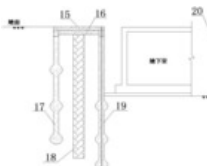
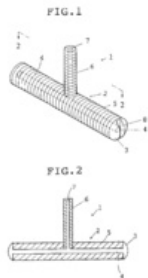
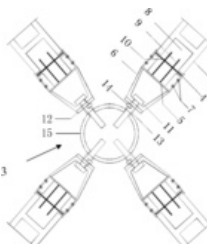
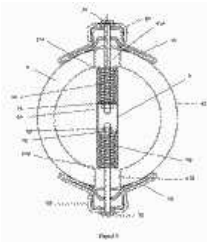
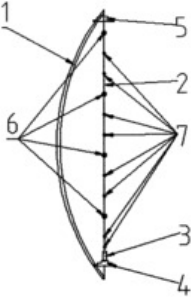
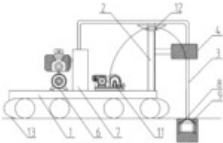
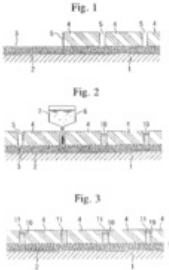
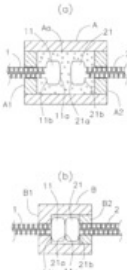
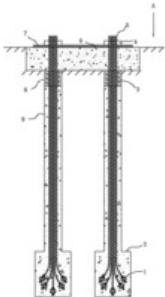
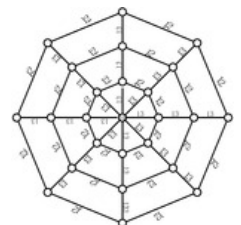
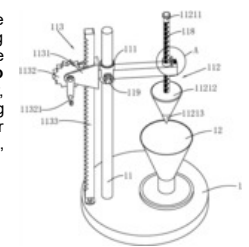
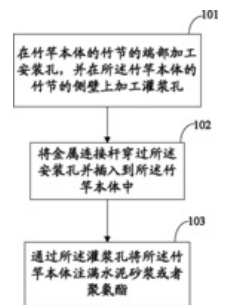
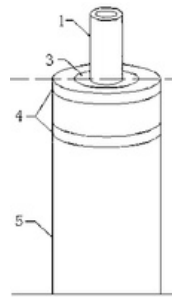


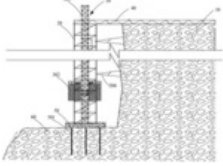
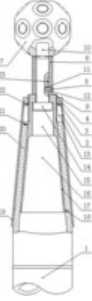
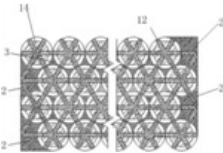
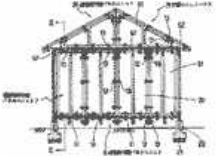
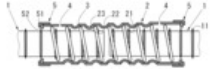
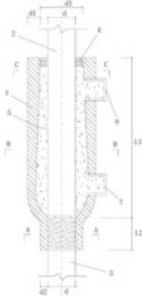
1267 results for ((guadua or bamboo) and (joint? or joinery? or foundation? or connect+)) and (rod or bar) and thread+ and mortar)/TI/AB/IW/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX - Collection: FAMPAT

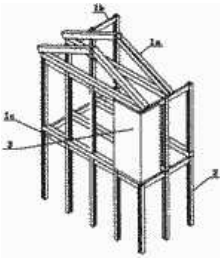
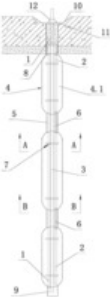
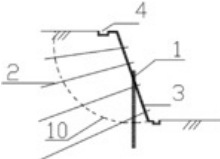
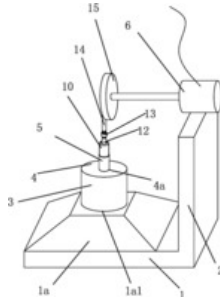
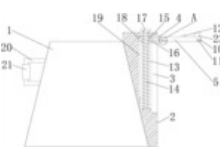
#	 Title	Publication number	1st app. date	Applicant/Assignee	
1.	Portal frame type bamboo joint mortar pile enclosure structure and construction method thereof	CN103711130	2013-12-17	SHANGHAI GEOTECHNICAL INVESTIGATIONS & DESIGN INSTITUTE*	100 %
The invention discloses a portal frame type bamboo joint mortar pile enclosure structure and a construction method thereof. The enclosure structure is positioned in a certain distance away from the outer side of an excavation line of a foundation pit, wherein the enclosure structure at least comprises two rows of enclosure piles which are arranged in parallel; at least one row of enclosure piles are formed by bamboo joint mortar piles; the bamboo joint mortar piles are formed by upright pile bodies and steel tubes or steel bar cages which are coaxially arranged in the pile bodies; each pile body is at least provided with a spherical bamboo joint expansion head; and the pile bodies, the steel tubes or the steel bar cages and the spherical bamboo joint expansion head are formed as an integrated structure. The portal frame type bamboo joint mortar pile enclosure structure has the advantages that due to the adoption of the portal frame type enclosure structure of the bamboo joint mortar pile, deformation of the foundation pit can be controlled; the enclosure system is simple in structure, short in construction period, high in stability, low in manufacture cost, convenient to popularize and widely applicable to foundation pit engineering with a depth less than 12m. 					
2.	Connector , method for connecting structural members with connector and connection structure between structural members.	CA2097119	1993-04-14	HOME* HOUMU	99 %
A connector (1j) is inserted into connecting holes (26c) arranged at abutment surfaces between structural members (30;31), adhesive agent is fed from one end of a hollow part (4) of the connector (1j) or an opening part of a branch pipe (6h) of the connector (1j) and the clearances between the surface of the connector (1j) and circumferential walls of the connecting holes (26c) are filled with adhesive agent flowed out of the other end opening at the hollow part (4) of the connector (1j) so as to connect both structural members (39;31) in rigid form. <IMAGE> 					
3.	Bolt-sphere connecting node of bamboo structure	CN202023258	2011-03-30	CIVIL AVIATION UNIVERSITY OF CHINA*	99 %
The utility model relates to a bolt-sphere connecting node of a bamboo structure, which comprises a plurality of bamboo poles, a plurality of bamboo pole connecting pieces and a bolt-sphere node, wherein the two ends of the bamboo poles are respectively provided with the bamboo pole connecting pieces, and the bamboo pole connecting pieces are used for connecting the bamboo poles or the bamboo poles and a foundation through the bolt-sphere node. The bolt-sphere connecting node of the bamboo structure has the following advantages that: 1) the bending moment and shearing force of the connecting node of the bamboo structure can be released by a hinged method, and the conventional finite element software can be utilized to accurately establish a computational model for analysis; 2) the bamboo poles are used as main force-bearing components, and concrete and steel materials are utilized to strengthen the end parts of the bamboo poles, so that bamboo components fail in advance because the end parts are damaged, and thus the utilization rate of the materials is improved; 3) the construction is convenient, and the application range is wide; 4) the end parts of the bamboo components are filled with the concrete, and steel hoops and stirrups are arranged outside the bamboo components, so the reliability of the end parts of the components is enhanced; and 5) the environment is protected, and the economy is high. 					
4.	Yield composite bamboo rib anchoring and shotcreting supporting foundation pit and construction method thereof	CN106939607	2017-03-28	XIANGTAN UNIVERSITY*	99 %
The invention discloses a yield composite bamboo rib anchoring and shotcreting supporting foundation pit and a construction method thereof. The yield composite bamboo rib anchoring and shotcreting supporting foundation pit comprises a foundation pit, a bamboo rib anchor rod, a yield device and a bamboo filament spraying concrete layer with bamboo filaments mixed. The bamboo rib anchor rod is embedded in a setting-out hole in the side wall of the foundation pit. One end of the yield device is connected with the bamboo rib anchor rod, and the other end of the yield device stretches out of the side wall of the foundation pit and is fixed. The bamboo filament spraying concrete layer is laid on the side wall of the foundation pit, and the end portion of the yield device is embedded in the side wall of the foundation pit. The yield composite bamboo rib anchoring and shotcreting supporting foundation pit and the construction method thereof have the beneficial effects that the yield device can conduct segmented step-by-step yielding, an anchoring and shotcreting supporting system is effectively protected, and safety of the foundation pit is ensured; the diameter of the anchor rod can be flexibly selected, and the tensile strength of the anchor rod is adjusted; the source of bamboo materials is wide, the bamboo materials are regenerated, and the bamboo rib anchor rod is easy to manufacture and convenient to construct; and the investment can be saved on the premise that stability of the foundation pit engineering is met. 					
5.	Structural connector for bamboo	WO201203453	2010-09-13	UNIVERSITY COSTA RICA*	99 %
A structural connection device for structural elements in the form of a solid or closed section bar and of substantially circular form, typically bamboo, is characterized in that it is composed of two plates provided with various orifices or grooves for affixing additional structural elements placed in a diametrically opposing position on the outer surface of said bar, said plates being joined together by means of one or more threaded bars or bolts with the respective washers and nuts thereof, which diametrically traverse said bar through one or more holes previously made in said bar, pressing said plates against the surface of said bar. Said bolts in turn incorporate springs or a flexible connector for absorbing the dimensional variation in bamboo. 					
6.	Bamboo structured connecting joint	CN202117176	2011-06-03	CIVIL AVIATION UNIVERSITY OF CHINA*	99 %
The utility model discloses a bamboo structured connecting joint, which comprises a plurality of bamboo poles, a plurality of bamboo pole connectors, a plurality of bamboo pole connecting joints, a plurality of bolts and a plurality of nuts. Two bamboo pole connectors are mounted at two ends of each bamboo pole respectively, and the bamboo poles with the bamboo pole connectors are mutually connected through the bamboo pole connecting joints, the bolts and the nuts. Each bamboo pole connector comprises a steel hoop, stirrups, a bamboo pole connecting end, a concrete filled core, a plurality of embedded steel bars, an end plate and a crossed reinforcing rib. The end of each bamboo pole is structurally reinforced by means of concrete and steel, material performances of bamboos, concrete and steel are fully used, and the bamboo structured connecting joint is convenient in construction, reliable in connection and high in safety.					

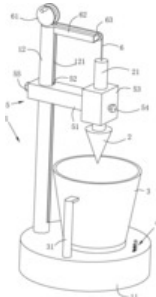
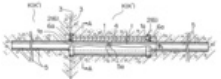
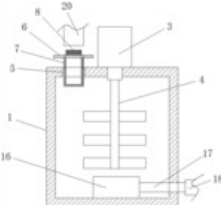
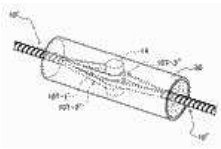
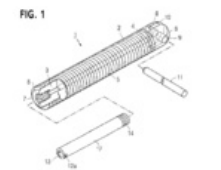
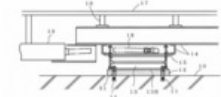
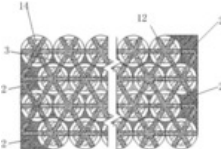
7.	Mortar joint thickness bow and embedded steel bar and mortar joint thickness synchronous calibration method for tie bar	CN104234440	2014-09-19	WANG WEIXIAO	99 %
The invention discloses a mortar joint thickness bow and an embedded steel bar and mortar joint thickness synchronous calibration method for a tie bar. The mortar joint thickness bow comprises a bow arm, a bow string, an ink fountain, a plurality of big ink balls, a plurality of small ink balls, an upper staff gage and a lower staff gage, wherein the bow arm is of a long-strip elastic body, and the bow string is of a line-shaped body; the two ends of the bow arm are connected with the bow string, so as to form a bow shape; the ink fountain, the big ink balls, the small ink balls and the staff gages are arranged on the bow string. The embedded steel bar and mortar joint thickness synchronous calibration method for the tie bar comprises the steps: (1) setting embedded steel bar points on the bow string of the mortar joint thickness bow, and dividing mortar joint thickness points between every two embedded steel bar points; (2) preparing the ink balls of different sizes from cotton balls or sponge, and fixedly arranging the ink balls at the embedded steel bar points and the mortar joint thickness points respectively; (3) inking the ink balls, and printing required points to corresponding locations of the surfaces of corresponding members through flicking; (4) distinguishing the embedded steel bar points from the mortar joint thickness points at point flick-printed locations according to the sizes of the ink balls. According to the method, two working procedures, namely embedded steel bar point calibrating and mortar joint thickness point dividing, are integrated, so that the work efficiency is increased and the accuracy of calibration is improved.					
					
8.	Pile foundation protect a section of thick bamboo bury underground with stake dowelling jig advance all-in-one	CN204530704	2015-03-18	CHONGQING RESIDENTIAL CONSTRUCTION*	99 %
The utility model relates to a pile foundation protect a section of thick bamboo bury underground with stake dowelling jig advance all-in-one, it buries system, pipe lift system underground to include the system of bearing, the system of creeping into, protect a section of thick bamboo, the system of creeping into includes pneumatics unit, drilling rod device, revolving gear, drill bit, protect a section of thick bamboo and bury the system underground including protecting a section of thick bamboo, protecting a connector, protect a section of thick bamboo including inner wall, outer wall, protect a connector pass through the hoop screw thread with the said section of thick bamboo that protects links to each other, it buries the drilling rod setting underground and is in to protect a section of thick bamboo said drilling drilling rod with protect between the connector, protect lower part that a section of thick bamboo buried the drilling rod underground with it connects to protect a connector, it is double-walled hollow structure to protect a section of thick bamboo, it is both arms hollow structure to protect a connector, pipe lift system includes the hoist engine, loads the pipe that has reinforced concrete, the hoist engine pass through wire rope with said pipe connection. The utility model provides a pile foundation protect a section of thick bamboo bury underground with stake dowelling jig advance all-in-one has solved the drilling of all kinds of soft geology pile foundations and has had the risk in the hole of collapsing and protect the technical problem that a section of thick bamboo was buried the overlength underground, can't be extracted extravagant material.					
					
9.	Method for constructing block paving	WO9713923	1996-10-14	DAISEI DORO KAGI NICHIREKI NICHIREKI* PETROCHEMICALS REKI NICHE TAISEI ROTEC*	99 %
The present invention has an object to provide a method of constructing block pavement, which solves the conventional problems, is applicable not only to landscape pavement of a sidewalk or an open space, but also to an ordinary roadway having heavy traffic of large vehicles, and makes available block pavement provided with a beautiful appearance and an excellent durability. The present invention provides a method of constructing block pavement, which comprises the steps of providing a tack coat layer by spraying an asphalt emulsion on a base of a road or the like; then placing an aggregate on the upper surface thereof to form an aggregate layer; arranging a plurality of paving blocks on the upper surface thereof while keeping the upper surfaces of the blocks in flush; then pouring uniformly a cement asphalt mortar from joint spaces formed between the paving blocks to fill the void of the aggregate layer to form a buffer support layer; and filling also the joint spaces uniformly with the cement asphalt mortar or a pouring joint filler material other than the cement asphalt mortar, thereby securing the paving blocks integrally on the base. <IMAGE>					
					
10.	Reinforcing-bar connection method, reinforcing-bar connector, and connecting reinforcing-bar and method for manufacturing the same	JP2014084633	2012-10-23	D B S*	99 %
PROBLEM TO BE SOLVED: To provide a reinforcing-bar connection method and a connector allowing the reinforcing-bar connection method to be achieved, and to provide a connecting reinforcing-bar using the connector and a method for manufacturing the same.SOLUTION: In a reinforcing-bar connection method, large diameter parts 11, 21 are configured at the tips of reinforcing-bars 1, 2 to be connected with each other, respectively, and the large diameter parts are fixed. A reinforcing-bar connector includes: a cylindrical sleeve body A having an inner diameter allowing loose insertion of the large diameter part; and seal members A1, A2 each for closing a clearance between each of both end openings of the sleeve body and each of the reinforcing bars at the opening. At least one grout material injection hole is provided in a part of the sleeve body. A connecting reinforcing-bar is provided with large-diameter parts at both ends thereof, and a first sleeve body is attached to one end of the reinforcing bar while a second sleeve body is attached to the other end of the reinforcing bar. In a method for manufacturing the connecting reinforcing-bar, any of the first sleeve body with a female screw part directed to the tip of the reinforcing-bar and the second sleeve body with a male screw part directed to the tip of the reinforcing-bar is selectively attached to each of both ends of the reinforcing-bar and the large diameter parts are configured at both ends of the reinforcing-bar.					
					
11.	Power transmission line soil layer steel strand pre-stress expanded-bottom anchor rod foundation	CN103806462	2014-03-13	BEIJING HUADIAN XINNENG CONSULTATION*	99 %
A power transmission line soil layer steel strand pre-stress expanded-bottom anchor rod foundation belongs to technical field of foundations for uprights, towers or chimneys in buildings, and relates to an improvement to the power transmission line soil layer steel strand pre-stress expanded-bottom anchor rod foundation. The invention provides the power transmission line soil layer steel strand pre-stress expanded-bottom anchor rod foundation which is stable in base and high in load bearing capability, and can be used in various geological environments. A concrete bearing platform is arranged below a column foot plate at the column foot of a power transmission tower; a plurality of straight holes are evenly distributed below the edge of the concrete bearing platform, expanded-bottom holes are formed in the bottoms of the straight holes, steel strands are arranged in the straight holes, the bottoms of the steel strands are provided with anchoring parts, and the anchoring parts are arranged in the expanded-bottom holes; concrete is poured into the straight holes, the steel strands penetrate through the concrete bearing platform and the column foot plate, and the upper ends of the steel strands are fixed above the column foot plate through a positioning anchor plate; a buffering section is arranged between the upper parts inside the straight holes and the bottom surface of the concrete bearing platform, and the buffering section is placed at the tops of the straight holes and is made of a compressible medium.					
					
12.	Bamboo-joint type high-strength anchor rod	CN102400699	2011-11-18	SHANDONG UNIVERSITY OF SCIENCE & TECHNOLOGY*	99 %
The invention discloses a bamboo-joint type high-strength anchor rod, comprising a full-length anchoring type anchor rod body, a pallet and a nut, wherein the anchor rod body is provided with a plurality of antiskid anchor joints. The antiskid anchor joints can adopt multiple modes, for example, all the antiskid anchor joints are similar to conical bodies; the conical body is formed by 3-6 conical body subblocks which are evenly distributed on the circumference of the anchor rod body, and a gap is left between a pair of adjacent conical body subblocks; and all the conical body subblocks are welded or bonded on the anchor rod body. The bamboo-joint type high-strength anchor rod optimizes the stressed state thereof when being applied on site. The preliminary experiment proves that the use of the antiskid anchor joints not only increases the friction between the anchor rod and mortar, but also increases the friction between an anchoring agent and a rock body, so that the anchoring force of the anchor rod is greatly increased. In the bamboo-joint type high-strength anchor rod, the use is simple, and the reliability and the supporting effect can be obviously improved under the condition that the construction efficiency is not influenced and the cost is not increased a lot.					
					

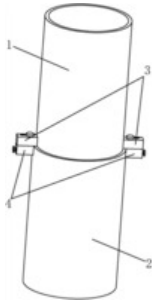
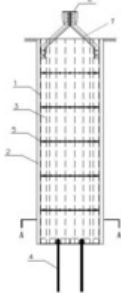
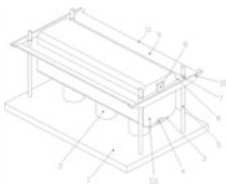
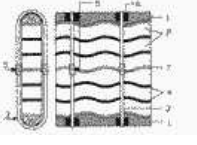
13.	Bamboo-joint type high-strength anchor rod	CN202338349	2011-11-18	SHANDONG UNIVERSITY OF SCIENCE & TECHNOLOGY*	99 %
The utility model discloses a bamboo-joint type high-strength anchor rod, comprising a full-length anchored type anchor rod body, a pallet and a nut, wherein a plurality of antiskid anchor joints are arranged on the anchor rod body. The antiskid anchor joints can adopt multiple modes, for example, all the antiskid anchor joints are approximate to a conical body; the conical body is formed by 3-6 conical body subblocks which are uniformly distributed on the periphery of the anchor rod body; a gap is left between a pair of adjacent conical body subblocks; and all the conical body subblocks are welded or bonded on the anchor rod body. Due to adoption of the bamboo-joint type high-strength anchor rod, the stressed state of the anchor rod in site application is obviously optimized. Preliminary experiment proves that due to use of the antiskid anchor joints, not only is the friction force between the anchor rod and mortar increased, but also the friction force between an anchoring agent and a rock body is increased simultaneously, so that the anchoring force of the anchor rod is greatly increased. The bamboo-joint type high-strength anchor rod has the advantages that the use is simple, and the reliability and the support effect can be obviously improved under the conditions that the construction efficiency is not influenced and the cost is not increased excessively.					
14.	Raw building bamboo and combined raw bamboo	CN102086675	2010-12-30	CENTRAL RESEARCH INSTITUTE OF BUILDING & CONSTRUCTION* CHINA JINGYE ENGINEERING*	99 %
The embodiment of the invention discloses a raw building bamboo which comprises a raw bamboo body, a metal connection rod arranged in the raw bamboo body, and cement mortar or polyurethanes filled into the raw bamboo body. In the raw building bamboo provided by the invention, the inside of the raw bamboo body (the existing raw bamboo) is provided with the metal connection rod, and the inside of the raw bamboo body is filled with the cement mortar or polyurethanes, after the cement mortar or polyurethanes are solidified, each bamboo joint of the raw bamboo body is filled with the cement mortar or polyurethanes, so that the raw bamboo is similar to solid wood, thereby preventing the occurrence of phenomenon that because the strength of the existing raw bamboo is insufficient in the process of application, under the external high strength and pressure, the raw bamboo is easy to squash and then splits off along the direction of a radial bamboo stem. The raw building bamboo provided by the invention improves the strength of the raw bamboo, realizes the application of the raw bamboo in the construction of large-span and high-strength buildings, and improves the application scope of the raw bamboo in buildings. The embodiment of the invention also provides a combined raw bamboo.					
15.	Steel jacket gypsum-type bamboo joint point	CN103255839	2013-05-06	TONGJI UNIVERSITY*	99 %
The invention belongs to the field of structural engineering and relates to a bamboo joint point. The bamboo joint point comprises a bamboo tube, a steel member and gypsum, wherein two ends of the steel member are inserted into the bamboo tube, and high-strength gypsum is filled between the steel member and the bamboo tube. According to the steel jacket gypsum-type bamboo joint point, on the premise that strength and durability are guaranteed, greater plasticity development ability is achieved, and pull-press strength of bamboo wood in the fiber direction is more fully utilized. The steel jacket gypsum-type bamboo joint point can be especially popularized and applied to areas with high requirements for earthquake fortification.					
16.	Method for processing raw building bamboos	CN102086676	2010-12-30	CENTRAL RESEARCH INSTITUTE OF BUILDING & CONSTRUCTION* CHINA JINGYE ENGINEERING*	99 %
The embodiment of the invention discloses a method for processing raw building bamboos, which comprises the following steps: 101) processing an installation hole at an end part of a bamboo joint of a raw bamboo body, and processing a grouting hole on the side wall of the bamboo joint of the raw bamboo body; 102) enabling a metal connection rod to pass through the installation hole, and inserting the metal connection rod into the raw bamboo body; and 103) filling cement mortar or polyurethanes into the raw bamboo body through the grouting hole. The method provided by the embodiment of the invention has the advantages that through inserting the metal connection rod into the raw bamboo body (the existing raw bamboo) and filling cement mortar or polyurethanes into the raw bamboo body, each bamboo joint of the raw bamboo body is filled with cement mortar or polyurethanes, so that the raw bamboo is similar to solid wood, thereby improving the strength of the raw bamboo, realizing the application of the raw bamboo in the construction of large-span and high-strength buildings, and improving the application scope of the raw bamboo in buildings.					
17.	Mortar consistency tester	CN207751830	2017-12-23	SICHUAN YUANFENG CONSTRUCTION PROJECT MANAGEMENT*	99 %
The utility model relates to a mortar consistency tester, comprising a base plate, be equipped with the support on the bottom plate, the cover is equipped with the connecting piece on the support, theend connection that the support was kept away from to the connecting piece has the measuring device who is used for measuring mortar consistency, the measuring device below is equipped with a mortarsection of thick bamboo that is used for depositing the mortar on the bottom plate, still be equipped with the volume of driving dynamic testing of being used for device lifting adjusting device in the removal of vertical direction on a mortar section of thick bamboo on the connecting piece, lifting adjusting device includes the support of fixed connection on the connecting piece, the support internal rotation is connected with the gear, between gear and the support on the bottom plate fixedly connected with and gear engagement's rack, wheel and rack meshes and moves on the rack, the volume oftaking dynamic testing device removes in vertical direction above a mortar section of thick bamboo, when mortar consistency is measured to needs, transmitting gear, the gear produces on the rack andreciprocates, the volume of taking dynamic testing device produces in vertical direction above a mortar section of thick bamboo and removes, realize the fine setting between a measuring device and themortar section of thick bamboo, improve accuracy.					
18.	Raw bamboo and wall for building	CN102108751	2010-12-30	CENTRAL RESEARCH INSTITUTE OF BUILDING & CONSTRUCTION* CHINA JINGYE ENGINEERING*	99 %
The embodiment of the invention discloses raw bamboo for a building, which comprises raw bamboo body, a metal connecting rod, and cement mortar or polyurethane, wherein one end of the metal connecting rod is arranged in the raw bamboo body and the other end of the metal connecting rod is exposed from the raw bamboo body; and the cement mortar or polyurethane is filled in the raw bamboo body. In the raw bamboo for the building, which is provided by the embodiment of the invention, the metal connecting rod is arranged in the raw bamboo body and the cement mortar or polyurethane is filled in the raw bamboo body, so inter-section space of the raw bamboo body is solidly filled and the raw bamboo thus has almost the same structure as solid wood that can prevent the raw bamboo from being broken down and cracking along a radial rod direction under high pressure from the outside in use; meanwhile, the exposure of one end of the metal connecting rod from the raw bamboo body makes the installation of the raw bamboo in building production convenient. The bamboo material for building, which is provided by the invention, improves the strength of raw bamboo, realizes the use the raw bamboo in high-strength building construction and facilitates the installation of the raw bamboo. The embodiment of the invention also provides a wall.					
19.	Double-layer dome structure of space made of bamboo	CN103147532	2013-03-21	SOUTHEAST UNIVERSITY NANJING*	99 %
The invention discloses a double-layer dome structure of a space made of bamboo. The double-layer dome structure comprises an upper-layer netlike bamboo structure, a lower-layer bamboo pull rod system which is arranged below the upper-layer netlike bamboo structure, and vertical support rods which are used for connecting the upper-layer netlike bamboo structure with the lower-layer bamboo pull rod, wherein the upper-layer netlike bamboo structure comprises a central node and at least two circles of annular components which are formed by connection of annular rod pieces end to end, wherein the central node is connected with the node of an annular component in the foremost inner layer through a radial rod piece, and two adjacent circles of annular components are connected through the radial rod piece. The lower-layer bamboo pull rod system comprises at least one annular pull rod system formed by connection of annular pull rods end to end, the annular pull rod systems are correspondingly arranged below the annular components of the upper netlike bamboo structure, the node of each annular pull rod system and the node of the corresponding annular components are connected through the vertical support rods, and the node of each annular pull rod system is connected with the node of the outward circle of annular component through a radial pull rod. According to the double-layer dome structure, the rigidity of an overall structure can be enhanced, and the maintenance and the repairing are simple and convenient.					

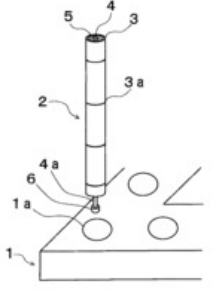
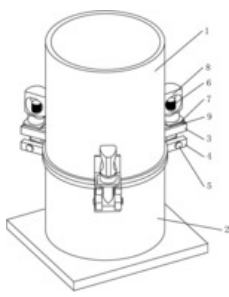
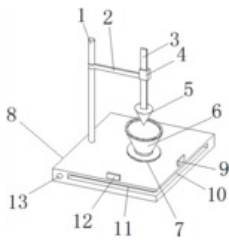
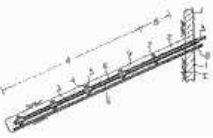


20.	Building material- bamboo reinforced bar concrete and forming process thereof	CN1792988	2005-12-08	OU YANGDONG;QI PENG;QI RONGSHENG	99 %
The invention discloses a new type constructional material- bamboo reinforced concrete and the molding method. It adopts bamboo , and/or bamboo block, and/or complexation thread matching with traditional filling material that includes concrete, sand, gravel, etc. The constructional material would be formed after adding water, whisking and concreting. It has the advantages of low cost, easy to be machined, light weight, etc. It would replace the reinforced concrete partly or fully.					
21.	Lifting device attaching to special-shaped section and mounting method of lifting device	CN104261232	2014-08-14	CHINA CONSTRUCTION EIGHTH ENGINEERING DIVISION*	99 %
The invention relates to a lifting device attaching to a special-shaped section. A lifter is attached to the special-shaped section. The lifting device comprises an attaching foundation and the lifter. The attaching foundation is vertically disposed on the lateral portion of the special-shape section and is in support connection with the special-shaped section. The lifter comprises a tower column and an elevator which moves up and down along the tower column. The tower column is vertically disposed on the lateral portion of the attaching foundation and is in support connection with the attaching foundation . The lifting device has the advantages that the attaching foundation for the lifter is disposed at the special-shape section in a support manner, and accordingly the lifter is applicable to the special-shaped section and used for conveying the special-shaped section.					
					
22.	Former bamboo building element bolt ball nodal connection structure	CN205637173	2016-05-24	SCHMIDT ALEXANDER*	99 %
The utility model relates to a former bamboo building element bolt ball nodal connection structure, including bamboo , outer taper pipe and interior taper pipe, make a plurality of conical tooth pieces at the bamboo tip, this a plurality of conical tooth pieces hold together to cohesion and its inner edge pressure in the outer fringe of the interior taper pipe of its embedded dress, suit in a plurality of conical tooth piece outer fringes outer taper pipe, it is female that the upper end outer fringe meshing suit lock that taper pipe upper end stretches out is stood by as an outsider to interior taper pipe, should lock female tighten the back make in taper pipe and inner edge and the outer fringe of the inseparable crimping of outer taper pipe difference at a plurality of conical tooth pieces including, the taper pipe set up a bolt in stretching out the upper end on the outer taper pipe, the end that this bolt stretches out interior taper pipe is used for the connecting bolt ball. The utility model provides a prior art's defect, improved joint strength, the installation and dismantle of being more convenient for makes building of rack more convenient, maintain more portably, be applicable to that modern former bamboo structure house is built and large -span rack former bamboo structure in space is used in constructing.					
					
23.	Fabricated bamboo wall body, combined wall and preparation method of fabricated bamboo wall body	CN108331199	2018-04-09	NANJING FORESTRY UNIVERSITY*	99 %
The invention discloses a fabricated bamboo wall body, a combined wall and a preparation method of the fabricated bamboo wall body and belongs to the field of bamboo walls. The wall body comprises a plurality of wall units which are arranged side by side, and each wall unit comprises two bamboo bodies which are arranged side by side. The four bamboo bodies of any two adjacent wall units are arranged into a rhombus, and any adjacent two of the four bamboo bodies of any two adjacent wall units are fixedly connected , so that any three adjacent bamboo bodies form a triangular stable structure, the problem that an existing bamboo wall body is poor in lateral stability is solved accordingly, and the wall body stability is greatly improved.					
					
24.	Method of assembling bamboo unit house	JPH07216980	1994-01-31	KUDO INDUSTRY BUSINESS* KUMON KOMUTEN	99 %
PURPOSE:To greatly shorten a construction period and to sharply reduce construction cost by a method wherein number of assembling members is made smaller, strength of the members is increased, coating of wall is not required, and electric wiring work and water supply piping work can be performed simultaneously. CONSTITUTION: Bamboo panel units 6 for floor surface, bamboo panel units 7, 8 for side wall, bamboo panel units 9 for partition, bamboo panel units 10 for ceiling, and bamboo panel units 26 for roof are prepared, and the units 6 are mounted on a foundation concrete and the units 7, 8 and the units 9 are placed and connected together on the units 6. The units 10 are disposed on the units 7, 8 and the units 9 and connected together, while the units 26 are placed on the units 10 so as to be connected thereto.					
					
25.	Mechanical joint of reinforcing bar	JP2009138408	2007-12-06	FUJI BOLT SEISAKUSHO*	99 %
PROBLEM TO BE SOLVED: To heighten the connecting force between a reinforcing bar and a sleeve. SOLUTION: A spiral spring member 3 is interposed between the outer periphery of a deformed reinforcing bar 1 and the inner periphery of the sleeve 2. The outer periphery of the spring member 3 is screwed to a spiral recessed groove 11 provided on the inner periphery of the sleeve 2 to mechanically connect both members to each other. Since the inner periphery of the spring member 3 is opposite to a bamboo joint 11 projected on the deformed reinforcing bar 1, both of them are firmly connected to each other through a grout to exhibit strong resisting force against drawing of the deformed reinforcing bar . COPYRIGHT: (C)2009,JPO&INPIT					
					
26.	Prefabricated assembled is reinforcing bar sleeve grout connecting piece for concrete member	CN204826423	2015-08-02	CHANG'AN UNIVERSITY*	98 %
The utility model discloses a prefabricated assembled is reinforcing bar sleeve grout connecting piece for concrete member, including the seal ring that is used for connecting the metal sleeve that inserts reinforcing bar and embedded bar , lays in the metal sleeve upper end with by filling in metal sleeve and the grout structure of inserting the material of the grout in cavity formation between the reinforcing bar , it is reinforcing bar with ribbing to insert the reinforcing bar , and the link of embedded bar is held for threaded connection , metal sleeve divide into upper portion section of thick bamboo section, middle part connecting cylinder section and lower part section of thick bamboo section, and a grout section of thick bamboo is constituted to upper portion section of thick bamboo section and middle part connecting cylinder section, inserts that the reinforcing bar inserts in the grout section of thick bamboo and it is as an organic whole with grout section of thick bamboo fastening connection through the grout structure, upper portion section of thick bamboo intersegmental part is conical inner chamber, and just its internal diameter is crescent from top to bottom, and lower part section of thick bamboo section is threaded connection and connects , be provided with grout mouth and gas vent in the section of thick bamboo section of upper portion. The utility model has the advantages of simple structure and reasonable design and processing is made and is used easy and simple to handle, excellent in use effect, can accomplish the steel bar connection process portably, fast and connect reliably.					
					

27.	Fast-fabricated bamboo house	CN201128950	2007-12-03	HUNAN UNIVERSITY*	98 %
The utility model relates to a quickly assembled bamboo house that comprises a beam, a column, a composite slab, an external wall surface and a roof waterproof structure; the beam is a bamboo beam made by bonding a bamboo plywood and a binder, and comprises a floor beam, a roof frame beam and a connecting beam; the bamboo column system is made by connecting a bamboo plywood, an angle steel and a bolt, and is used as the framework of the composite wall on the external wall; the bearing component of the composite slab can have a wood framework or a bamboo framework; the external panel is a bamboo plywood; the external panel is a gypsum board, a bamboo plywood or a wood plywood, and can be used as a wall body, a floor or a roof top; the external panel is coated by a metal leather in the corners and the edges according to the times of disassembly and assembly, and is provided with a connecting hole. The bamboo house has the advantages of capability of being disassembled and assembled a plurality of times, repeated use, light weight, convenient and quick construction, security, reliability, wide source of raw materials, no pollution in the production process, excellent seismic performance, corrosion resistance and stability.					
					
28.	Construction device and method for reverse bamboo joint type anti-floating anchor rod	CN104790392	2015-03-01	HUAFENG CONSTRUCTION* NINGBO HONGCHEN CONSTRUCTION* ZHEJIANG HUAZHAN ENGINEERING RESEARCH & DESIGN INSTITUTE*	98 %
The invention discloses a construction device and method for a reverse bamboo joint type anti-floating anchor rod. The device comprises a first grouting tube (1), a second grouting tube (2), anchor rod ribs (3) and a grout bag (4), the first grouting tube (1), the second grouting tube (2) and the anchor rod ribs (3) are all inserted into the grout bag (4), the two ends of the grout bag (4) are bound to the anchor rod ribs (3) through ropes, a plurality of girdles (5) used for binding the grout bag (4) to the anchor rod ribs (3) are arranged on the grout bag (4), and a short grout passing tube (6) is arranged in each girdle (5). The key of the method lies in that the grout bag (4), the first grouting tube (1), the second grouting tube (2), the short grout passing tubes (6) and the anchor rod ribs (3) are bound into a combination through the ropes and the girdles (5), the combination is placed in an anchor rod hole, and a reverse bamboo joint is formed through two-time grouting. The device and method can prevent waste caused by grout spreading into soil outside the hole and can substantially improve anti-floating bearing capacity.					
					
29.	Compound supporting construction of shallow foundation ditch	CN204919568	2015-09-14	HEBEI UNIVERSITY OF TECHNOLOGY*	98 %
The utility model relates to a compound supporting construction of shallow foundation ditch, the miniature stake of inside slip casting high grade cement mortar or pea gravel concretren is vertical perpendicular, and the mao bamboo is strutted, and different angles with domatic one -tenth arrange that the glide plane is passed to inside, and miniature stake, mao bamboo are strutted the end and expose outside adding muscle structure surface course, and there is drainage system at top of slope, the end, add the outmost framework of steel reinforcement that is of muscle structure surface course, inside miniature stake, mao bamboo are strutted to expose to hold and make the node, and through thin bamboo strips used for weaving bound connection one -tenth bamboo reinforcement net, the online shotcrete of bamboo reinforcement forms domatically. The utility model discloses depend on that the mao bamboo is strutted, miniature stake, soil body three's interact constitutes a whole, both can bear vertical bearing capacity, can bear horizontal shear force again, bears the lateral pressure of the peripheral soil body of foundation ditch jointly, effectively stops foundation ditch lateral wall bottom weak soil to flow in to the hole, prevents to cause overall stability to destroy because of producing excessive deformation, the risk that has reduced the slope failure and toppled effectively restricts the foundation ditch deformation, and construction convenience, the environmental protection, the cost is low.					
					
30.	Drugstore is with device of pounding medicine in a mortar	CN206273362	2016-12-13	XING YONGCHAO	98 %
The utility model provides a drugstore is with device of pounding medicine in a mortar, belong to drugstore processing field, the device comprises a pedestal, even there is the mounting panel one side on the base, the section of thick bamboo of pounding medicine in a mortar has been placed in the base up end, pound medicine in a mortar a section of thick bamboo the upper end in the spiro union have the cover, cover center department has the patchhole, the upper end of patchhole has restriction portion, the upper end of mounting panel has linked firmly the rotating electrical machines, pound medicine in a mortar the device still including milling the subassembly, the subassembly of milling is including the ball of milling that is located the section of thick bamboo of pounding medicine in a mortar, it has linked firmly the connecting pipe on the ball to mill, the connecting pipe upper end has linked firmly the expansion pipe, flexible pipe upper end has linked firmly spacing guide post, the upper end of spacing guide post articulates there is connecting axle no. 1, the upper end spiro union of connecting axle no. 1 has the volution, the spiro union has connecting axle no. 2 on the volution, the motor rotating shaft end of rotating electrical machines has linked firmly the carousel, the upper end of connecting axle no. 2 articulates on the carousel side. This device is realized the automation and is milled convenient operation.					
					
31.	Rectangular bamboo joint buckling restrained brace	CN105735504	2016-03-03	SOUTHEAST UNIVERSITY NANJING*	98 %
The invention discloses a rectangular bamboo joint buckling restrained brace. The rectangular bamboo joint buckling restrained brace comprises a core component and an outer restrained component. The core component is formed by connecting a plurality of circular energy dissipation sections, a plurality of rectangular elastic sections with end connection sections along the longitudinal coaxial line. The circular energy dissipation sections and the rectangular elastic sections are arranged in an alternate mode, the diameter of the section of each circular energy dissipation section is smaller than or equal to the minimum side length of the section of each rectangular elastic section. The end connection sections are arranged at the two ends of the entirety formed by the circular energy dissipation sections and the rectangular elastic sections. The outer restrained component is a rectangular pipe. The core component is located inside the outer restrained component. The peripheries of the rectangular elastic sections of the core component are closely attached to the inner side of the outer restrained component. Gaps exist between the circular energy dissipation sections and the outer restrained component. According to the rectangular bamboo joint buckling restrained brace, torsional deformation of the rectangular elastic sections can be effectively limited, accordingly, overall torsional deformation of the core component is limited, the surface strain of the circular energy dissipation sections of the core component is reduced, and the low cycle fatigue performance of the buckling restrained brace is improved.					
					
32.	Portable building mortar consistency detection device	CN207051145	2017-08-09	WUDI JIAN CONSTRUCTION TESTING CENTER*	98 %
The utility model discloses a portable building mortar consistency detection device, including a pipe body, the right side fixedly connected with connecting plate of body, first spout has been seted up on the right side of connecting plate, the inside of first spout is provided with first slider, there is the fixed plate on the right side of first slider through pivot swing joint, first recess hasbeen seted up in the left side of fixed plate bottom. The utility model discloses a set up the body, reach the effect of placing the mortar, through first slider and first spout, reach the effect that drives the fixed plate and remove, through spiral shell rasp bar and screwed pipe, reach the effect that drives first slider and remove, pass through the fixed plate, reach the effect to mortar height detection, pass through infrared inductor, reach the effect that detects distance between fixed plate and the mortar, examine time measuring to the mortar consistency, need not change a slump degree section of thick bamboo and ruler back and forth, and the time is saved, the effect that detects has been ensured.					
					

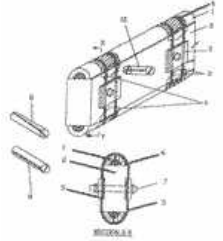
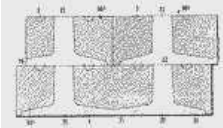
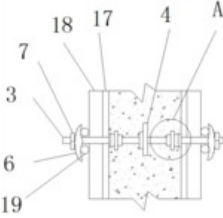
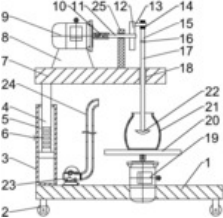
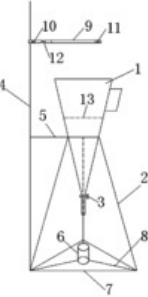
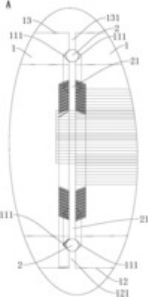
33.	Mortar consistometer	CN207703673	2018-01-11	SHENZHEN BAO JINHUA CONCRETE*	98 %
The utility model relates to an instrument and meter field to the closely knit complicated problem of operation of mortar vibration, provides a mortar consistometer, and it can drive a circular cone section of thick bamboo, vibration mortar, convenient operation, this technical scheme as follows: including the support, along vertical direction sliding connection on the support the cone and be located the circular cone section of thick bamboo of cone below, the support has a dead lever along vertical direction of connection, a circular cone section of thick bamboo is connected with the cover along the gliding sleeve pipe of length direction of dead lever on the dead lever, the support bottom is equipped with a drive circular cone section of thick bamboo and is reciprocating motion's drive assembly along vertical direction, the length of dead lever is greater than circular cone section of thick bamboo reciprocating motion's range. Be reciprocating motion in order to vibrate the mortar in the circular cone section of thick bamboo through a drive assembly drive circular cone section of thick bamboo along vertical direction to messenger's mortar is closely knit, avoids the manual work to strike the operation of a circular cone section of thick bamboo in order to vibrate the mortar, reduces the operation complexity, makes the closely knit operation of mortar more convenient.					
					
34.	Expansion joint and reinforcement connection method using the expansion joint	WO200236900	2001-10-23	YAMAX*	98 %
An expansion joint and a reinforcement connection method using the expansion joint; the method, comprising the steps of, to connect reinforcements (5, 5) to each other, installing a sealing means (2) on the side faces of a fixed container (1) formed hollow of a rigid material, burying the fixed container in the connection end between placed concretes (K) or secondary concrete products (K'), filling up expandable filler (4) into the fixed container (1), inserting the connected reinforcement (5) into the fixed container through the sealing means (2), whereby the reinforcements (5, 5) opposed to each other in the fixed container can be fixed to each other by a prestress and a pressing caused by the expandable filler (4).					
					
35.	Bamboo truss string structure	CN202108115	2011-06-03	CIVIL AVIATION UNIVERSITY OF CHINA*	98 %
The utility model discloses a bamboo truss string structure. The bamboo truss string structure comprises a plurality of top booms, a plurality of bottom booms, a plurality of diagonal web members, a plurality of rod piece connecting parts, a plurality of bolt spherical joints, a plurality of vertical jackstays, a bottom boom guy cable, a sliding hinged shoe and a fixed hinged shoe, wherein six rod piece connecting parts are mounted at two ends of each bamboo top boom, those of each bamboo lower boom and those of each bamboo diagonal web member respectively; the top booms, the bottom booms and the diagonal web members are connected through the bolt spherical joints to form a top boom truss frame; two ends of the bottom boom guy cable are connected to bottom boom steel balls at two ends of the top boom truss frame; the upper ends of the vertical jackstays are mounted on the bottom boom steel balls on the top boom truss frame at intervals; the lower ends of the vertical jackstays are connected to the bottom boom guy cable; the fixed hinged shoe and the sliding hinged shoe are mounted on the bottom boom steel balls at the two ends of the top boom truss frame respectively; and when the bottom boom guy cable is pre-stressed, the bamboo truss string structure is formed. Compared with a steel truss string structure, the bamboo truss string structure has the advantages that the stress on the guy cable is smaller, the vibration resistance is higher, and the safety performance is better.					
					
36.	Mortar feeding device is used in silicon cutting	CN207747251	2017-12-06	ZHEJIANG YOUXING ELECTRONIC TECHNOLOGY*	98 %
The utility model discloses a mortar feeding device is used in silicon cutting, including mortar case and support column, the mortar case is cylinder form hollow structure, and the vertical motor that is provided with in the top of mortar case center, the output shaft of motor has the dwang, and the dwang top of running through the mortar case extends to the setting of mortar incasement, the top of mortar case is run through and is provided with the opening, and the opening internalization is provided with filter equipment, filter equipment includes the fixed disk, strains a section of thick bamboo and hickey, strain a through fixed dish setting, the hickey is fixed to be set up on the fixed disk. The utility model discloses simple structure, the modern design, the user can carry out convenient getting rid of to the large granule impurity in the mortar, prevents that the mortar from blocking up the sandblast nozzle and influencing silicon cutting, can also stir the mortar and prevents sediment, and to the both ends realization lift simultaneously of mortar pipe, the problem of blockked up easily when having solved mortar supply in the past, the flow is uneven, the practicality is strong, the easy popularization.					
					
37.	Fiber-reinforced plastic rod , structure made of carbon-fiber-reinforced plastic, and structural body constituted of the structure made of carbon-fiber-reinforced plastic	WO2007074840	2006-12-26	OHTA TOSHIAKI;OTA TOSHIAKI	98 %
A long fiber-reinforced plastic rod which can be provided by tenaciously connecting fiber-reinforced plastic rods to each other; and a structure having at least one joint between fiber-reinforced plastic rods. One of the end parts of a first fiber-reinforced plastic rod and one of the end parts of a second fiber-reinforced plastic rod are inserted into a cylindrical shape retention frame, and the space in this shape retention frame is filled with a fastening material to connect the rods through this fastening material. The structure made of a fiber-reinforced plastic is a structure obtained by disposing, in parallel arrangement, two or more fiber-reinforced plastic rods each having a ring-form end part at each end, with the ends of the rods being trued up, and uniting and bonding the rod main-body parts, which are parts located between the ring-form end parts, with a solidifying material. The ring-form end parts are not embedded in the solidifying material. The exposed ring-form end parts are used as connecting parts to connect the rods through a fastening material.					
					
38.	Joining jig and method of joining in building structure using same.	WO9516834	1993-12-15	HOME* YUME YUME	98 %
A joining jig which enables firm joining in a simple method of construction, is free of falling-off, is considerably improved in workability, enhances productivity of a structure, prevents instantaneous destruction due to an earthquake and the like, and is greatly excellent in disaster prevention. The joining jig (1) comprises a rod-shaped member (2), one or two convex wall portions (8) of an inferior arc connected to one longitudinal end of the rod-shaped member (2), a hollow portion (3) formed to extend from one end of the rod-shaped member (2) to the other end thereof, holes (9) formed in the convex wall portions (8) for mounting thereto a fixing member, and a hollow branch pipe (12) fixedly or detachably engaged in an opening of the hollow portion (3) at the other end of the rod-shaped member (2). <IMAGE>					
					
39.	Method for constructing isolator of base-isolated floor	JP2012097460	2010-11-02	IHI PLANT CONSTRUCTION*	98 %
PROBLEM TO BE SOLVED: To provide a method for constructing an isolator of a base-isolated floor, which facilitates detachment of the isolator and which enables the isolator to be installed before curing of foundation mortar. SOLUTION: In a method for constructing an isolator of a base-isolated floor making the isolator 13 base-isolate a frame 14 for supporting a floor 17, a female screw-type anchor bolt 11 is driven in a concrete floor 10; foundation mortar 12 is constructed by covering an outer periphery of the driven anchor bolt 11 with a protective tube 31; and subsequently, the isolator 13 is held by the anchor bolt 11.					
					
40.	Fabricated wall and original bamboo combination of wall	CN208363330	2018-04-09	NANJING FORESTRY UNIVERSITY*	98 %
This application discloses a combination of wall-mounted original bamboo and the wall, which belongs to the field of bamboo wall. The wall comprises a plurality of wall elements of the present application, each wall element arranged side by side, each including two wall elements arranged side by side of the bamboo body, any two adjacent wall element of the set of four bamboo body into a diamond shape, and the four bamboo body are fixedly connected to any two adjacent bamboo body, so as to achieve any of the adjacent three Take Moto Oil & shaped triangular stabilizing structure, thereby solving the problem of poor lateral stability of bamboo wall, the stability wall is greatly improved.					
					

41.	Mortar divides depth appearance	CN207752006	2017-12-02	NANJING BINJIANG BUILDING MATERIALS TECHNOLOGY*	98 %
The utility model discloses a mortar divides depth appearance, its technical scheme main points are mortar divides depth appearance, including a last layering section of thick bamboo and a lower leafsection of thick bamboo, fixedly connected with goes up the connecting block on the perisporium of a last layering section of thick bamboo, connecting block under the fixedly connected with on the perisporium of a lower leaf section of thick bamboo, sliding connection has the dead lever in the connecting block down, and the upside of dead lever is equipped with and presss from both sides tight piece, go up seted up on the connecting block with dead lever grafting complex mounting groove, the dead lever keep away from that the one side that presss from both sides tight piece is articulated to have a gangbar, the opposite side of gangbar is equipped with and supplies the user to drive the gliding clamp of dead lever to move the subassembly. Through the rotating screw rod alright realize to go up a layering section of thick bamboo and a lower leaf section of thick bamboo separately, avoided revolving repeatedly down with the screwing in bolt, installation and dismantlement are convenient. 					
42.	Slip casting steel cylinder pile foundation behind environment -friendly assembled	CN206204985	2016-11-29	HUNAN POWER TRANSMISSION SURVEY & DESIGN CONSULTING* STATE GRID CORPORATION OF CHINA*	98 %
The utility model discloses a slip casting steel cylinder pile foundation behind environment -friendly assembled, including a stake section of thick bamboo, a stake section of thick bamboo is assembled in order along the axial by a plurality of tube couplings and is formed, a stake section of thick bamboo is buried underground in the foundation ditch, and concrete or cement mortar have been pour to the periphery, and the spoir is filled to inside, and the upper end is equipped with the connecting piece of being connected with the shaft tower lower leg, and the bottom is equipped with the stock of anchor in the foundation ditch bottom. The utility model discloses simple structure, the construction operation of being convenient for can realize mill's module production, and the preparation is simple and convenient, the machining precision is high, and the equipment is convenient, and economic benefits, social are showing, have better spreading value. 					
43.	Novel solar wafer's section device	CN207859210	2018-02-06	ANHUI YINXIN NEW ENERGY TECHNOLOGY*	98 %
The utility model discloses a novel solar wafer's section device, including the basement, the basement upper end is equipped with support cylindrical, and the support cylindrical upper end is equippedwith the backup pad, and the both ends of backup pad are equipped with location fastening strip, the basement upper end is equipped with the screw thread post, is equipped with the mortar board on the screw thread post, is equipped with the hole on the mortar board, is equipped with the short section of thick bamboo of direction on the mortar board, and the screw thread post passes a mortar boardand the short section of thick bamboo of direction, the both ends of mortar board are equipped with the baffle of slope setting and the curb plate of vertical setting, and mortar board, baffle and curb plate form an inside sunken mortar pond, the both ends of baffle are equipped with the incision, and the incision upper end is run through there is the cutting steel wire. The utility model discloses when the cutting monocrystalline silicon body, the mortar pond is arranged in to monocrystalline silicon body whole journey to guarantee that the cutting steel wire all the time can be abundant when the cutting with the mortar pond in the siC contact, thereby guarantee the monocrystalline silicon piece qualification rate height that cuts out, the utility model discloses simple structure, it isconvenient to maintain, and the effect is showing, is suitable for the practicality. 					
44.	Vertical type bamboo-shaped round rod energy consumption rod	CN106760854	2017-01-25	SOUTHEAST UNIVERSITY NANJING*	98 %
The invention discloses a vertical type bamboo-shaped round rod energy consumption rod comprising a core part, an outer restraint part and a locating pin. The core part is composed by connecting a plurality of mutually-perpendicular energy dissipation sections, intermediate limiting sections, bamboo sections and two-end connecting sections along the longitudinal coaxial axis. The intermediate limiting sections are located in the middle of the core part. The bamboo sections and the energy dissipation sections are distributed at intervals, arranged on the two sides of the intermediate limiting sections and form a whole together with the intermediate limiting sections, and the two ends of the outer sides of the bamboo sections and the energy dissipation sections are fixedly connected with the two-end connecting sections to form the core part. The cross sections of the intermediate limiting sections, the bamboo sections and the two-end connecting sections are all circular. First holes are formed in the middles of the intermediate limiting sections in the diameter direction. The energy dissipation sections are cut and manufactured in the length direction, so that the cross sections of the energy dissipation sections are two parallel opposite sides, the other two short sides are original arc lines, under the effect of the axial tensile pressure, the energy dissipation sections of the core part enter yielding through the formed new cross section areas, while the intermediate limiting sections, the bamboo sections and the two-end connecting sections always remain elastic. 					
45.	Quickly mounted bamboo house	CN101240664	2007-12-03	HUNAN UNIVERSITY*	98 %
A packaged bamboo wood house comprises beams, pillars, composition boards, an external wall surface and a roof surface water-proofing structure, the beam is the bamboo wood beam which is veneered with the bamboo plywood and adhesive, and the beams comprise a storey beam, a roof truss beam and a linking beam; the bamboo wood column system is obtained adopting bamboo plywood, angle iron and bolt for connecting and is taken as the backbone of the assembled wall at the part of the external wall; the load-bearing component of the combined board is wood backbone or bamboo wood backbone, the external panel is bamboo plywood, the inner panel is plaster board or bamboo plywood or wood veneer, and the load-bearing component is used as wall, building roof or roof surface, the external panel is enveloped with metal skin at the angle part and edge and is arranged with connecting holes according to the expected assembling-disassembling number. The invention has the advantages of a plurality of times of assembling and disassembling for recycling, light sole weight, convenient and quick construction; being safe and reliable; broad raw material source; no pollution in the production process; excellent aseismic behavior; corrosion resisting; and good stability.					
46.	Wood bamboo composites	WO2005035209	2003-07-03	DATYE KRISHNA RAM : GORE VILAS NARAYAN V N GORE	98 %
The invention relates to novel composites constituted of wood, bamboo, micro/ macro fibre inclusions, reconstituted-bamboo laminates (4) and fillers exhibiting monolithic behaviour under sustained and diverse loading conditions using stress lamination combined with interface irregularities for providing necessary shear resistance and tensile strength. Poor performance resulting from lack of inter fiber bond, splitting, brooming etc has restricted large-scale use of bamboo & small wood as engineering materials. Integrity & monolithic behaviour of the composite is achieved with stress lamination by use of U bolts (3), rods, bands etc in conjunction with designed irregularities such as undulations, serration & indentation with fasteners e.g. clamping plates, dowels. The techniques based on the invention have the potential to utilize small dimensioned wood, bamboo and reconstituted-bamboo laminates (4) to mass produce built up members e.g. beams, girders, trusses, struts, ties, frames, cylinders etc. in engineering structures such as towers, shells, arches, tanks, culverts and bridges. 					
47.	A soil-nail structure using bamboo	KR100892322	2008-06-11	BMTECK* SAMBO ENGINEERING*	98 %
A nailing structure using wedged bamboo is provided to support topography of a slope more securely, and to prevent environmental contamination by using bamboo instead of synthetic resin. A nailing structure using wedged bamboo comprises a nail bamboo(10) which is inserted into perforation holes of formed in the slope of ground and is exposed at one end, an anchor plate installed on the slope to fix and support the end part of the nail bamboo in the ground, a connecting member which is screwed on a fixture in order to fix the exposed top end of the nail bamboo to the anchor plate, and a coupling ring which is inserted to connect nail bamboo and a wedge member.					
48.	Raw bamboo structure building system and manufacturing method	CN101967852	2010-09-20	BAI JIANGUO	98 %
The invention relates to a raw bamboo structure building system and a manufacturing method, which aim to reduce the using amount of cement in house buildings. The technical route comprises that: raw bamboos are made into C-shaped and H-shaped bamboos; the C-shaped and H-shaped bamboos are made into bamboo external wall boards, bamboo internal wall boards, bamboo house panels, 8-shaped bamboos and C-shaped bamboo trusses by using different assembling pieces and structural combination forms; and the bamboos are assembled into houses or are combined with plastic shelter films or sunlight boards at the construction sites for building beam-connected sunlight greenhouses. 					

49.	Fish bank made of bamboo and method for assembling the same	JP2008187993	2007-01-31	KAWANO INDUSTRY*	98 %
PROBLEM TO BE SOLVED: To provide a bamboo fish bank in which placing instability in the sea bottom caused by buoyancy is improved and seaweed tends to grow thick and strength and shape can retain over a long period and provide a bamboo fish bank capable of carrying out stepped pile installation on a vehicle and loading on a load-carrying platform of the vehicle in a small area and to provide a method for assembling the bamboo fish bank. SOLUTION: The bamboo fish bank is equipped with concrete blocks and a plurality of bamboo members having arranged bars and concrete in a cylinder. The method for assembling the bamboo fish bank comprises inserting arranged bars extended from the bamboo member to the outside into holes provided in concrete blocks, packing concrete in fluid state therein and then solidifying the concrete. COPYRIGHT: (C)2008,JPO&INPIT					
					
50.	Mortar divides depth apparatus	CN206132764	2016-08-06	ZHONGQIAO ROAD ENGINEERING SUPERVISION CONSULTING*	97 %
The utility model discloses a mortar divides depth apparatus, its technical scheme main points are including last minute depth section of thick bamboo, a lower leaf degree section of thick bamboo, go up and divide a depth section of thick bamboo and a lower leaf degree section of thick bamboo to pass through the connection of quick assembly disassembly subassembly, the quick assembly disassembly subassembly is including setting up upward a plurality of top bases, setting on the border are in under the branch depth section of thick bamboo on the lower leaf degree section of thick bamboo with a plurality of bases down that the top base corresponds and be used for connecting the top base with the connecting piece of lower base, the one end of connecting piece can break away from or be connected to the top base perhaps down on the base. The utility model provides a present mortar divides depth apparatus tear, load onto a branch depth section of thick bamboo and the comparatively trouble problem of a lower leaf degree section of thick bamboo open.					
					
51.	Can accomodate mortar consistency detection device	CN206573431	2017-04-01	ANHUI GUIHENG ENVIRONMENT PROTECTION TECHNOLOGY*	97 %
The utility model discloses a can accomodate mortar consistency detection device, including base and bracing piece, the upper surface intermediate position fixedly connected with fixing base of base, the ring chamber is installed to the intermediate position of fixing base, unable adjustment base threaded connection has the section of thick bamboo of measurement, the bracing piece passes through connecting hole threaded connection base, install the connecting rod on the bracing piece, the below of second fixed block is provided with the second and places the chamber, one side that the chamber was placed to the second is provided with the third and places the chamber. Mortar dense density detection device is rational in infrastructure for this building, through setting up on the base outside the cavity that can accomodate plays convenient effect of accomodating, plays the effect of accomodating with the measuring instrument through the upset simultaneously, great improvement can accomodate mortar consistency detection device accomodate the performance, this kind of device appears on the market yet, can effectually cater to the market demand, the space has been saved simultaneously to great improvement convenient to use degree, has reduced the cost of transportation.					
					
52.	Earth anchor work method and anchor device	JPS5179920	1975-01-09	KIMURA S KIMURA SHOICHI MITSUI CONSTRUCTION*	97 %
An earth anchor device in which a plurality of flanged load-resistant plate couplers are removably screwed at predetermined intervals on a prestressing tendon (which usually may be cold drawn steel wire, or alloy steel wire or bar having high tensile strength, hereinafter referred to as "Tendon") forming the core portion of an earth anchor, a spring mechanism is closely annexed to the load-resistant surface of each of the flanged load-resistant plate couplers, and protective synthetic resin tubes each having an inner diameter slightly larger than the diameter of the Tendon are mounted over the peripheral portions of the Tendon which are exposed; and an earth anchor work method using such an anchor device. The anchor device is inserted into a bore drilled in the earth and embedded integrally with a charge of mortar forced into the bore, and after used, the Tendon of the anchor device is removable from the earth anchor device by being rotated about the axis thereof. <heading>BACKGROUND OF THE INVENTION</heading> 1. Field of the Invention This invention relates to an earth anchor work method and an anchor device for use as structure support in underground construction work in place of strutting for sheeting, and more particularly to a novel earth anchor work method and anchor device wherein the entire effective anchored length of the anchor may effectively resist and after used, a Tendon forming the core portion of the anchor body is readily removable. 2. Description of the Prior Art The known earth anchor work method and anchor device have often employed the so-called skin frictional resistance earth anchor wherein a Tendon is made integral with grouted mortar in the earth to form an anchor body and the skin frictional resistance between the peripheral surface of such anchor body and the surrounding earth is utilized to support pull-out force. Such type of anchor has involved serious disadvantages which will be described below. A first disadvantage of the conventional earth anchor is that the pull-out displacement of each portion of the anchor body is distributed along the embedded depth D in such a manner that the end pull-out displacement (tUn) tends to be much weaker than the head pull-out displacement (tUo), as a result of which the stress concentrates in the upper portion of the anchor to cause a progressive failure of the anchor from the upper to the lower portion thereof. Generally, the relation between the skin frictional resistance and the displacement of the peripheral surface of the anchor body with respect to the earth E is such that, the skin frictional resistance reaches a peak at a certain value of displacement (usually 5 to 15 mm), whereafter it is sharply decreased. In such type of anchor, therefore, the entire effective anchored portion thereof does not effectively resist the pull-out force and thus, any increase in length of the effective anchored portion of the anchor body could not lead to a corresponding increase in potential tensile strength thereof. Also, the anchor body of this type if rigidly integral with the Tendon contained therewithin and is therefore subject to pull-out force at all times, so that the skin frictional resistance between the anchor body and the earth E is decreased with the increase in pull-out force due to Poisson's effect. A second disadvantage is that the Tendon forming the core portion of the anchor body is made integral with mortar and after used, left embedded in the earth neighboring the site, and such left anchor would not only form an undestructible underground obstacle during a foundation work which might be carried out in future in that neighboring land, but also induce a trouble or quarrel with the owner of that land and further lead to a public problem. Furthermore, the core-forming Tendon of the conventional earth anchor, once used, has been discarded and this has meant a waste of steel material. <heading>SUMMARY OF THE INVENTION</heading> It is therefore an object of the present invention to provide an earth anchor work method and an anchor device thereof wherein the entire effective anchored length of the anchor body is resistant to pull-out forces and wherein pull-out displacement for each portion of the anchor body throughout the effective anchored length thereof may be distributed, as desired, in accordance with the skin frictional strength of the earth in which the anchor is embedded. It is another object of the present invention to provide an earth anchor work method and an anchor device thereof wherein, after completion of an underground work or after use of the earth anchor, the Tendon forming the core portion of the anchor body may readily be removed from the earth by being rotated about the axis thereof, thus eliminating the probability that such steel material would form an undestructible obstacle in the earth in future. It is still another object of the present invention to provide an earth anchor base wherein the Tendon forming the core portion of the anchor body is completely protected against water by protective sheath material or protective tubes surrounding the Tendon, whereby degeneration of the Tendon which would otherwise result from corrosion or the like may be prevented to ensure a permanently constant, great, tensile resistance to be maintained while permitting reuse of the Tendon. These objects of the present invention may be achieved by using an earth anchor base which comprises a plurality of flanged load-resistant plate couplers with spring mechanisms annexed thereto are removably screwed at predetermined space intervals on a Tendon forming the core portion of an earth anchor, and sheath material or protective tubes each having an inner diameter slightly larger than the diameter of the Tendon but less than the diameter of the load-resistant plate couplers, the sheath material or the protective tubes being mounted over the peripheral portion of the Tendon which is exposed. The invention will become more fully apparent from the following detailed description thereof taken in conjunction with the accompanying drawings.					
					

53.	Mortar consistency apparatus convenient to it is clean	CN2073036610	2017-08-11	SHENZHEN GANGLONG CONCRETE*	97 %
The utility model discloses a mortar consistency apparatus convenient to it is clean aims at solving because the circular cone container is fixed as an organic whole with the base, and the cone is fixed as an organic whole with the litter, consequently exists and is difficult for clear problem, and its technical scheme main points are: a mortar consistency apparatus convenient to it is clean, includes the base, be fixed in an installation section of thick bamboo and support, vertically slide the slide post and fixed connection in the cone of the toe end that slides on the linking bridge of base upper surface, be provided with containing barrel in the installation section of thick bamboo, containing barrel can dismantle with an installation section of thick bamboo and is connected through being provided with the joint structure, cone circular cone face guard is equipped with the taper sleeve, the taper sleeve can be dismantled with the cone and is connected through being provided with the grafting structure. The utility model discloses a mortar consistency apparatus convenient to it is clean, through held the mortar by detachable containing barrel, removable cover establishes the taper sleeve at the cone circular conical surface to facilitate for clean.					
54.	Bamboo reinforcement concrete slab piece road surface of temporary road	CN206828907	2017-06-13	TIANJIN SANJIAN CONSTRUCTION ENGINEERING*	97 %
The utility model discloses a bamboo reinforcement concrete slab piece road surface of temporary road, become the plate road surface angle bar frame that structural shapes is rectangular body by 5 jiaos of iron welding of model L50, constitute the bamboo reinforcement component by upper bamboo reinforcement spare and lower floor's bamboo reinforcement spare, the setting is at the cushion of lowerfloor bamboo reinforcement spare bottom, set up respectively and face length of side back gauge from for 220mm department and the hoisting point located for 330mm apart from the minor face distance inelongation iron frame two, revolve and twist the rings of linking department on the hoisting point, at the outside formwork of plate road surface angle bar frame and pour C30 concrete structure thatthe C30 concrete formed and form the road surface upper surface in the template and be equipped with the decorative pattern line and constitute. The utility model has the advantages of construction convenience, intensity is high, and the durability is strong, and is pleasing to the eye, wear -resisting and anti -skidding. In having at the construction field (site), as required, can replace the reinforcing bar to build into bamboo reinforcement concrete slab piece road surface the bamboo reinforcement immediately and realize the concatenation use, be convenient for clear up and can recycle anduse and energy -conserving and environment -protective beneficial effect with having enough to meet the need.					
55.	Mortar infiltration appearance	CN207717587	2017-12-02	SICHUAN URBAN CONSTRUCTION ENGINEERING SUPERVISION*	97 %
The utility model relates to a mortar check out test set discloses a mortar infiltration appearance, has solved the problem of surveying the mortar and droing from the test piece section of thick bamboo easily, comprises a workbench, base and be used for the test piece section of thick bamboo of filling mortar, test piece section of thick bamboo demountable installation is on the base, the pedestal mounting is on the workstation and seted up the outlet, the import has been seted up to the upper end of a test piece section of thick bamboo, install the closure member that seals the import on thetest piece section of thick bamboo, the joint groove has been seted up on the butt face of closure member and test piece section of thick bamboo lateral wall, the mounting groove has been seted up inthe test piece section of thick bamboo lateral wall, be provided with the joint piece that passes test piece section of thick bamboo lateral wall in the mounting groove, be provided with the actuating mechanism of drive joint piece and joint groove joint in the mounting groove, and relieve the stop gear of joint piece and joint groove joint relation, have and accomplish experimental back, therebyopen the closure member and directly take out the mortar, have the advantage of protection mortar.					
56.	Two-layer raw bamboo structure system	CN106381924	2016-10-28	CHONGQING UNIVERSITY*	97 %
The invention provides a two-layer raw bamboo structure system which comprises a floor structure and a frame structure, wherein the frame structure comprises multiple uprights, multiple cross beams and multiple corner post nodes serving as beam-upright connection nodes, a straight node, a T-shaped node and a cross node. The system is easy to disassemble for maintenance. The connection between the cross beams and uprights is more stable and reliable, and the overall stretching resistance and the overall anti-seismic property of a raw bamboo structure system building are improved. By adopting arc gaskets and bolts for fastening, the weight and cost of the connection nodes are reduced.					
57.	In -band inlays sheathed tube and pushes reinforcing bar sleeve that partly is in milk and connection structure thereof	CN205558051	2015-09-28	CHINA CONSTRUCTION BAILI ENGINEERING TECHNOLOGY DEVELOPMENT* CHINA STATE CONSTRUCTION ENGINEERING*	97 %
The utility model provides an in -band inlays sheathed tube and pushes reinforcing bar sleeve that partly is in milk and connection structure thereof, the sleeve is the steel pipe, and it has the annular inner root of distribution on injected hole and out grouting holes, the sleeve to open on the telescopic section of thick bamboo wall, telescopic one end is thick liquid anchor end for extrusion end, all the other parts, the inboard built -in embedded sleeve pipe that has of extrusion end, the external diameter of the reinforcing bar that embedded sheathed tube internal diameter equals to connect, be less than the internal diameter of thick liquid anchor end, injected hole, out grouting holes and annular inner root all are located thick liquid anchor end. The utility model discloses the deflection that utilizes embedded sleeve pipe to reduce the extrusion end appears the damage in order to avoid the extrusion to hold in the crimping process, but the steel bar connection of the precast concrete post of wide application in many high -rise prefabrication assembled concrete frame structure, shear wall structure or frame shear wall structure to and precast concrete beam's horizontal steel bar connection and the steel bar connection of precast concrete shear force wall and the steel bar connection among the current reinforcement engineering.					
58.	Pre-applied force anchoring system for slope protection device and construction method thereof	CN105804098	2016-03-31	NINGBO INSTITUTE OF TECHNOLOGY ZHEJIANG UNIVERSITY ZHEJIANG*	97 %
The invention discloses a pre-applied force anchoring system for a slope protection device and a construction method thereof. The pre-applied force anchoring system comprises a threaded rod (1), concrete bamboo joint blocks (2), connection discs (3), a spring (4) and a nut (5). The concrete bamboo joint blocks (2), the connection discs (3) and the threaded rod (1) form an integrated anchoring body (6), and the concrete bamboo joint blocks (2) and the connection discs (3) are arranged at intervals. The anchoring body (6) is placed into an anchor hole (7), and the gap between the anchoring body (6) and the anchor hole (7) is filled with concrete mortar. The nut (5) is screwed on the threaded rod (1) in a matched mode. The nut (5) tightly presses the slope protection structure and the concrete bamboo joint blocks (2) through the spring (4). The construction method is characterized in that all the concrete bamboo joint blocks (2), all the connection discs (3) and the threaded rod (1) form the integrated anchoring body (6), the anchoring body (6) is placed into the anchor hole (7), and the gap between the anchoring body (6) and the anchor hole (7) is filled with the concrete mortar. According to the pre-applied force anchoring system for the slope protection device and the construction method thereof, the construction speed can be increased, site construction is convenient and quick, the anti-drawing strength and the shearing strength are both ideal, and the constraint effect on soil bodies is good.					

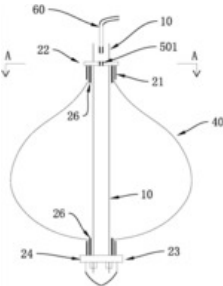
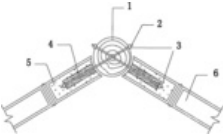
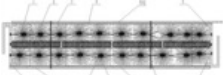
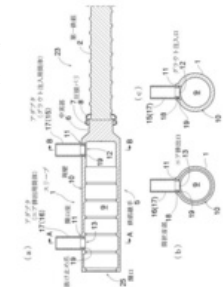
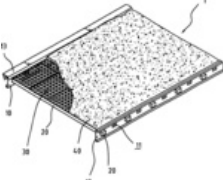
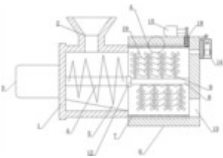
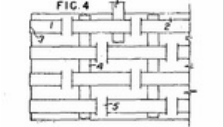
59.	A quantitative conveying device for protecting against radiation in mortar production process	CN205735544	2016-05-19	YIYANG JINYU BUILDING MATERIAL TECHNOLOGY*	97 %
The utility model relates to a radiation protection mortar production facility field specifically is a quantitative conveying device for protecting against radiation in mortar production process, and it includes the surge drum, the surge drum be connected to a ration section of thick bamboo, a ration section of thick bamboo be connected to and transport a section of thick bamboo, the surge drum with transport a section of thick bamboo all the slope set up, the vertical setting of a ration section of thick bamboo, a ration section of thick bamboo inside from last to having set gradually the returning face plate down and having weighed the force sensor board, returning face plate and the both sides of heavy force sensor board be provided with the trip shaft of wearing out a ration section of thick bamboo, and the trip shaft of both sides is installed respectively on bearing frame and upset motor, the utility model aims at providing a quantitative conveying device for protecting against radiation in mortar production process can realize collecting the ration and transport the integration, very big reduction intensity of labour, improved efficiency, can also effectually prevent the grit loss simultaneously, further improve quantitative precision.					
60.	Mortar consistency tester	CN207197983	2017-09-11	DONGGUAN GUANFENG CONCRETE*	97 %
The utility model discloses a mortar consistency tester, the pay -off device comprises a pedestal and a support, be equipped with the lifter on the support, its characterized in that: slide on the lifter and be connected with the slide bar, the bottom of slide bar is equipped with the cone, be equipped with flourishing feed cylinder on the base, the section of thick bamboo of flourishing feed cylinder is along being equipped with the water conservancy diversion mouth, the upper surface of base is equipped with accepts the groove, accept the trench under the water conservancy diversion mouth, the bottom of accepting the groove is provided with the draw -in groove, be equipped with on the base with draw -in groove grafting complex fixture block. This mortar consistency tester is when using, and mortar in the flourishing feed cylinder is because the immerseing of cone, and partial mortar spills over flourishing feed cylinder, because the section of thick bamboo of flourishing feed cylinder is along being equipped with the water conservancy diversion mouth, the water conservancy diversion mouth is less than the section of thick bamboo edge of flourishing feed cylinder, and the mortar that consequently spills over falls to accepting the insolet along the water conservancy diversion mouth, only need when the experimenter washes to accept the groove take off the cleanness can, simple and convenient.					
61.	Anchor-bamboo combination support method for underground mining	CN102182484	2011-05-06	SINOSTEEL MAANSHAN INSTITUTE OF MINING RESEARCH*	97 %
The invention discloses an anchor-bamboo combination support method for underground mining. The method comprises the following steps of: combining an anchor rod / anchor cable (1) with a bamboo basketry to form a support body, wherein the bamboo basketry is formed by weaving transverse bamboo chips (4) and longitudinal bamboo chips (5), the transverse bamboo chips (4) of the bamboo basketry are tightly weaved in a one-back-one-front mode, and intervals of the longitudinal bamboo chips (5) are less than or equal to 160 mm; tightly attaching the bamboo basketry to a top plate, two walls or upper and lower disks; drilling at a position away from four corners of the bamboo basketry by a certain distance; and inserting the anchor rod or anchor cable (1) at one end of which a supporting plate (2) and a bolt (3) are arranged, tightening to form a complete support body, and combining the support body with country rocks of the top plate, the two walls or the upper and lower disks to form a force whole. The method is simple and convenient to operate, economical, reasonable, quick and effective.					
62.	Pocket mortar resiliometer	CN207095955	2017-06-02	SUZHOU LINK ENGINEERING MANAGEMENT CONSULTING*	97 %
The utility model discloses a pocket mortar resiliometer, including the resiliometer body, the resiliometer body is provided with two symmetric distributions and fixes the baffle on resiliometer bodysurface, be provided with width direction's the cross -section slide the same with the baffle between the baffle, the card strip that is provided with along self length direction is extended to the slide both sides, the baffle both sides are provided with the draw -in groove that supplies the laminating of card strip to slide respectively, the resiliometer body is provided with the end cover thatis used for fixed slide, the top fixed connection of end cover and slide, baffle and slide end are provided with the complex external screw thread respectively, the resiliometer body is provided withthe fastening section of thick bamboo that the internal diameter is the same with the slide external diameter, the inboard thread groove that is provided with the cooperation external screw thread ofa fastening section of thick bamboo. The utility model discloses form the space of sealing the resiliometer with the help of baffle and slide to reach the mesh of sealing up the resiliometer up for safekeeping.					
63.	Assembled grout sleeve	CN206091082	2016-10-14	BEIJING JINGYI BAIZHENG TECHNOLOGY DEVELOPMENT*	97 %
The utility model relates to an assembled grout sleeve belongs to the architectural engineering technology field, including the metal sleeve body, it includes a threaded connecting sleeve section of thick bamboo end cover and a grout pot head section of thick bamboo, and threaded connecting sleeve section of thick bamboo end cover center is equipped with the connecting hole, and the connecting hole inner wall is equipped with the outer straight thread connection of interior straight thread, interior straight thread and the setting of first reinforcing bar tip, threaded connecting sleeve section of thick bamboo end cover includes end cover portion and muffjoint portion, the both ends of grout pot head section of thick bamboo one side are equipped with thick liquids respectively and inject a mouth and a thick liquids overfall, and grout pot head section of thick bamboo inner wall is equipped with the straight thread, and straight thread and the thread connection of muffjoint portion are passed through to grout pot head section of thick bamboo one end, the second reinforcing bar has been inserted at the inside center of a grout pot head section of thick bamboo, and the axis of first reinforcing bar, second reinforcing bar all holds telescopic axis on same straight line with grout, the grout material has been filled between second reinforcing bar and the grout pot head section of thick bamboo inside. The utility model discloses manufacturing is easy, low in production cost, the lifting surface area is big, safety stock is high.					
64.	Mortar consistometer	CN207036609	2017-08-12	SHENZHEN GANGLONG CONCRETE*	97 %
The utility model discloses a mortar consistometer has solved prior art, when pouring the mortar into in a flourishing thick liquid section of thick bamboo, and mortar surface irregularities, whetherwhat be difficult to that the control pours the mortar into highly is close high indicating line, often need pour into many times, and the mortar that maybe will be more than is poured, has caused thewaste of time, problem that measurement of efficiency is low. Its technical scheme main points are, mortar consistometer includes the push pedal and keep off the ring, and a flourishing thick liquidsection of thick bamboo can be released with the mortar that exceeds flourishing thick liquid bobbin top portion to the push pedal, will keep off the ring again and promote, the indirect height that has improved flourishing thick liquid section of thick bamboo lateral wall, and when preventing that the examination awl from falling into flourishing thick liquid tin, the mortar spills over. Therefore only need add in a flourishing thick liquid section of thick bamboo mortar just can accurate control starch greatly tin in the height of mortar, convenient and fast has improved measurement of efficiency.					

65.	Composite fastener systems for wood and bamboo structural applications	WO2005042216	2003-08-19	DATYE KRISHNA RAMCHANDRA	97 %
The invention consists of a composite system of fasteners of various forms and materials used in optimum and cost effective combination. The invention facilitates the use of bamboo and wood from short rotation forestry by availing of high strength and low deformability of superior wood bamboo laminates, fiber reinforced plastics and corrosion resistant metals used in critical zones. Various forms of fasteners e.g. circular, rectangular wedges (5, 1), diamond shaped inserts (6, 7, 8, 2), split sleeve (3) etc. are used in the invention with stress lamination devices, bands and tension bolts to improve bearing strength and resistance to indentation, splitting/brooming. Consequently, high capacity, low deformation under long loading, reduced creep and ability to withstand stress repetition and reversal is achieved. Pre-compression and reaming of holes, introduction of high strength inserts, carried out in the shop, results in simplifying the on-site assembly thereby eliminating the need for special, high capacity equipment.					
					
66.	Building blocks and connector means therefor	DD129227	1976-11-10	SCHLOEMANN* SCHLOMANN KRIEMHILD SCHLOMANN KRIEMHILD GEB JORDAN	97 %
There is provided a masonry which consists of stacked building blocks forming several superimposed horizontal courses. The upper sides of blocks in lower courses and the undersides of blocks in the next-higher courses have registering mirror symmetrical sockets in the form of generally hemispherical cavities for reception of spherical connectors. Auxiliary connectors can be provided to couple neighboring blocks of each course to each other; such auxiliary connectors constitute discrete parts having webs received in aligned channels of the respective blocks and end portions which extend into neighboring sockets or blind bores of such blocks.					
					
67.	Novel design formula is to drawing screw rod	CN207727990	2017-11-16	HANGDA CONSTRUCTION*	97 %
The utility model discloses a novel design formula is to drawing screw rod, including long bolt, an internal -thread sleeve section of thick bamboo and short screw rod, the middle part welding of longbolt has a stagnant water piece, and the both ends of long bolt all are equipped with the external screw thread, the both ends of long bolt pass through the external screw thread all with an internal -thread sleeve section of thick bamboo threaded connection, two equal threaded connection pubescent screw rods of one end that the long bolt was kept away from to an internal -thread sleeve section of thick bamboo, the rubber buffer has been cup jointed to one side that short screw rod is close to an internal -thread sleeve section of thick bamboo, mountain type card has been cup jointed to one side that an internal -thread sleeve section of thick bamboo was kept away from to the weak point screw rod, one side threaded connection that mountain type card was kept away from to the weak point screw rod has fastening nut. The utility model discloses simple structure, the welding seam appears in convenient operation in the time of can preventing the welding of stagnant water piece and long bolt, can also realize water stopping function through the hollow tube that the external diameter be greater than the conical duct, further can also utilize the expanded polystyrene (EPS) to fill the inner sealing of hollow tube to strengthen water -proof effects, can also prevent that mountain type card from losing, reduces construction cost, improves work efficiency.					
					
68.	Be used for traditional chinese medicine administrative or technical offices with automatic device of pounding medicine in a mortar	CN206474214	2016-12-26	HE FANG	97 %
The utility model discloses a be used for traditional chinese medicine administrative or technical offices with automatic device of pounding medicine in a mortar, the on -line screen storage device comprises a base, a base upper left side fixedly connected with perpendicular sleeve section of thick bamboo, a perpendicular sleeve section of thick bamboo weld on the base, a plurality of recesses have been seted up to the inside telescopic link that is equipped with of a perpendicular sleeve section of thick bamboo, telescopic link lower extreme, and perpendicular sleeve section of thick bamboo left side threaded connection has and tightly decides the bolt, tightly decide the bolt and pass a perpendicular sleeve section of thick bamboo and groove phase cooperation, telescopic link top fixedly connected with crossbeam, crossbeam top left side fixedly connected with motor cabinet, the first motor of motor cabinet top fixedly connected with, first motor level arranges that first motor right side output is connected with the shaft coupling. Compared with the prior art, the beneficial effects of the utility model are that: the utility model discloses simple structure, convenient operation, the medicinal cupping of adaptable not equidimension, when the pestle medicine, the second motor drives the medicinal cupping and rotates for pestle medicine position is changing, and the effect of pounding medicine in a mortar is better, and is very convenient and the washing medicine jar can be settled after accomplishing immediately to the pestle medicine, is worth the popularization.					
					
69.	Measure mobile device of silicon mortar	CN204944982	2015-08-29	SOUTH CHINA UNIVERSITY OF TECHNOLOGY*	97 %
The utility model discloses a measure mobile device of silicon mortar, including a marsh section of thick bamboo, tripod, valve, pole setting, pole setting transverse supporting rod, 100ml graduated flask, beaker clamp ring, a marsh section of thick bamboo is placed on the tripod, and the tripod is placed on the tripod base, the valve sets up in marsh section of thick bamboo upper portion radius cone and lower part small circle column casing junction, the downward flow of steerable silicon mortar or stop flow stopping and move, the 100ml graduated flask is located the tripod base under the marsh section of thick bamboo, the pole setting is welded in tripod one side to it is fixed with the tripod middle -end through pole setting transverse supporting rod, the pole setting upper end is provided with beaker clamp ring. The utility model discloses can make things convenient for the experimenter control silicon mortar beginning flow time, ensure accurate measurement flow time, compensate the vacancy that detects now.					
					
70.	Tower section of thick bamboo component	CN206221159	2016-10-08	HORGOS NEW STATE GOLD NEW ENERGY TECHNOLOGY*	97 %
The utility model discloses a tower section of thick bamboo component, tower section of thick bamboo component includes: a plurality of arc tower pieces and separate to keep off. End to end is in order constituting annular tower section of thick bamboo component each other for a plurality of arc tower pieces, and every arc tower piece has a terminal surface of being connected that links to each other with other arc tower pieces, and two of linking to each other each other connect and prescribe a limit to a clearance between the terminal surfaces, and two of linking to each other each other connect and are equipped with two between the terminal surfaces and separate and keep off, thereby two separate and keep off the piece and be used for separating the interior outer end in clearance to keep off prescribing a limit to the inside and outside confined clearance of being in the milk. According to the utility model discloses a tower section of thick bamboo component sets up two and separate to keep off in order to prescribe a limit to an inside and outside confined grout clearance between the connection terminal surface through two arc tower pieces connecting each other, the dabbling mortar in clearance between two arc tower pieces that from this can prevent to connect each other leaks, guarantees the leakproofness of grout to can improve tower section of thick bamboo component's shaping quality.					
					

71.	Bamboo-shaped round rod energy consumption rod	CN106760855	2017-01-25	SOUTHEAST UNIVERSITY NANJING*	97 %
The invention discloses a bamboo-shaped round rod energy consumption rod comprising a core part, an outer restraint part and a locating pin. The core part is composed by connecting a plurality of energy dissipation sections, intermediate limiting sections, bamboo sections and two-end connecting sections along the longitudinal coaxial axis. The intermediate limiting sections are located in the middle of the core part. The bamboo sections and the energy dissipation sections are distributed at intervals, arranged on the two sides of the intermediate limiting sections and form a whole together with the intermediate limiting sections, and the two ends of the outer sides of the bamboo sections and the energy dissipation sections are fixedly connected with the two-end connecting sections to form the core part. The cross sections of the intermediate limiting sections, the bamboo sections and the two-end connecting sections are all circular. First holes are formed in the middles of the intermediate limiting sections in the diameter direction. The energy dissipation sections are manufactured by cutting of round rods in the length direction, so that the cross sections of the energy dissipation sections are two parallel opposite sides, the other two short sides are original arc lines, under the effect of the axial tensile pressure, the energy dissipation sections of the core part enter yielding through the formed new cross section areas, while the intermediate limiting sections, the bamboo sections and the two-end connecting sections always remain elastic.					
72.	Form-stable composite floor plate for constructional engineering	CN107882258	2017-12-29	CHANGSHA ZICHEN TECHNOLOGY DEVELOPMENT*	97 %
Disclosed is a flexible composite floor plate for constructional engineering. The flexible composite floor plate for constructional engineering comprises a form-stable connecting member, a steel wirethorn net and/or steel wire thorn ropes, dry-mixed cement mortar, and a fiber cloth or a strip shaped bag of the fiber cloth; the form-stable connecting member, the steel wire thorn net and/or the steel wire thorn ropes, the dry-mixed cement mortar, the fiber cloth or a fiber thorn cloth or the strip shaped bag of the fiber cloth are formed a flexible composite floor plate which is composed of a long steel wires and /or a steel wire ropes and a short fiber, and the dry-mixed cement mortar reasonably distributed in the three-dimensional space. The flexible composite floor plate for constructional engineering is fixed to be added into water to wet and can efficiently cover the cementation solidifying steel wire thorn net and /or steel wire thorn ropes and the long and short fibers of the fiber cloth, fiber mortar concrete is formed, the required capacity of tensile, shock resistance, crack resistance, and carrying are provided after the flexible floor plate materials are spliced and assembled, laid, and solidified. The fixed connecting member is used for maintaining the stability of the shape and size of the composite material light floor plate, and efficiently assembling and laying construction is convenient.					
73.	Flexible composite floor for building engineering	CN208039605	2017-12-29	CHANGSHA ZICHEN TECHNOLOGY DEVELOPMENT*	97 %
Flexible composite floor for building engineering, it is main including setting connecting elements, steel wire bramble net and/or steel wire bramble rope, mix cement mortar, fibre cloth or fibre fabric swatch shape bag futilely, setting connecting elements, steel wire bramble net and/or steel wire bramble rope, mix cement mortar, fibre cloth or fibre bramble cloth or fibre fabric swatch shape bag futilely and constitute by long steel wire and/or wire rope and short -staple, cement mortar in three dimensions reasonable distribution's flexible composite floor thoughtlessly futilely. The utility model discloses lay fixed back and add water -wet and can effectively cover the length fibre of wrapping up in glued solidification steel wire bramble net and/or steel wire bramble rope and fibre cloth, form the fiber mortar concrete, provide flexible floor material and assemble and lay after the solidification required tensile and shock resistance and split and bearing capacity to the shape of the flexible floor of combined material and the stability of size are maintain to the setting connecting elements, and the high efficiency that just makes it to be convenient for is assembled and is laid the construction.					
74.	Spiral shell head muscle body posttension pile foundation	CN206581314	2017-02-22	BEIJING J & C GEOTECHNICAL CONSTRUCTION*	97 %
The utility model discloses a spiral shell head muscle body posttension pile foundation, the ground wire pile comprises a pile body, the center department of pile body is equipped with the muscle body, the outside suit of the muscle body is equipped with insulating sleeve, the top of the muscle body is worn out the pile body and is locked through the ground tackle, the bottom of the muscle body is equipped with the spiral head, the center department of spiral head be equipped with with the well core rod body that muscle body screw thread is connected, the outside of the well core rod body is equipped with helical blade. The utility model discloses in the muscle body inserted the concrete thick liquid, rotatory spiral head reduced the resistance of transferring of the muscle body for earlier the pressure irrigation concrete can prevent the condition because of the too big inefficiency that incline, insert of muscle body resistance in installing the technology of the muscle body again in the locating hole, has improved the muscle body and has transferred work efficiency and operating mass with rated load, and the spiral head casts anchor the body and the muscle body through threaded connection, has realized the convertibility that the muscle personally experienced sth. Part of the body, has solved the maintenance of later stage to spiral shell head muscle body posttension pile foundation.					
75.	Outer anchor of nonmetal anti -floating anchor rod	CN205276270	2016-01-04	QINGDAO JIURUI CONSTRUCTION ENGINEERING* QINGDAO TECHNOLOGICAL UNIVERSITY*	97 %
The utility model belongs to the technical field of anchor equipment, a outer anchor of nonmetal anti -floating anchor rod is related to, the stock body of rod comprises interior anchor section and outer anchor section two parts, is equipped with the locator in the outer anchor section, and the locator protects a section of thick bamboo with the stock body of rod and steel respectively and links to each other, and the outer anchor section outside is equipped with the steel and is protected a section of thick bamboo, and outer anchor section and locator that the steel protected a section of thick bamboo, the stock body of rod adopt cement mortar closely to bond, the angle bar welding is on the steel protects the outer wall of bobbin base portion, and the steel protects a section of thick bamboo and all fixes on the ground body with the welded mode with the angle bar, the bed course lays on the ground body, and the bed course links to each other with interior anchor section, outer anchor section respectively, the welding had a stagnant water steel sheet on the steel protected the lateral wall of a section of thick bamboo, and the steel protects the outer anchor section of a section of thick bamboo, stagnant water steel sheet and the stock body of rod and constitutes the integral type structure and pour in reinforced concrete bottom plate, its simple structure, convenient operation, it is with low costs, be convenient for installation and construction, long service life, anchor power is big, and anchoring effect is good.					
76.	Grinder for medicine test	CN206746761	2017-03-10	ZHAO SUJUAN	97 %
The utility model discloses a grinder for medicine test mainly relates to the medicine test auxiliary devices field. Support a section of thick bamboo including the both ends open -ended, be equipped with the mortar in the support section of thick bamboo, the top of mortar is equipped with the hemisphere and grinds the chamber, is equipped with a plurality of sieve mesh on the mortar, the top of supporting a section of thick bamboo is equipped with sealed lid, the middle part of sealed lid is equipped with the screw rod, the bottom of screw rod is equipped with grinds the hemisphere grinding head that the chamber suited with the hemisphere, the top of screw rod is equipped with the crank, be equipped with the handrail on the outer wall of a support section of thick bamboo, the bottom cover that supports a section of thick bamboo is equipped with and holds the box, it is equipped with disposable receiver in the box to hold. The utility model has the advantages of it can be quick the grinding of completion medicine, good medicine powder is ground in collection that can be quick, can improve the grinding efficiency, labour saving and time saving.					
77.	Novel building is plastered device	CN206053258	2016-08-26	ZHEJIANG TONGAN CONSTRUCTION*	97 %
The utility model discloses a novel building is plastered device, this is plastering unit for the housing construction, whole device simple structure, convenient operation, just whole process all is automatic, need not not artificially go on, and the effectual working strength who reduces the workman has improved work efficiency, has simplified work flow, and its technical scheme is including base plate and bottom plate, the bottom both sides of base plate all are provided with the sleeve all through the top both sides fixed connection of support with the bottom plate on two supports, be provided with the board of plastering on the sleeve, the top of base plate is provided with the motor, the pivot and the bottom of initiative dish of motor are connected, the initiative dish is connected with the driven plate transmission through the belt, the bottom of driven plate is through the top fixed connection of a support section of thick bamboo with the base plate, be provided with the threaded rod on the driven plate, supreme and run through in proper order down and support a section of thick bamboo and base plate in the bottom of threaded rod to extend to the bottom and connecting block fixed connection of base plate.					

78.	Flexible composite board for quickly laying bridge or pavement or floor slab	CN107938931	2017-12-29	CHANGSHA ZICHEN TECHNOLOGY DEVELOPMENT*	96 %
The invention discloses a flexible composite board for quickly laying a bridge or a pavement or a floor slab. The flexible composite board mainly comprises a shaped connecting member, a steel wire thorn net and/or a steel wire thorn rope, dry mixing double quick cement mortar, fiber cloth or fiber thorn cloth or a fiber cloth board-shaped bag; the shaped connecting member, the steel wire thorn net and/or the steel wire thorn rope, the dry mixing double quick cement mortar, the fiber cloth or the fiber thorn cloth or the fiber cloth board-shaped bag form the flexible composite board produced by reasonably distributing long steel wires and/or a steel wire rope, staple fibers and the dry mixing double quick cement mortar in a three-dimensional space and compounding; the dry mixing double quick cement mortar fills a clearance of a three-dimensional fiber space formed between the fiber cloth and the steel wire thorn net and/or the steel wire thorn rope. According to the flexible composite board disclosed by the invention, tension resistance, impact resistance, crack resistance and bearing capacity required after a flexible board material is spliced and cured can be improved; the stability of shape and dimension of a composite material flexible board is maintained by the shaped connecting member and high-efficiency laying construction of the composite material flexible board is facilitated.					
79.	Mortar stirrer's powder material feeding unit	CN207747237	2017-12-11	NANJING BINJIANG BUILDING MATERIALS TECHNOLOGY*	96 %
The utility model discloses a mortar stirrer's powder material feeding unit, including frame and rack -mounted teeter chamber, its technical essential is: the slope is provided with two sets of lead screws that are parallel to each other in the frame, the lead screw rotates to be connected in the frame, two sets of on the lead screw respectively threaded connection have the movable block, be equipped with the screw hole that supplies the lead screw to pass on the movable block, still include: a storage section of thick bamboo for holding the powder, storage section of thick bamboo both sides are respectively with two sets of the movable block is connected, be used for drive screw pivoted actuating mechanism, actuating mechanism includes the servo motor with screw connection, an unloading mechanism for driving the powder is empty to a storage section of thick bamboo. Through the automatic rising of lead screw, movable block and a gag lever post realization storage section of thick bamboo, the lifting height accuracy is adjustable, prevents that the powder from flying upward to be convenient for rinse, topple over the powder voluntarily with the help of leading wheel, drawing and the driving motor realization of unloading mechanism.					
80.	Ground concreting construction controlling means	CN207597883	2017-11-30	YUNNAN CONSTRUCTION INVESTMENT HOLDING*	96 %
The utility model discloses a ground concreting construction controlling means, including the foundation ring, cut apart dish and roof, the inside of foundation ring is through three spinal branch poles and central fixing base fixed connection, the top of central fixing base and spiral shell rasp bar's bottom welded fastening, spiral shell rasp bar and double thread section of thick bamboo threaded connection, the inner wall and the outer wall of a double thread section of thick bamboo all have been equipped with the thread turns circle, the middle part of a double thread section of thick bamboo and cut apart a set threaded connection. The utility model discloses adjust the height between roof and the foundation ring according to the condition on the spot, place the in -process, level bar through roof top installation, but whether definite roof of convenient and fast the level, be equipped with simultaneously the division board between roof and foundation ring, pour for the layering and provide convenience, and simultaneously, this kind of device ash cake quality traditional relatively reduces greatly, it is more labor-saving among the operation process, because its height -adjustable, can carry out recycle to it after pouring, improve its utilization ratio, sparingly make the time and the cost of ash cake.					
81.	Foundation structure for pillar and construction method thereof	KR101624706	2016-01-20	MST*	96 %
According to the present invention, a foundation structure for a pillar comprises: a plate forming a plurality of coupling holes provided with a connector, extended upwards and protruding, on a middle portion; and steel bars penetrated through the coupling holes and coupled in a downwardly protruding shape where a welding unit performs a welding operation to couple the steel bars to the coupling holes. In addition, a method to install a foundation structure for the pillar in accordance with the present invention comprises: a plate preparation step arranging inclined surfaces on a place where the plate is to be installed, and positioning the plate; a steel bar insertion and hitting step of inserting the steel bars into the coupling holes formed on the plate, and hitting and ramming the steel bars underground; a removal portion cutting step of cutting portions of the steel bars protruding upwards from the plate; and a welding step of welding the coupling holes formed on the plate with tip ends of the steel bars to form welding portions. The present invention provides the foundation structure for the pillar which is easy to construct and is able to stably support a structure by being provided with the plate to support a load of the structure erected by the pillar, and firmly be installed in the ground; and burying the steel bars coupled to the plate via welding underground.					
82.	Conical head muscle body posttension pile foundation	CN206554106	2017-02-22	BEIJING J & C GEOTECHNICAL CONSTRUCTION*	96 %
The utility model discloses a conical head muscle body posttension pile foundation, including the pile body, the center department of pile body establishes the muscle body, the outside suit of the muscle body is equipped with insulating sleeve, the top of the muscle body is worn out the pile body and is locked through the ground tackle, the thick thin taper all around body that casts anchor in the middle of the bottom of the muscle body is equipped with. The utility model discloses an it casts anchor physically to set up the cone on the muscle body, in the time of in the muscle body inserts the concrete thick liquid, the taper is casted anchor, and it casts anchor to personally experience sth. Part of the body for traditional flat board to personally experience sth. Part of the body compares, frictional force between having reduced the concrete thick liquid and having casted anchor physically, the ground wire pile comprises a pile body, the joint bar physically leads to the muscle body to incline among the construction process after having solved the long spiral drilled pressure irrigation concrete because of the resistance is too big, it is crooked, insert the condition of inefficiency, the efficiency of the work of transferring of the muscle body is improved and operating mass with rated load, the body that casts anchor passes through threaded connection with the muscle body, the convertibility of the muscle body has been realized, the maintenance of later stage to conical head muscle body posttension pile foundation has been solved.					
83.	Flexible anti-settlement composite board for paving marshland roads	CN108099279	2017-12-29	CHANGSHA ZICHEN TECHNOLOGY DEVELOPMENT*	96 %
The invention provides a flexible anti-settlement composite board for paving marshland roads. The flexible anti-settlement composite board comprises a settlement damping mechanism and a flexible road surface mechanism, wherein the settlement damping mechanism and the flexible road surface mechanism are fixedly connected to respectively form a bottom layer and a surface layer of the flexible anti-settlement composite board; the settlement damping mechanism is a wave-shaped, groove-shaped or dot-matrix-shaped airbag layer or is a coated or exposed wave-shaped, groove-shaped or dot-matrix-shaped light foam layer; the flexible road surface mechanism is a flexible road surface board compounded by fiber and dry-mixed quick-setting mortar which are used as main materials; the flexible road surface mechanism comprises shaping connection components, fiber thorn nets and/or fiber thorn ropes, dry-mixed quick-setting mortar, fiber cloths or fiber cloth bags. The flexible anti-settlement composite board is used as a light and high-strength flexible road paving material which is conveniently transported and efficiently paved, is free of water accumulation, has resistance to settlement and subsidence, crack resistance and impact resistance and is capable of absorbing sound and reducing noise for quickly constructing the marshland roads; energy conservation, emission reduction and environment protection are facilitated.					
84.	Vertical mortar stirrer	CN206357419	2016-11-15	SHENZHEN HONGSHENG BUILDING MATERIAL*	96 %
The utility model discloses a vertical mortar stirrer, including organism, gear box, churn, stirring rake, stand and scraper blade, scraper blade and stirring rake are all connected on the gear box, the gear box is articulated with the stand, wherein: the axle center and the churn axle center eccentric settings of stirring rake, it is radial 12 that the axle center of stirring rake and the axle center of churn are less than the churn in the distance of horizontal direction, and through the aforesaid setting, eccentric settings's stirring rake is when the stirring, and stirring rake one side be the antipoint at the proximal position of section of thick bamboo wall and stirring rake, breaks up the great component of weight under centrifugal force acts on, under the effect of stirring rake, mobile to the axle center of churn, stirring rake eccentric distance is less than churn radial 12 to the width of stirring rake is greater than the radius of churn, can avoid the churn middle position to form the vortex type space, and assurance mortar complete set branch all under the effect of stirring rake, improves stirring efficiency.					
85.	Reinforcement connector	JP2017133307	2016-01-29	KUMAGAI GUMI*	96 %
PROBLEM TO BE SOLVED: To provide a reinforcement connector for dispensing with supply of a filler when connecting mutual reinforcements.SOLUTION: A reinforcement connector (10) includes a plurality of plate members (12) mutually arranged at an interval in the circumferential direction of a receiving space for regulating the cylindrical receiving space (22) for receiving end parts (R1 and R2) of two reinforcements R, extending in the axial direction of the receiving space, and capable of abutting on a peripheral surface of both end parts of the reinforcements, a cylindrical member (14) for surrounding the periphery of the plate members, that is, the cylindrical member deformable so as to contract a diameter by drawing in its axial direction, a ring member (16) installed in one end part (14a) of the cylindrical member and capable of abutting on one end part (28) of the plate members, a female screw member (18) installed in the other end part (14b) of the cylindrical member, and a hollow male screw member (20) threadedly engaged with the female screw member and capable of abutting on the other end part (30) of the plate members. The end parts of the two reinforcements can be respectively inserted into the receiving space regulated by the plurality of plate members via the ring member and the hollow male screw member.SELECTED DRAWING: Figure 1					

86.	Modularized bamboo-shaped buckling restrained brace	CN105604205	2016-03-03	CENTRAL RESEARCH INSTITUTE OF BUILDING & CONSTRUCTION* CHINA JINGYE ENGINEERING* SOUTHEAST UNIVERSITY NANJING*	96 %
The invention discloses a modularized bamboo-shaped buckling restrained brace which comprises a core part, an outer restraining part and a structure connecting part. The core part comprises a plurality of circular energy dissipation sections and a plurality of elastic sleeves. Each circular energy dissipation section comprises a middle section and connecting sections at two ends. The core part is located inside the outer restraining part. The inner surface of the outer restraining part closely attaches to or is tangent to the outer surfaces of the elastic sleeves of the core part. One end of the structure connecting part extends into the outer restraining part, and the other end thereof extends out of the outer restraining part to be connected with a structure. The modularized bamboo-shaped buckling restrained brace has the advantages that the circular energy dissipation sections and elastic sleeves of the modularized bamboo-shaped buckling restrained brace can be produced in batch in factories, the circular energy dissipation sections and elastic sleeves can be selected and combined according to the length requirement of the buckling restrained brace, and accordingly the modularized production and design of the core part can be achieved.					
87.	Pre-stressed anchor bar with detachable main bar	CN201686986	2010-04-21	ZHEJIANG HUAZHAN ENGINEERING RESEARCH & DESIGN INSTITUTE*	96 %
The utility model discloses a pre-stressed anchor bar with a detachable main bar, which mainly comprises a steel stranded main bar, an anchorage device, an anchor backing plate, a sleeve, an injection pipe, an anchorage body and a bearing head. The steel stranded main bar and the bearing head are connected in a threaded detachable manner. The threaded detachable connection is characterized in that a radial extrusion thread bushing is fixed onto the main bar, and the radial extrusion thread bushing and the bearing head are connected in a threaded detachable manner. A steel strand is used as a stress bar, when the anchor bar is used, connection of the anchor bar and the bearing head in a threaded manner is canceled by rotating the steel strand in order to achieve the purpose of detaching the anchor bar main bar. The thread bushing adopts a radial extrusion structure, and the connection method has the advantages of reliable connection and high strength connection, thereby ensuring connection strength of the steel stranded main bar and the bearing head.					
88.	Supported binding type composite insulation wall	CN1920201	2005-05-23	WU SHUHUAN	96 %
The invention relates to a bond thermal-insulated composite wall with support, wherein the inner end of concrete suspension beam support 2 is fixed at the upper part of concrete element 12 or inside the base wall 1; the outer side of upright steel bar 5 is arranged with metal network 4; the upper and lower ends of upright steel bar 5 are fixed at the upper and lower embedded iron elements relative to the outer end of support 2; between the outer side of insulated layer 3 and the outer side of metal network 4, there is an outer protective layer 7. The invention arranges the metal network at the outer side of upright steel bar, to improve the construction speed, and fixes the inner end of support 2 at the upper part of concrete element 12 or inside the base wall 1, with high construction quality and lower cost.					
89.	Shield tunneling construction method for n-shaped underground diaphragm wall	CN104314070	2014-10-16	HAINAN UNIVERSITY*	96 %
The invention discloses a shield tunneling construction method for an n-shaped underground diaphragm wall. The shield tunneling construction method comprises the following steps of step I, formulating a construction process flow; step II, performing the specific construction process: firstly, measuring and setting out; secondly, manufacturing a guide wall; thirdly, preparing and adjusting slurry; fourthly, trenching the underground diaphragm wall and performing bottom-clearing replacement; fifthly, manufacturing and hanging a GFRP (Glass Fiber Reinforced Plastic) reinforcement cage; sixthly, manufacturing and setting a bamboo reinforcement cage; seventhly, grouting underwater concrete; eighthly, constructing joints; ninthly, topping a joint pipe. The shield tunneling construction method disclosed by the invention has the beneficial effects that a tunnel door is not needed to be manually chiseled, so the construction period is greatly shortened; a soil body on the outer side of an envelope structure is not needed to be reinforced, so the construction cost of engineering is reduced; the envelope structure directly plays roles of retaining soil and stopping water at the shield tunneling stage, and the safety of the shield tunneling is greatly guaranteed.					
90.	Big self-supporting combined steel formwork and firewall construction method thereof	CN106193584	2016-07-07	SHANDONG TRANSMISSION & DISTRIBUTION ENGINEERING*	96 %
The invention provides a big self-supporting combined steel formwork and relates to the technical field of building formworks. The big self-supporting combined steel formwork comprises a portal supporting frame, a right-hand thread adjustment lead screw, a left-hand thread adjustment lead screw and formwork connectors. The portal supporting frame comprises portal frame structures composed of first supports and second supports, and the portal frame structures are connected through reinforcing supports. An operation platform is arranged on the second support at the topmost end of each section of the portal supporting frame. The big self-supporting combined steel formwork further comprises double-hook connectors and a firewall coping mold, wherein adjacent building formworks are connected through the double-hook connectors, and the firewall coping mold is mounted at the top of the building formwork. The invention further provides a construction method for constructing a bare concrete firewall through the big self-supporting combined steel formwork. By the adoption of the construction method, the problems of inclining, slab staggering, mortar leakage and the like caused after building formworks are assembled in the prior art can be solved; the construction speed is high, and mounting is convenient; and operation for field assembly of the steel formwork is easy, the degree of mechanization is high, and the construction cycle is short.					
91.	Plastering unit for housing construction	CN205918066	2016-08-26	ZHEJIANG TONGAN CONSTRUCTION*	96 %
The utility model discloses a plastering unit for housing construction, including base plate and bottom plate, the bottom both sides of base plate all are provided with the sleeve all through the top both sides fixed connection of support with the bottom plate on two supports, be provided with the board of plastering on the sleeve, the top of base plate is provided with the motor, the pivot and the bottom of initiative dish of motor are connected, the initiative dish is connected with the driven plate transmission through the belt, the bottom of driven plate is through the top fixed connection of a support section of thick bamboo with the base plate, be provided with the threaded rod on the driven plate, supreme and run through in proper order down and support a section of thick bamboo and base plate in the bottom of threaded rod to extend to the bottom and connecting block fixed connection of base plate.					
92.	3-d structure net and composit structure material using the net	WO200022215	1999-10-14	ASAHI DOKEN ASAHI TECHNO*	96 %
Invention-wise three-dimensional net made by warp knitting has high shape retainability in three-dimensional cords defining three-dimensional mesh spaces, capability of suppressing direction dependency, superiority in structural stability and pressure resistance, capability of retaining a suitable degree of elasticity and formation of three-dimensional cords simply by imparting tension, high void content, and lightweight, which are suitable for various applications. Invention-wise three-dimensional net formed by warp knitting comprises a first mesh web, a second mesh web and connecting yarns 3 connecting the first and second mesh webs 1 and 2, on front and back sides of the net, with a required spacing therebetween; further comprises three-dimensional cords each formed by braids on the first mesh web and the second mesh web 1 and 2 and by the connecting yarns 3 front-to-back-wise passed between the braids 11 and 12 of the first and second mesh webs 1 and 2, said first mesh web 1 having larger mesh openings than those of the second mesh web 2. At least partly in each of said three-dimensional cords 4, said connecting yarns 3 are passed from a single braid 11 on the first mesh web 1 to a plurality of braids 21 on the second mesh web 2 so that said three-dimensional cord 4 has a width of at least one mesh openings 12 on the first mesh web 1. <IMAGE>					

93.	Height bears secret component constructional device	CN207452890	2017-07-24	CENTRAL RESEARCH INSTITUTE OF BUILDING & CONSTRUCTION* CHINA JINGYE ENGINEERING*	96 %
The utility model discloses a height bears secret component constructional device, its constitution includes by last, the support chassis that lower connecting piece cover and carrier bar or stay tubeconstitute, a support chassis week side seal fixedly connected with geomembrane section of thick bamboo, go up that the connecting piece cover is equipped with into the thick liquid mouth or sealed fixedly connected with advances to starch oral siphon or check valve, the thick liquid pump piping through grafting or threaded connection or union mode with advance thick liquid mouthful or advance tostarch the oral siphon or check valve sealing connection and can be to slip casting in the geomembrane section of thick bamboo, fixed connection undertakes the load transmission of secret component in support chassis's carrier bar. Its aim at provides a secret member constructional device, and the device is applicable to complicated ground geological environment, can be applied to all kinds of civil engineering and building construction to the secret member that can make pile foundation, foundation treatment and ground anchor field increases substantially bearing capacity, and effectively promotes structural engineering's durability, reliably degree and security in reduce project cost.					
					
94.	Bamboo-wood composite ridge pole	CN201687116	2010-03-12	KUNMING UNIVERSITY OF SCIENCE & TECHNOLOGY*	96 %
The utility model relates to a bamboo-wood composite ridge pole. A solid round wood with proper size is used as a ridge, filling woods and filling gypsum are disposed inside cavities of roof slope bamboo components crossed at the wooden house ridge, and the solid round wood ridge is fixedly connected with the roof slope bamboo components through bolts penetrating through the solid round wood ridge and the filling woods, thereby forming the bamboo-wood composite ridge pole. The bamboo-wood composite ridge pole overcomes the shortages of easy deformation of raw bamboo sections and easy breakage of members at crossing of a fully raw bamboo building ridge and the roof slope members, and solves the problems of low strength of bolt connections, difficulty in guaranteeing reliability and construction, low construction efficiency and the like.					
					
95.	Flexible composite material used for paving roads on floppy wetlands	CN107881873	2017-12-29	CHANGSHA ZICHEN TECHNOLOGY DEVELOPMENT*	96 %
A flexible composite material used for paving roads on floppy wetlands comprises a shaping connecting component, a fiber thorn net and/or fiber thorn ropes, dry-mixed quick solidification mortar and fiber cloth or a fiber cloth bag. The slab surface of a flexible pavement slab is composed of the fiber cloth or the fiber cloth bag, the fiber thorn net is located between the fiber cloth or in the fiber cloth bag and fixedly connected with the edges or slab edges of the flexible pavement slab through the shaping connecting component, the fiber thorn ropes are located between the fiber cloth or interlayers of the fiber cloth and the fiber thorn net and fixedly connected with the edges or slab edges of the flexible pavement slab through the shaping connecting component, and a three-dimensional space fiber gap formed between the fiber cloth or the fiber cloth bag and the fiber thorn net and/or the fiber thorn ropes is filled with the dry-mixed quick solidification mortar. The composite material is used for paving the passing roads on the floppy wetlands or marshlands and has the beneficial effects of being convenient to transport, capable of being used for paving and splicing the roads efficiently, capable of being quickly hardened and solidified to form the passing roads and the like.					
					
96.	Reinforcement joint structure with one end side open type sleeve	JP2011006876	2009-06-24	JOINT STAR*	96 %
PROBLEM TO BE SOLVED: To completely eliminate the entry of placed concrete mortar at a connection part between a reinforcement and a sleeve even if adopting a deformed reinforcement such as a low-cost bamboo joint reinforcement and to form a sleeve as a forged product to reduce the cost of a reinforcement joint. SOLUTION: The sleeve 1 is formed as the forged product. A solid part 6 having a diameter smaller than the outer diameter of the sleeve but not smaller than the outer diameter of the reinforcement 2 is formed, and the solid part 6 and a first reinforcement 2 are integrated by frictional pressure-welding at the abutting parts of both parts. In the forged product, a peripheral wall 10 includes opening seats 11 to open a grout injection port 12 and an air exhaust port 13, but a grout injection cylinder part and an air exhaust cylinder part projected from the peripheral wall 10 are not integrally formed. Resin adapters 17 formed with a grout injection cylindrical body 15 and an air exhaust cylindrical body 16 and protrusively provided at the peripheral wall of the sleeve 1 are seated at the opening seats 11 after frictional pressure-welding treatment to allow connection of communicating pipes.					
					
97.	Precombined composite supporting frame construction method and its structure	CN1948653	2005-10-12	WANG YOUCHENG	96 %
This invention relates to a kind of pre-group combinative construction method and its structure. The construction steps are: the two columns are put in parallel which maintain an appropriate distance. They are C style of stamping steel pieces. It sets perforation equidistant at the column side, the top of the column fixes portfolio deduction parts; complex connecting rod embeds in column hole of the aforementioned group fixed, which makes the two columns and the plural conjunction pole a body; in the outside of the plural support tube fix the combinative enhanced network, and its surface is covered with a layer of cement mortar which constitutes a group pre-group combined structure. When applied in building structures, two or more groups will be mutual tightly arranged over the group combined backstop lock, and the sign pillar which uses the exploitation buttons to connect a piece to combine two sets of prepare a of type combination, and the combination of the plural set to prepare a set of type combination to prop up continuously, then to the completion of the pre-combination group combined backstop top of the column combination plate coverage. The cover plate and mortar forms a hollow layer.					
					
98.	Horizontal dry powder mortar stirrer	CN207509470	2017-11-27	WANG SHUIHU	96 %
The utility model discloses a horizontal dry powder mortar stirrer, it includes and a pay -off section of thick bamboo (1) is equipped with feed inlet (2) on a pay -off section of thick bamboo (1), a pay -off section of thick bamboo (1) is outer to be provided with first motor (3), is connected with pay -off axle (4) on first motor (3), installs pay -off spiral shell area (5) on pay -off axle (4), a pay -off section of thick bamboo (1) one side is connected with stirring urceolus (6), is provided with stirring inner tube (7) in the stirring urceolus (6), be provided with (mixing) shaft (8) instirring inner tube (7), have a plurality of mixing arms (9) on (mixing) shaft (8), have the connecting of a plurality of stirring vane of being connected with (11) pole (10) on mixing arm (9), pay -off axle (4) are connected with (mixing) shaft (8) through shaft coupling (12), be equipped with on the stirring urceolus (6) discharge gate (13), outer be provided with bath device (14) and second motor (15) of stirring urceolus (6). The utility model discloses can not only improve stirring efficiency, still have and change conveniently and wash convenient advantage.					
					
99.	Improved plasterbase and methods of application	GB708852	1951-01-18	GEORGE CARPENTER*	96 %
708,852. Lathing; building units. CARPENTER, G. Jan. 17, 1952 [Jan. 18, 1951 ; Oct. 15, 1951], Nos. 1384/51 and 23920/51. Classes 20 (4) and 87 (1). [Also in Group VIII] A laminated material for use as a base for plaster consists of a sheet 2 of paper, felt, corrugated cardboard, fibreboard, or strawboard to which a reinforcement of reticulated metal strips 1, corrugated or deformed for increased rigidity, is secured by pronged metal clips or by passing through slits 5 formed in the sheet 2, while a further set of strips 4, crossing the strips 1, is located between them and the sheet 2. The reinforcing strips 1, which may be of expanded metal or perforated strip steel, corrugated longitudinally or formed as angles, tees, or channels, are additionally secured to the sheet 2 by turning them over at the ends 3 to grip the sheet. The cross reinforcing strips 4 may be similar to strips 1 or may be of steel bar, wood lath, or bamboo; the whole or part of the cross reinforcement may be in long lengths inserted, after the plaster base has been fixed, so as to connect two or more sheets. The sheet 2 may be perforated or slit to form short, ribbon-like ends of sheet material to key with mortar or cement. When the perforated and reinforced material is used as a lathing for the application of mortars to one side only, e.g. for ceilings, it may be backed by unperforated sheet material to prevent pattern staining or to act as insulation. A corner bead for use at angles is made of plaster or concrete reinforced with reticulated metal strip which is used to attach it to the reinforcement of the plasterbase. Building units may be made by casting plaster or cement upon one or between two sheets of the plaster base, together with reinforcing bars or stiffeners. The reticulated metal may project beyond the edges of the units, and the projections on adjacent units may be connected by clips, dogs, or steel strip or may simply overlap, before the joints between the units are filled with cement or mortar. The plasterbase may be used as a permanent shuttering, in place of the usual wooden or steel formwork, for concrete cast as columns, beams, floors, or roofs; it may form at the same time a casing for steel columns, beams, trusses &c.					
					

The invention provides a reverse structural steel and **bamboo** splint soil retaining construction method. The reverse structural steel and **bamboo** splint soil retaining construction method comprises the following steps that slide-resistant piles are constructed; earthwork excavation is carried out on a first layer by 3 meters of the construction flat base; temporary supporting is carried out on slopes by **connecting** the slide-resistant piles in a butted manner and installing structural steel and **bamboo** splint soil retaining structures; the second step and the third step are circulated every 3 meters till the pile top elevation of an underground building is reached; main barricades, barricade waterproof layers and protective layers are constructed sequentially; earthwork which is 0.5 m high is backfilled and compacted; and the sixth step is circulated every 3 meters from bottom to top till all backfilling is completed. By means of the reverse structural steel and **bamboo** splint soil retaining construction method, the construction cost can be greatly saved, and the construction period can be remarkably shortened.

