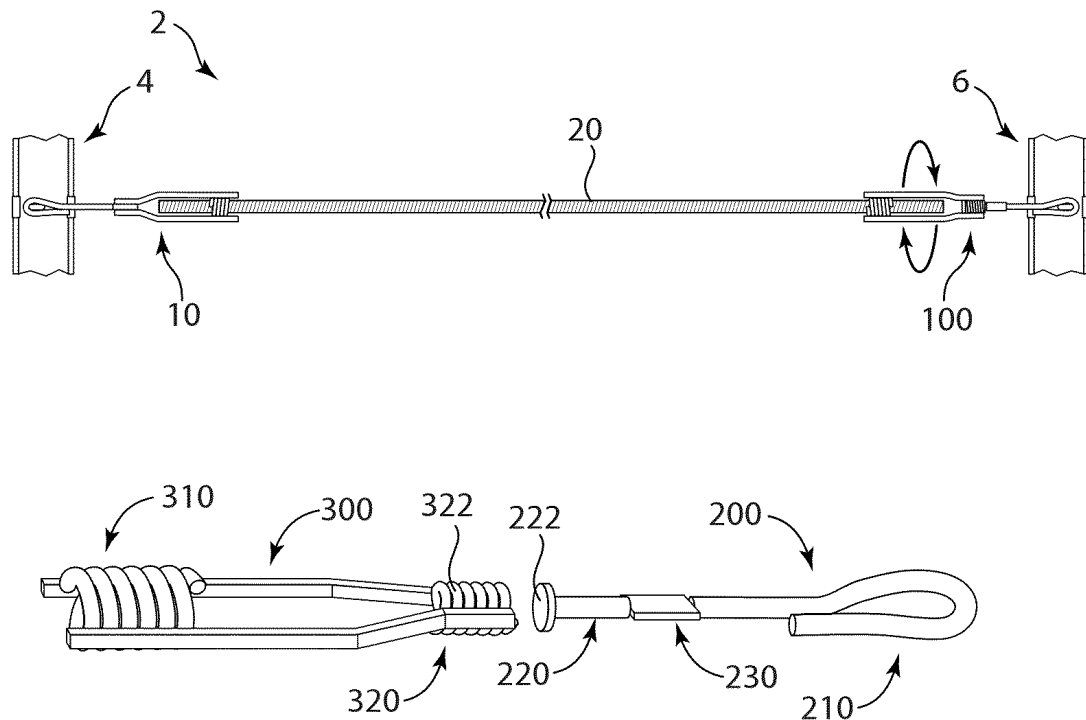
TSL ENGINEERING SOC A RESPONSABILITA LIMITATA

Family 90/100 - FAMPAT - ©Questel

Title

(US9133635)

Adjustable **tie rod** assembly employing a free swiveling capability**Images**

**Publication data including kind & date**[US9133635](#)

B2 2015-09-15

US9133635

[US20140326853](#)

A1 2014-11-06

US20140326853

**Abstract**

(US20140326853)

The present disclosure relates to **tie** components that allow for the length of an overall **tie** assembly to be adjustable, after being anchored in place. Such **tie** components may exhibit a swiveling capability where a portion thereof may rotate with respect to a corresponding adjustment member, resulting in movement of the **tie** component and adjustment member back and forth relative to one another, as desired. One or more **tie** components of a **tie** assembly may be anchored (e.g., to a wall), yet the overall length, or tension, of the **tie** assembly may be adjusted. A **tie** component may include a first portion having an anchor end that may be fixed to a wall, and a swivel end located opposite thereof. The **tie** component may also include a second portion having an adjustment end that may engage with an appropriate adjustment member, and a swivel end located opposite thereof. The respective swivel ends of the first and second portions of the **tie** component may be rotatably coupled.

Inventors

TITCOMB PAUL S

TITCOMB TED

Latest standardized assignees - inventors removed

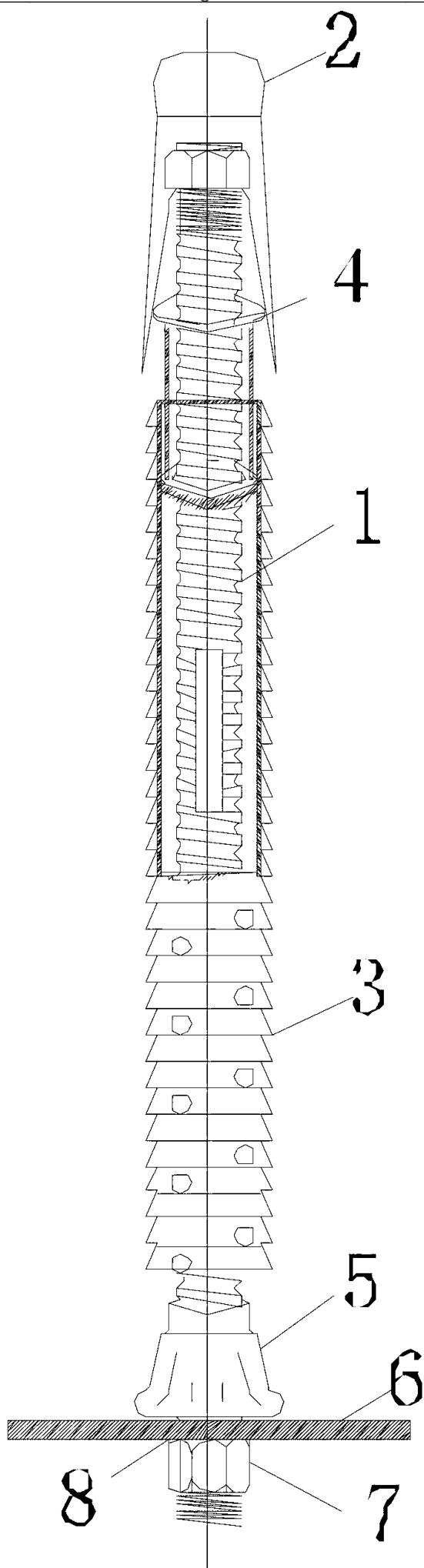
TITCOMB BROTHERS MANUFACTURING

Family 91/100 - FAMPAT - ©Questel

Title

(CN103133026)

Novel expansion shell inverted wedge type grouting anchor **rod****Images**



Publication data including kind & date

CN103133026

A

2013-06-05

CN103133026

**Abstract**

(CN103133026)

The invention provides a novel expansion shell inverted wedge type grouting anchor **rod** comprising an anchor **rod** body, an expansion shell type **anchoring** head, an inverted wedge type outer sleeve, a transmission ring, a grouting blocking plug, an **anchoring** base plate and nuts. The anchor **rod** is characterized in that the expansion shell type **anchoring** head and the **anchoring** base plate are located at two ends of the anchor **rod** body and are fixed through the nuts, the inverted wedge type outer sleeve is sleeved outside of the anchor **rod** body, the bottom of the transmission ring is arranged in the inverted wedge type outer sleeve, and the top end of the transmission ring contacts the expansion shell type **anchoring** head. The anchor **rod** body is a hollow metal **rod** element provided with left-hand threads. The expansion shell type **anchoring** head is small-end-up and provided with a flap-shaped structure which can open at a certain angle in an expansion mode, and can form barbs invertedly piercing in a rock body when stressed and expanded. The surface of the inverted wedge type outer sleeve is provided with inverted wedge type grooves in the annular direction. The novel expansion shell inverted wedge type grouting anchor **rod** has the advantages of being fast in **anchoring**, easy to install, capable of grouting and the like, facilitates mechanical construction, and has good **anchoring** effects on soft, expanded and cracked surrounding rock.

Inventors

XU XUEZHAN

LIU WANRONG

MENG XIANGRUI

ZHAO GUANGMING

XU WEIZE

WANG XIANGQIAN

GAO ZHAONING

PENG CHAO

WANG YINGSHUAI

DONG YONG

YE CHUNLIANG

Latest standardized assignees - inventors removed

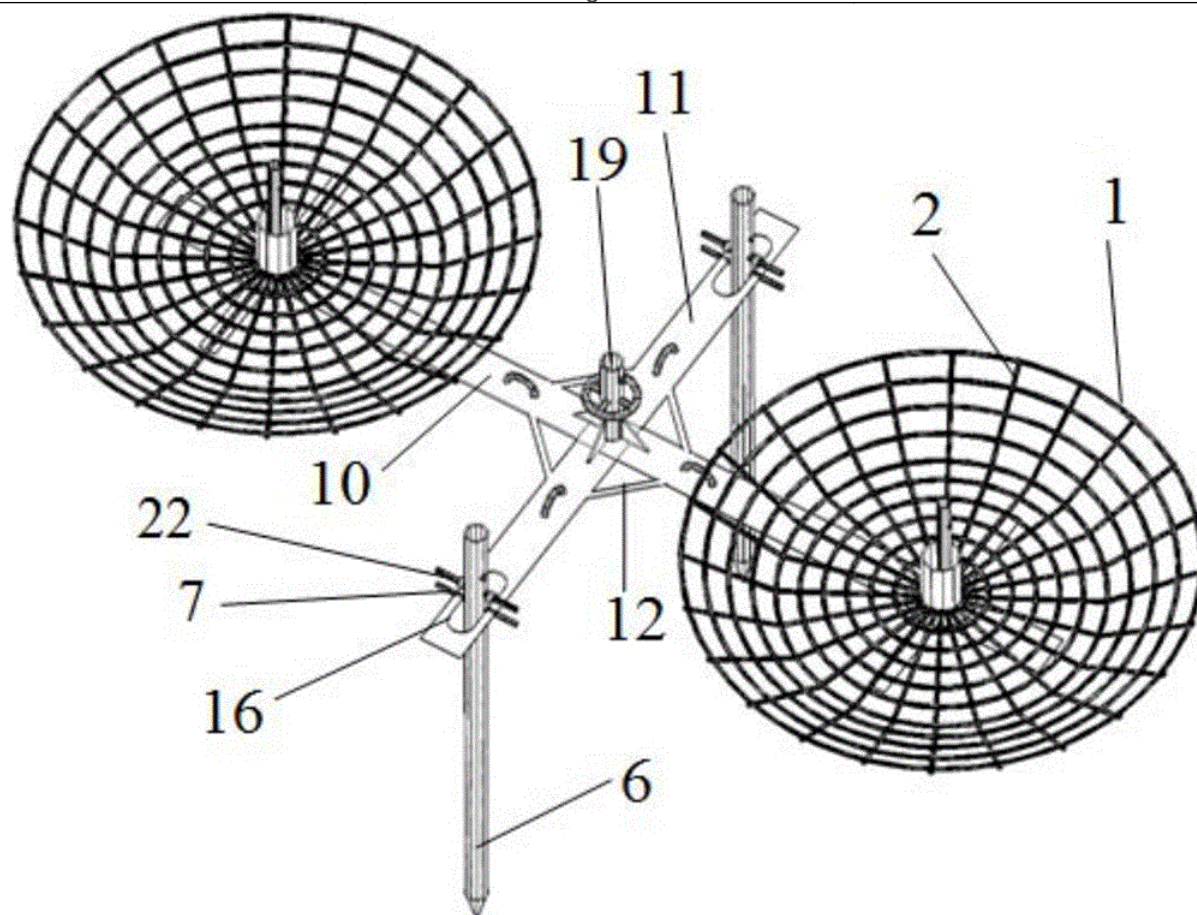
ANHUI UNIVERSITY OF SCIENCE & TECHNOLOGY

Family 92/100 - FAMPAT - ©Questel

Title

(CN106386624)

Net cage **anchoring** foundation with two umbrella-shaped trays and two steel piles and construction method thereof**Images**



Publication data including kind & date

CN106386624

A 2017-02-15 CN106386624



Abstract

(CN106386624)

The invention discloses a net cage **anchoring** foundation with two umbrella-shaped trays and two steel piles and a construction method thereof. The net cage **anchoring** foundation comprises two steel piles, a connecting bracket and two umbrella-shaped trays, wherein a supporting **rod** and a fastening hole are formed in a part, close to an upper part, of each steel pile; a support is arranged at the center of an upper end face of the connecting bracket; positioning columns are arranged on the connecting bracket on two sides of the support; the support is further provided with a mooring hole and a mooring ring; mounting holes, which are distributed on two sides of a connecting line of the positioning columns, are further formed in the connecting bracket; an upward sleeve is arranged at the center of the bottom of each umbrella-shaped tray; when the net cage **anchoring** foundation works, the mounting holes sleeve the two steel piles and the lower ends of the two steel piles are pressed onto the supporting rods and are fastened; the mooring hole or the mooring ring of the support is tied and fixed with one end of an anchor chain; the two umbrella-shaped trays sleeve the positioning columns respectively through sleeves to form the **anchoring** foundation; the **anchoring** foundation sinks onto a seabed and crushed stone bags are put into openings of the umbrella-shaped trays; and the crushed stone bags press the umbrella-shaped trays to form the net cage **anchoring** foundation. The **anchoring** foundation provided by the invention is simple in structure, great in whole rigidity and relatively wide in applicable range and can provide a relatively great mooring force.

Inventors

LIU JINLONG

LIU JIEQUN

Latest standardized assignees - inventors removed

HEFEI UNIVERSITY OF TECHNOLOGY

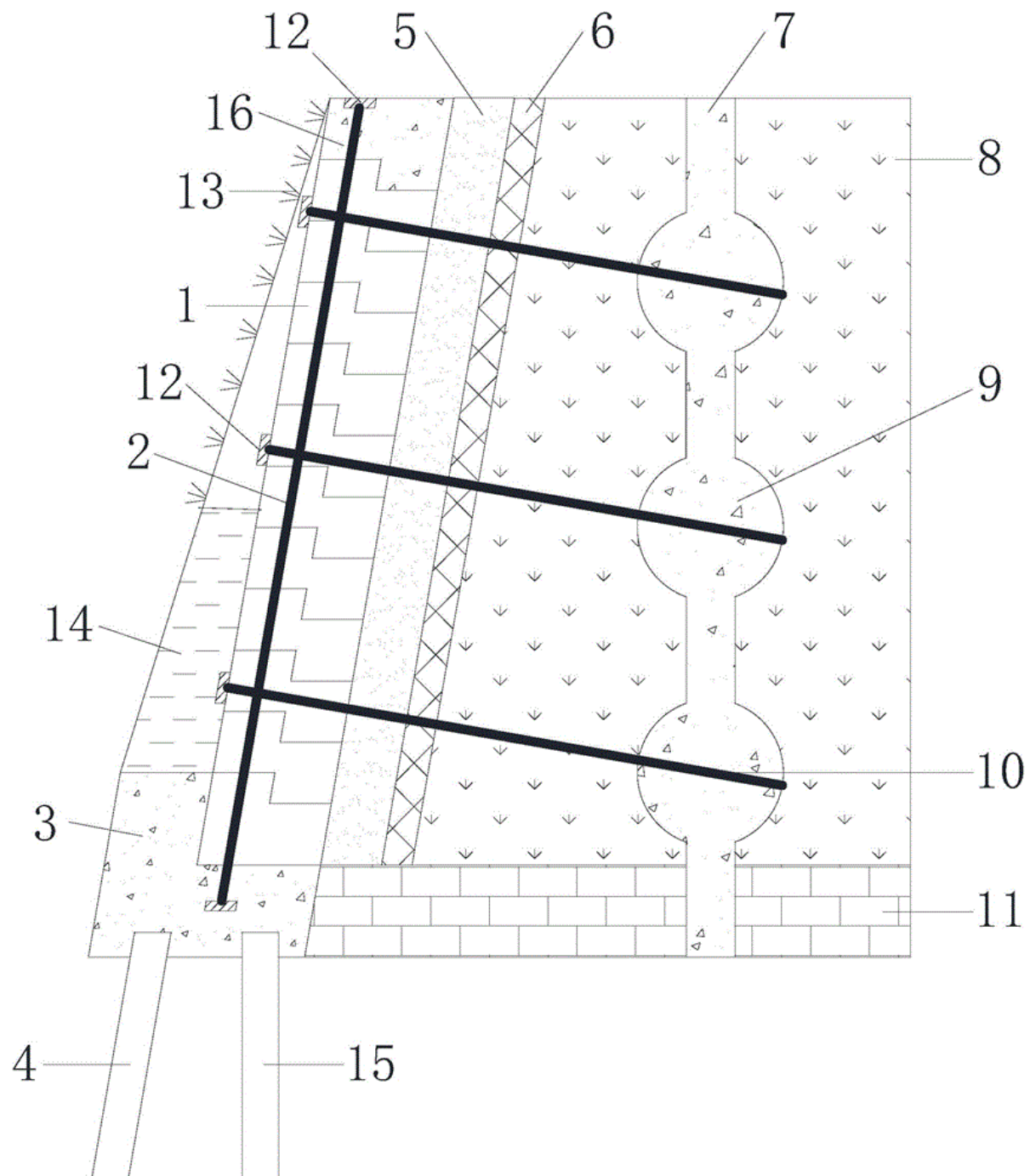
Family 93/100 - FAMPAT - ©Questel

Title

(CN104878719)

Mutually-embedded reinforced ecological retaining wall construction method

Images



Publication data including kind & date

CN104878719	B	2016-08-24	CN104878719B
CN104878719	A	2015-09-02	CN104878719



Abstract

(CN104878719)

The invention relates to a mutually-embedded reinforced ecological retaining wall construction method. The mutually-embedded reinforced ecological retaining wall construction method comprises the steps of firstly removing the damaged original bank and foundation, thereafter simultaneously constructing foundation piles, digging away part of wall, filling soil, then simultaneously performing reinforced concrete foundation construction and net arrangement at the front of the wall, embedding anchor heads into the reinforced concrete foundation, performing mutually-embedded masonry construction on the reinforced concrete foundation to form a retaining wall cone, threading out diagonal **tie** bars from reserved holes in mutually-embedded masonries when each masonry is placed, immediately performing construction of a concrete cap after the mutually-embedded masonries reach design height, simultaneously arranging anchor heads in the concrete cap, finally

anchoring the diagonal **tie** bars in the concrete cap to complete the vertical **anchoring** work of the retaining wall, simultaneously performing drainage layer and **cement** jet grouting pile construction, forming expand heads according to predetermined depth, performing horizontal drilling in the mutually-embedded masonry retaining wall to form anchor **rod** holes until the drilling depth reaches the positions of the expand heads, then inserting anchor rods in the drilled holes, and performing **anchoring** by grounding to complete horizontal anchor **rod** construction.

Inventors

WANG XINQUAN

Latest standardized assignees - inventors removed

HANGZHOU JIANGRUN TECHNOLOGY

Family 94/100 - FAMPAT - ©Questel

Title

(CN201627200U)

Blockage-slurry strengthening earth anchor

Publication data including kind & date

CN201627200 U 2010-11-10 CN201627200U

**Abstract**

(CN201627200)

The utility model discloses a blockage-slurry strengthening earth anchor. The earth anchor comprises an anchor **rod**; the anchor **rod** comprises a free section and an **anchoring** section; the **anchoring** section of the anchor **rod** is provided with spinous rib bunches which are arranged equidistantly; the spinous rib bunches are uniformly distributed along the circumference of the cross section of the **anchoring** section of the anchor **rod**; equidistant positioning rings are also fixed on the **anchoring** section of the anchor **rod**; the anchor **rod** penetrates the centers of the positioning rings; a slurry-blocking inflation plug is sleeved at the boundary of the free section and the **anchoring** section of the anchor **rod**; a secondary grouting pipe, a primary grouting pipe and an inflation pipe penetrate the slurry-blocking inflation plug; the secondary grouting pipe is positioned at the upper ends of the positioning rings; and the primary grouting pipe is positioned at the right lower part of the anchor **rod** in the positioning rings. The utility model improves the constitution of a reinforcing steel bar on the **anchoring** section of a pull **rod**, and increases the contact area of reinforcing steel bars of the **anchoring** section; and by conducting secondary grouting during grouting and by designing the inflatable slurry-blocking device, the utility model ensures grouting pressure and solve the problem of deep hole slurry blockage; and the construction is easier, simpler and more efficient.

Inventors

WANG XIANMAO

ZHAO YANKAI

TAO GUANSI

Latest standardized assignees - inventors removed

001 ENGINEERING

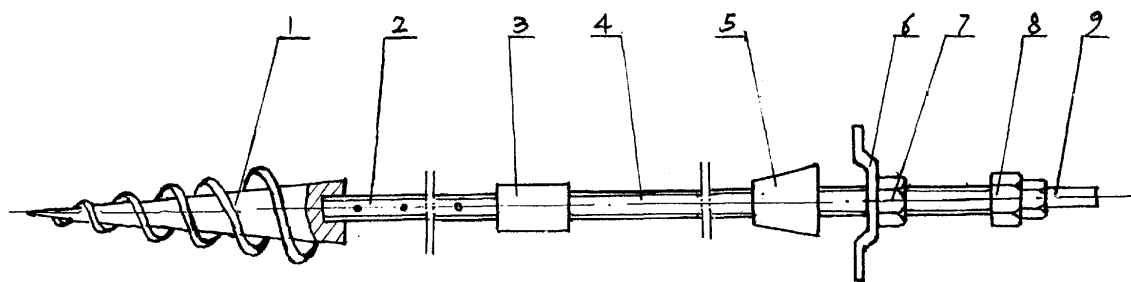
QINGJIAN

Family 95/100 - FAMPAT - ©Questel

Title

(CN2185325U)

Self-drilling slurry filling type **anchoring**-bolt system**Images**

**Publication data including kind & date**

CN2185325

Y

1994-12-14

CN2185325U

**Abstract**

(CN2185325)

The utility model relates to a self-drilling slurry filling type anchoring-bolt system. The utility model is characterized in that the front end of an anchoring-bolt in an anchoring section is connected with a drill head, and a plug-hole device is arranged between the anchoring-bolt in the anchoring section and the anchoring-bolt in a free section. The anchoring-bolts in the various sections are connected with connectors, and the end of the anchoring-bolt in the free section is provided with a resilient tie plate locked with screw nuts. The utility model has the advantages that hole-forming, slurry filling and tensioning of the anchoring-bolt system are completed once, structure is simple, operation is convenient, construction technology process is simplified, construction speed is accelerated, engineering cost is reduced, and engineering quality is improved. The utility model is suitable for various operating conditions.

Inventors

LI WEIWEN

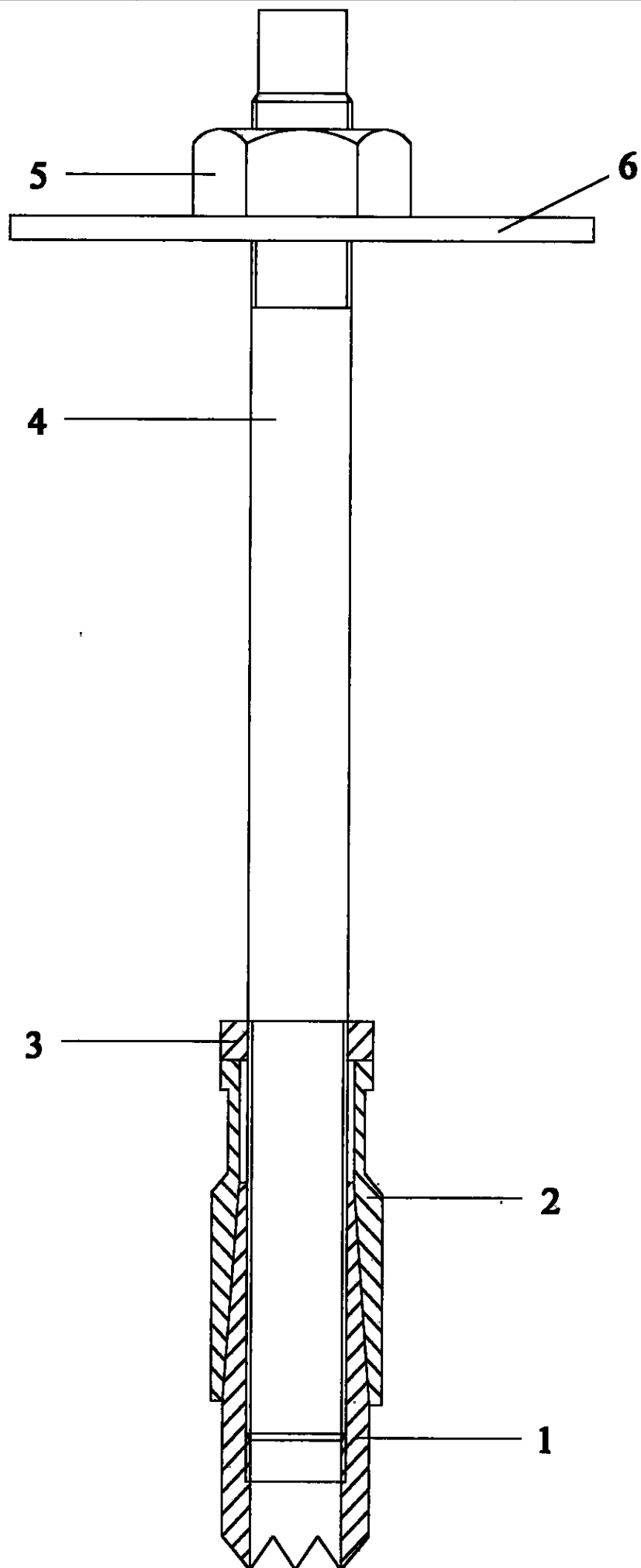
Family 96/100 - FAMPAT - ©Questel

Title

(CN102808635)

Expanding shell type inner anchor head pre-stressed anchor rod and installation using method thereof

Images



Publication data including kind & date

CN102808635	B	2015-10-07	CN102808635B
CN102808635	A	2012-12-05	CN102808635

**Abstract**

(CN102808635)

The invention discloses an expanding shell type inner anchor head pre-stressed anchor **rod** and an installation using method thereof and belongs to the technical field of rock soil **anchoring** engineering. The pre-stressed anchor **rod** comprises an expanding shell, a conical core, an installation nut, a **rod** body, an installation casing, a cushion plate and a locking nut. By the invention, a pre-stress value of the pre-stressed anchor **rod** can be remarkably increased, so the strength of the **rod** body is fully realized, an inner **anchoring** section of the pre-stressed anchor **rod** can be effectively shortened, and the effective **anchoring** range of the pre-stressed anchor **rod** is expanded. The invention also discloses the installation using method of the pre-stressed anchor **rod**. The pre-stressed anchor **rod** can be mechanically installed or manually installed. When **anchoring** support is performed by using the expanding shell type inner anchor head pre-stressed anchor **rod**, the dimensions of the conical core and the expanding shell can be designed according to the actual surrounding rock conditions. A design method provides economical, safe and scientific basis for design of the dimension of each part of the inner **anchoring** section, which meets actual support requirements.

Inventors

ZHOU HUI

XU RONGCHAO

ZHANG CHUANQING

LIU JIGUANG

Latest standardized assignees - inventors removed

INSTITUTE OF ROCK & SOIL MECHANICS CHINESE ACADEMY OF SCIENCES

Family 97/100 - FAMPAT - ©Questel

Title

(EP1273709)

Railway rail fastening assembly

Images

EP0996789	A1	2000-05-03	EP-996789
AU8229398	A	1999-02-10	AU9882293
WO99/04094	A1	1999-01-28	WO9904094

**Abstract**

(EP1273709)

A railway rail fastening assembly, for fastening a railway rail to an underlying foundation comprises a resilient railway rail fastening clip (20) having thereon stop means (21c), for engaging cooperating means provided on a rail fastening clip **anchoring** device (400), whereby overdriving of the clip (20) into the said **anchoring** device (400) is prevented, the stop means (21c) comprising one of an abutment surface and a projection and the said cooperating means comprising the other of the abutment surface and the projection.

Inventors

MARSHALL BARRY

CONROY BRIAN GEORGE

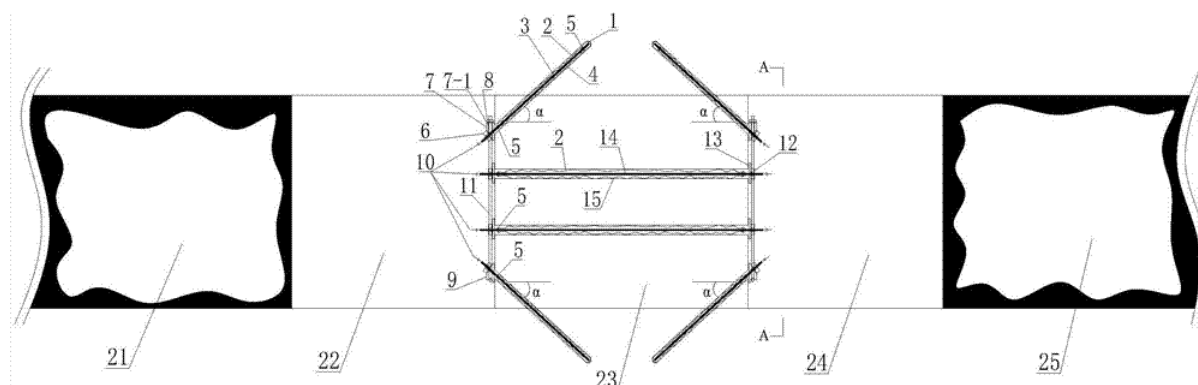
Latest standardized assignees - inventors removed

PANDROL

Family 98/100 - FAMPAT - ©Questel

Title

(CN106050282)

Anchoring structure and reinforcing method of narrow coal pillar of gob-side entry retaining**Images****Publication data including kind & date**

CN106050282	B	2018-08-03	CN106050282B
CN106050282	A	2016-10-26	CN106050282

**Abstract**

(CN106050282)

The invention relates to an **anchoring** structure and reinforcing method of a narrow coal pillar of gob-side entry retaining. The **anchoring** structure comprises obliquely-pulling **anchoring** systems and gob-side entry retaining opposite-position **anchoring** systems, which are arranged in the length direction of the narrow coal pillar at intervals, and horizontal side-limiting reinforcing devices are used for further fastening the obliquely-pulling **anchoring** systems. The reinforcing method comprises the following steps of firstly drilling horizontal drill holes and top and bottom plate inclined drill holes in the narrow coal pillar in an upper-segment mining roadway, mounting the obliquely-pulling **anchoring** systems and the gob-side entry retaining opposite-position **anchoring** systems including grout leakage preventing bags, horizontal and inclined grouting anchor rods and the like in respective drill holes, mounting the horizontal side-limiting reinforcing systems at positions corresponding to the obliquely-pulling **anchoring** systems on two sides of the narrow coal pillar, then applying prestressing force to nuts on each system, and finally performing grouting on the anchor rods through a grouting machine. According to the **anchoring** structure disclosed by the invention, the safety and the stability of the narrow coal pillar gob-side entry retaining are effectively guaranteed, roadway deformation is effectively reduced, the plastic zone of the coal pillar is reduced, the repair cost of the roadway can be reduced, the structural design is reasonable and simple, the construction

is convenient, the reinforcing effect is obvious, and the coal recovery ratio is increased.

Inventors

LI ANG

Latest standardized assignees - inventors removed

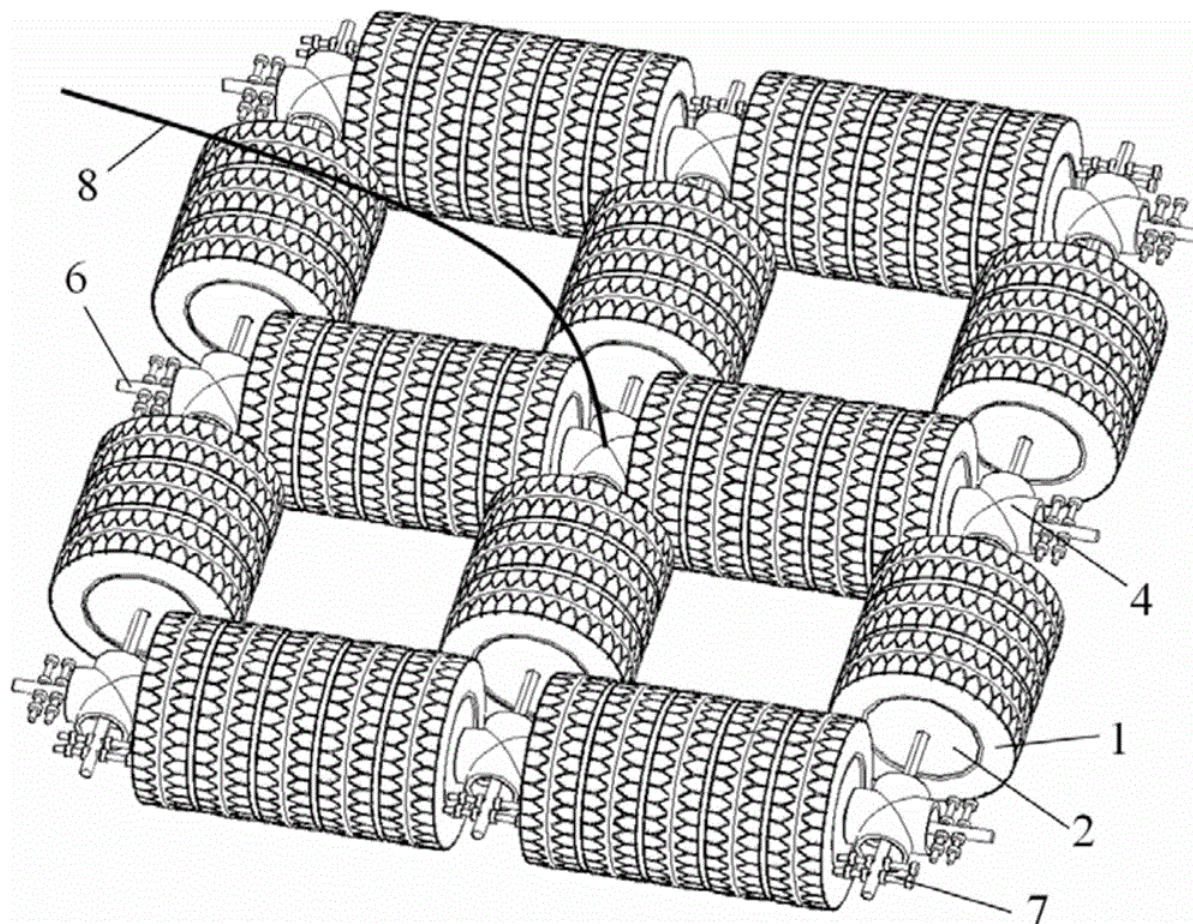
XI AN UNIVERSITY OF SCIENCE & TECHNOLOGY

Family 99/100 - FAMPAT - ©Questel

Title

(CN106614202)

Waste tire-formed quartered-square-shaped net cage **anchoring** base and construction method for same

Images**Publication data including kind & date**

[CN106614202](#)

A

2017-05-10

CN106614202

**Abstract**

(CN106614202)

The invention discloses a waste tire-formed quartered-square-shaped net cage **anchoring** base and a construction method for the same. The waste tire-formed quartered-square-shaped net cage **anchoring** base comprises waste tire balancing blocks and dual-direction casing pipes, each center of which is provided with a preservation hole, and further comprises a plurality of supporting rods, wherein each supporting **rod** is covered with a stripped combined body formed by the waste tire balancing blocks and the dual-direction casing pipes at intervals; three-rows of transverse stripped combined bodies and three-rows of longitudinal stripped combined bodies are perpendicular to each other to form a quartered-square-shaped combined body; perpendicular intersection parts of each supporting rods are connected via the dual-direction casing pipes; the end part of each supporting **rod** is provided with a connection member; the dual-direction casing pipes in the center of the quartered-square-shaped combined body is tied via an anchor chain; the tied quartered-square-shaped combined body is placed into the sea on the whole and laid on a seabed to finally form a net cage **anchoring** base; and with steps of assembling the waste tire balancing blocks, sinking the **anchoring** base into the sea and correcting and verifying an **anchoring** base posture, construction is completed. The balancing blocks are manufactured via the waste tires, so

economic and practical properties can be achieved; and the quartered-shaped combined body has great overall weight and rigidity, so great **anchoring** force can be provided.

Inventors

LIU JIEQUN

LIU JINLONG

Latest standardized assignees - inventors removed

HEFEI UNIVERSITY OF TECHNOLOGY

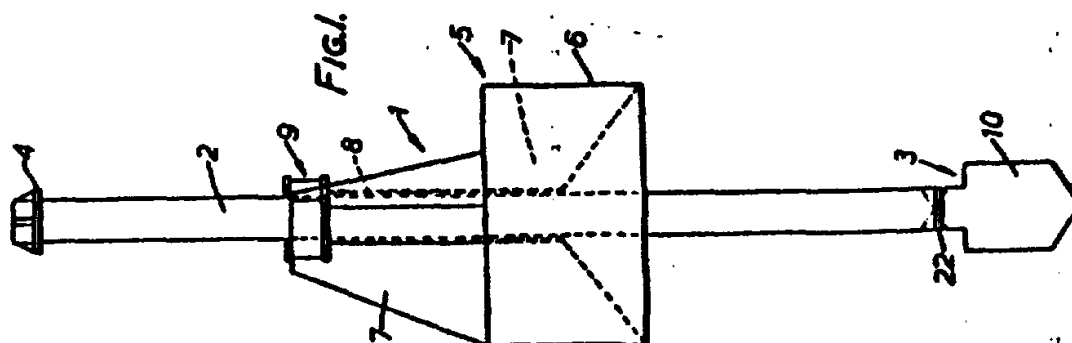
Family 100/100 - FAMPAT - ©Questel

Title

(EP---4150)

Improvements in and relating to an embeddable anchor and to a method of embedding such anchors.

Images



Publication data including kind & date

NO152202	C	1985-08-21	NO-152202
NO152202	B	1985-05-13	NO-152202
FR2460837	B1	1984-04-06	FR2460837
CA1145204	A	1983-04-26	CA1145204
GB2043141	B	1983-01-26	GB2043141
AU525572	B2	1982-11-11	AU-525572
FR2460837	A1	1981-01-30	FR2460837
DE2952973	A1	1980-11-20	DE2952973
GB2043141	A	1980-10-01	GB2043141
NL7915020	A	1980-05-30	NL7915020
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Abstract

(EP0004150)

An embeddment anchor (1) comprises a **tie rod** (2) on which is mounted, at one end, thereof, **anchoring** means (3) which may be of fluke-like form. Also mounted upon the **tie rod** is a thrust member (5) which, in one embodiment, is movable along part of the length of the **tie rod** (2). The **anchoring** means (3) are designed to provide a substantial proportion of the resistance of the anchor (1), when embedded, to uplift forces whilst the thrust member (5) provides a substantial proportion of the resistance of the anchor (1) when embedded, to lateral forces. The thrust member (5) may be so formed that it supports the **tie rod** (2) whilst the latter is being embedded.

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