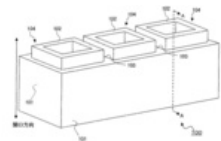
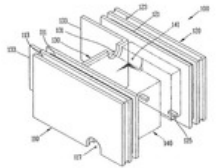
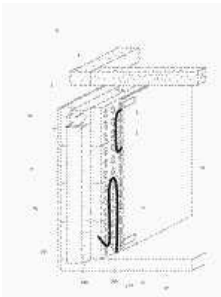
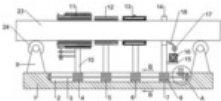
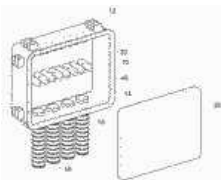
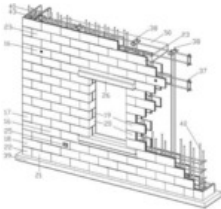
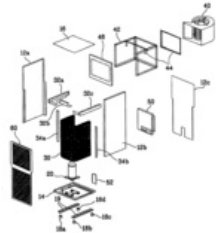
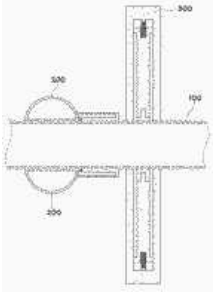
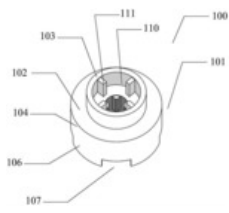
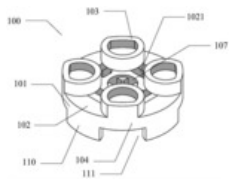
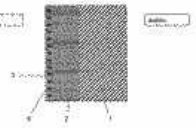
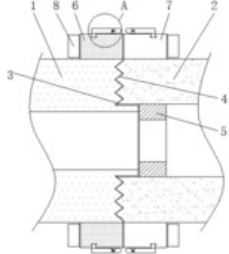
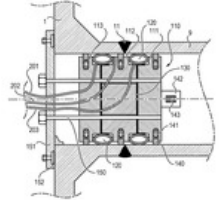
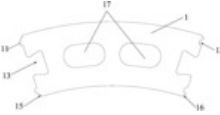
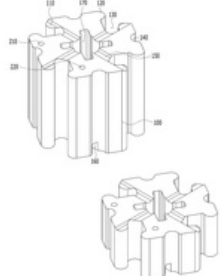
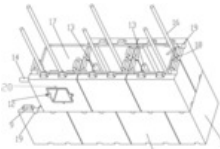
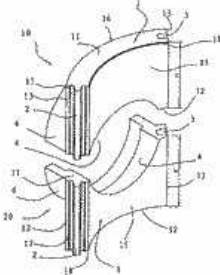
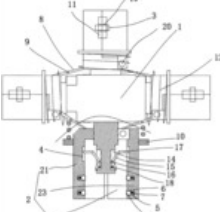
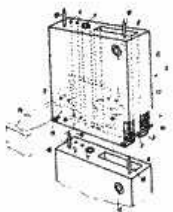
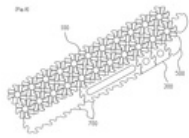
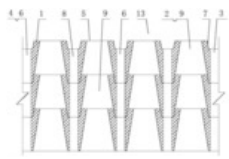
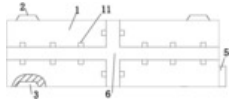
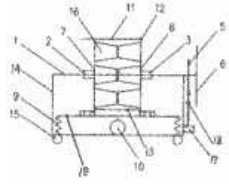
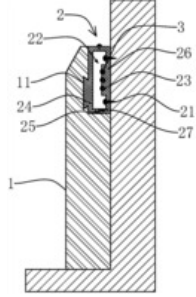


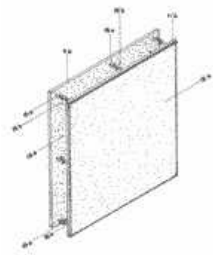
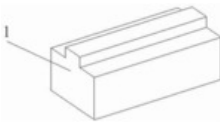
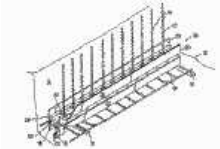
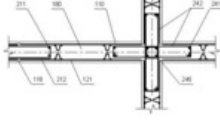
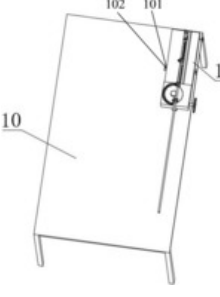
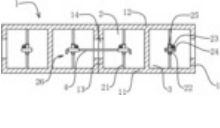
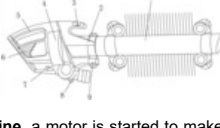
#	 	Title	Publication number	Publ. date	Applicant/Assignee	
1.		Assembled building block, assembled building block lock anchor wall building system and construction method thereof	CN110616846	2019-12-27	LI ZHIWEN	100 %
The assembled building block includes two kinds of common assembled building block and energy saving assembled building block. The assembled building blocks are characterized in that the building blocks adjacent to each other in the vertical direction are in mortise-tenon joint through tongue-and-groove tenons 5 arranged on the upper surface and the lower surface of the side plate 1 and the end side plate 8, water stop adhesive tapes 3 are arranged in concave tenons on the inner sides of the bottom surfaces of the side plates and the end side plates, and water stop adhesives 3 are vertically arranged on the side plates on the two sides of the connecting surface of the building blocks adjacent to each other in the horizontal direction and on the end. The assembled building blocks are all in a single-rib connecting side plate and end opening structure, do not influence the connection of structural vertical steel bars, and can be combined into a wall body in various structural forms; the building block has simple structure, easy processing and production and convenient transportation; the construction is simple and efficient, the effect of assembly construction is achieved by using the traditional construction method, the connection of the wall adopts a vertical anchor and vertical lock structure, the wall is restrained, the integrity and stability of the wall are improved, and the anti-seismic performance of the wall is improved. The assembled building blocks can be further processed into common decorative integrated assembled building blocks and energy-saving decorative integrated assembled building blocks, and the assembled wall body is a common decorative integrated assembled building block lock anchor wall body and an energy-saving decorative integrated assembled building block lock anchor wall body, so that the integration level of the wall body is greatly improved, and the building industrialization is favorably realized.						
2.		Built-in type joint box for air-conditioner pipe connecting	KR20110068301	2011-06-22	GARAM ARCHITECTS	99 %
PURPOSE: A built-in joint box for an air-conditioner pipe connection having a two-layer structure is provided to lay a high-pressure pipe and a low-pressure pipe in a two-layer structure to improve space utilization efficiency of the built-in joint box. CONSTITUTION: A built-in joint box for an air-conditioner pipe connection having a two-layer structure comprises a body(10), a first block(30), and a second block(40). The front side of the body is opened. A space for laying pipes of an air conditioner is formed in the body. A plurality of pipe holes(16) is formed in the bottom face of the body. The pipes of the air conditioner are inserted into the pipe holes. The first block is fixed to the upper part of the inner wall of the back side of the body. A fixing groove is formed in the front of the first block. The end of a low-pressure pipe is fixed through the fixing groove. The second block is fixed to the inner wall of the back side of the body corresponding to the lower part of the first block. The end of a high-pressure pipe is fixed through the fixing groove of the front of the second block. COPYRIGHT KIPO 2011						
3.		Integral equipment for surface maintenance of building pipelines	CN107288333	2017-10-24	WENZHOULISHENG STEEL INDUSTRY	99 %
The invention provides integral equipment for surface maintenance of building pipelines. The equipment includes a base, both ends of the base are fixedly connected with a supporting base separately, the supporting bases are rotatably connected with supporting rollers, and a pipeline is erected between the two supporting rollers, wherein the base is provided with a mobile device which comprises a mobile groove with an opening facing upwards; the mobile groove is internally provided with a first mobile block, a second mobile block, a third mobile block and a fourth mobile block which are sequentially arranged from left to right; threaded through holes are formed in the first mobile block, the second mobile block, the third mobile block and the fourth mobile block; the threaded through holes are all internally in threaded connection with a threaded rod, both ends of the threaded rod are rotatably connected with the two ends of the mobile groove, and the right portion of the threaded rod is fixedly connected with a first bevel gear. The integral equipment for the surface maintenance of the building pipelines has the advantages of having an integrated function of rust cleaning, polishing, coating and drying, improving maintenance efficiency of the pipelines to a great degree, and having a certain value of popularization and application.						
4.		Construction element for constructing e.g. heating wall of building, has studs anchoring pipelines and sheaths before installing facing, where height of each stud defines interstice between front wall and facing to receive	FR2949240	2011-02-25	DILON RICHARD PATTIER OLIVIER	99 %
The element (100) has a front wall (110) turned towards an inner side of a wall (M) of a dwelling or a building, where the element is made of material i.e. expanded polystyrene, whose thermal conductivity is less than or equal to 0.05 Watts/millikelvin. Studs (260) are projected from the front wall to fix an inner facing (Pi), where height of each stud defines an interstice (I) between the front wall and the facing to receive water and gas pipelines and sheaths (C) e.g. electric and electronic connection sheaths. The studs anchor the pipelines and the sheaths before installing the facing. An independent claim is also included for a method for constructing a wall. (From FR2949240 A1)						
5.		Building block and method of bricking a wall using the same	EP2092133	2009-08-26	MITSUMI ELECTRIC KIM KANG SUCK KIM KYU HUE KIM Kang-Suck KIM Kyu-Hue	99 %
The present invention relates to a building block serving as a mold when carrying out civil engineering and construction works and forming an external appearance of a structure, a building structure and a method of bricking a wall using the same. The building block comprises first and second exterior walls facing each other and spacing from each other in back and forth directions, and a connecting portion connecting the first and second exterior walls to each other and having an upper portion provided with a first mounting groove for mounting a width-directional reinforcing bar. Here, concavo-convex coupling portions are formed at inner peripheries of the first and second exterior walls, for concavo-convexly coupling to each adjacent block, and here, leakage preventing recesses are respectively formed at outer peripheries of the first and second exterior walls.						
6.		Building block, unit board for building block, covering member for building block, base body for building block, pressure welding tool for building block, wall body constructio...	JP2004278290	2004-10-07	7 6 3-2 Higatsuda-machi, Matsue City Shimane prefecture Mishima Masahiko	99 %
PROBLEM TO BE SOLVED: To provide a building block which facilitates construction of a high-strength building. SOLUTION: The building block 100 comprises an outer cylinder body 101 and three inner cylinder bodies 102 which each have the same length H in an opening direction and a rectangular parallelepiped contour. The inner cylinder bodies 102 are located in parallel with each other having their openings arranged on the same side, and inscribed on the outer cylinder body 101 in a manner being shifted by a predetermined length h from the outer cylinder body 101 in the same direction. Further a thickness t1 of the outer cylinder body 101 is the same in each surface, and the inner cylinder bodies 102 are arranged in the outer cylinder body in a manner being spaced twice the thickness of the outer cylinder body away from each other. By virtue of this construction, the building block 100 are easily transported or piled up, and the building blocks can be tightly and sequentially fitted to each other, which allows the building blocks 100 per se form a wall, a column, and a brace. COPYRIGHT: (C)2005,JPO&NCIPI						



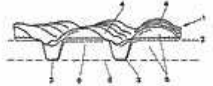
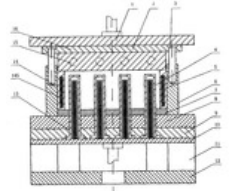
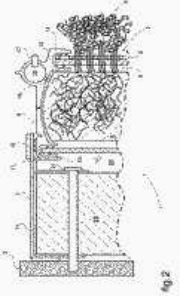
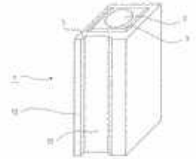
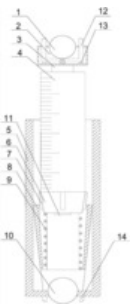
14.	Built-in type outdoor unit for air conditioner	EP1604152	2005-12-14	LG ELECTRONICS KIM GYU KIM KYEONG HO KIM TAE GEUN KIM YANG HO	98 %	
15.	Installation structure for drain pipe of building having fire spreading prevention apparatus	KR101670360	2016-10-31	DAE MYUNG ELECTRIC CONSULTANTS	98 %	
16.	Building block and building block assembly comprising same	CN209155116	2019-07-26	SHANGHAI PUTAO TECHNOLOGY	98 %	
17.	Building block and building block assembly comprising same	CN208990231	2019-06-18	SHANGHAI PUTAO TECHNOLOGY	98 %	
18.	Inner wall for insulation	EP1657496	2006-05-17	HAASE WERNER	98 %	
19.	Building water supply and drainage pipeline	CN208871206	2019-05-17	SHEN JIANWEI	97 %	

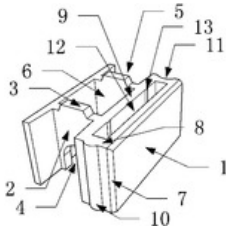
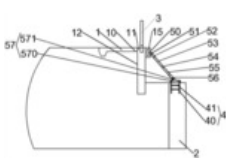
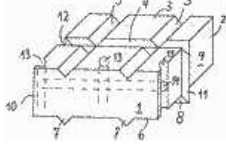
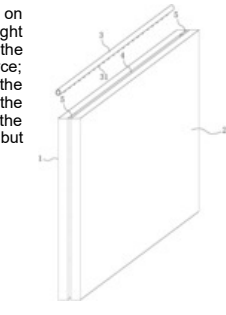
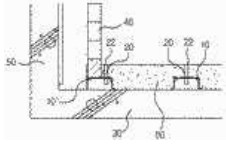
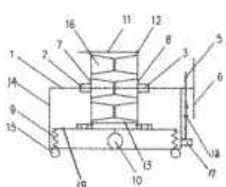
20.	Pipe-sealing device for isolating a tank, a pipe or a set of tanks and pipes	CN2981754	2016-02-10	EDF - ELECTRICITE DE FRANCE	97 %
A plug for sealing and isolating a pipe (9) having an inner wall forming a substantially cylindrical cavity with a so-called first diameter, the plug comprising: a main body (110) having substantially the shape of a cylinder in order to allow the seal to be inserted into the cavity; sealing members (120) that project around the side wall of the cylinder (110) defining the shape of the main body, the main body (110) comprising a plurality of assembly elements forming the cylinder (110), the plug comprising a position-holding system comprising a plurality of non-slip pads (140; 340) and force-measurement elements (342).					
					
21.	Arc-shaped well wall body building block and hollow cylindrical well wall body	CN204385863	2015-06-10	XUSHUI HUAGUANG MUNICIPAL CONSTRUCTION MATERIALS	97 %
The utility model provides an arc-shaped well wall body building block and a hollow cylindrical well wall body, wherein, the an arc-shaped well wall body building block comprises: a front cambered surface, a rear cambered surface, a top surface, a bottom surface, a left end face and a right end face, a positioning bulge is arranged on one of the left end face and the right end face, the other is provided with a locating plot that matches the positioning bulge on an adjacent arc-shaped well wall body, the left end face and the right end face are both provided with dovetail grooves, and the dovetail grooves of the adjacent arc-shaped well wall body building blocks can be enclosed into a containing space used for filling mortar. The arc-shaped well wall body building block provided by the utility model effectively increases the connecting strength between the adjacent arc-shaped well wall body building blocks, then effectively solves the problem that the bottom of an inspection well can not bear greater pressure when a water closing experiment is conducted under the condition that the inspection well is not backfilled, and enhances the entire strength of the well body.					
					
22.	Assembly-type earthquake-resistance retaining wall block system	WO2018/174436	2018-09-27	ECOTOP PLUS KIM JONG CHUNG ANG UNIVERSITY INDUSTRY ACADEMIC COOPERATION FOUNDATION ECO TOP	97 %
The present invention relates to a retaining wall construction block having a coupling protrusion and a coupling groove provided on a side surface thereof and, more particularly, to an assembly-type earthquake-resistance retaining wall block system and a method for constructing an assembly-type earthquake-resistance retaining wall block using the system, the system comprising: coupling protrusions (110, 120) and coupling grooves (130, 140) formed together on respective surfaces of a main block (100); a retaining pin (230) configured such that, when main blocks (100) are stacked one above the other, the upper block and the lower block are connected and retained; upper surface retaining pin grooves (210, 220) provided on the upper surface of the main block (100) such that, when main blocks (100) are stacked one above the other, the lower part of the retaining pin (230) can be inserted therein, thereby connecting and retaining the upper block and the lower block; and a lower surface retaining pin groove (160) provided on the lower surface of the main block (100) such that the upper part of the retaining pin (230) can be retained therein along a straight line, wherein the upper block (320) of two blocks stacked continuously is positioned backwardly with regard to the lower block (310) of the two blocks stacked continuously by a predetermined distance, which corresponds to 1/10 the height of the main block (100), thereby making it possible to construct a retaining wall which is prevented from being pushed backward, and which is stable and robust.					
					
23.	Fabricated wall and building blocks thereof	CN209129249	2019-07-19	ZHU XINWEI	97 %
The utility model relates to a fabricated wall and building blocks thereof. The fabricated wall body comprises building block layers which are arranged in an up-down stacked mode. Each building blocklayer comprises building blocks which are arranged in a straight line; the building block comprises two wall surface parts which are arranged in parallel to form a wall surface of a wall body, and further comprises a rib part which is arranged between the two wall surface parts in a manner of being perpendicular to the wall surface parts, the wall surface parts are provided with mounting holes formounting a junction box, and the rib part is provided with a wiring hole for a wiring pipe to penetrate through. The wall surface part of the building block is provided with the mounting hole for thejunction box to penetrate through, and the rib part is provided with the wiring hole, so that when a wall body is built, a worker can directly mount the junction box and the wiring pipe in the wall body, the worker can mount the wiring box and arrange the wiring conveniently, and the wiring can be pre-mounted in the wall body.					
					
24.	Inspection well pipe hole concrete building block	CN2725368	2005-09-14	XUSHUI HUAGUANG MUNICIPAL CONSTRUCTION MATERIALS	97 %
The utility model relates to an inspection well pipe hole concrete building block comprising a building block effective part, a convex part and a concave part, wherein, the building block effective part comprises a top surface, a bottom surface, two end surfaces, an intrados and an extrados; the convex part and the concave part are respectively formed into shape on the two end surfaces of the building block effective part; the convex part and the concave part of each building block can be mutually inserted. The building block is a part of a well hole wall body with an inner diameter from 600 mm to 2000 mm; the height of the building block is from 250 mm to 1000 mm, and the width is from 100 mm to 300 mm; an arc-shaped notch is also formed into shape in the building block effective part. After a plurality of building blocks are assembled together, the internal notches can form a circular hole with an inner diameter of 200 mm to 800 mm in the well hole wall body. A circular hole path can be conveniently built in the hollow cylinder surface by the building blocks. The construction is simple and convenient; the efficiency of construction is high, and the architectural materials are effectively saved.					
					
25.	Steel pipe connecting and fixing device for building	CN106988524	2017-07-28	ZHOU QINGCHUAN	97 %
The invention discloses a steel pipe connecting and fixing device for a building. The device comprises a cross-shaped connecting frame and four steel pipe clamping fixing frames, the steel pipe clamping fixing frames comprise bases and cover plates, arc-shaped clamping grooves matched with one another are formed in the top surfaces of the bases and the bottom surfaces of the cover plates, one ends of the bases are fixed to the middle of an end rod of the cross-shaped connecting frame, at least three grooves are evenly formed in the surface of the end rod of the cross-shaped connecting frame, steel pipe inner wall pressing abutting V-shaped blocks are arranged in the grooves, the corners of the steel pipe inner wall pressing abutting V-shaped blocks are connected in the grooves through rotating shafts, transverse abutting plates are integrally formed at the top ends of the steel pipe inner wall pressing abutting V-shaped blocks, return springs are arranged between the bottom ends of the steel pipe inner wall pressing abutting V-shaped blocks and the grooves, and one end of the cover plates are connected to the middle of the end rods of the cross-shaped connecting frame through pin shafts. The steel pipe connecting and fixing device for the building is reasonable in structure arrangement, and the technical defects of deviating or rotating is not liable to appear; and the use stability and reliability are greatly improved, the applicability is high, and the practicability is good.					
					

26.	Drainage pipeline internal diameter measurement structure for oil extraction building construction	CN107560527	2018-01-09	CHEN LEI	97 %
The present invention discloses a drainage pipeline internal diameter measurement structure for oil extraction building construction. The structure comprises a fixed barrel and a spacing barrel installed in the fixed barrel, a steel ball is rotationally arranged at the bottom of the spacing barrel, the steel ball locally protrudes out of the bottom end of the fixed barrel, a spring is installed in the fixed barrel, the structure also comprises a truncated-cone-shaped movable block connected with the movable end of the spring and a fixed seat, the movable block is connected with the fixed seat through a graduated scale, a plurality of projections are arranged at the outer wall of the movable block, a plurality of grooves matching with the projections are arranged at the inner wall of the fixed barrel, and a rolling bead is rotationally arranged at the upper surface of the fixed seat. The axis of the fixed barrel and a straight line where the diameter of a pipeline are superposed, data on the graduated scale is read out, the data is displacement generated by rectilinear motion of the movable block, and the internal diameter of the pipeline can be obtained by subtracting a linear displacement generated by the movable block from a linear distance of the bottom end of the steel ball and the top end of the rolling bead.					
					
27.	Prefabricated block for building services shaft - has projections bearing on each storey floor slab and duct sections for connection to service pipes	FR2528477	1983-12-16	SERMONDADAZ JEAN	97 %
The shaft has a parallelepipedal block plastics foam central core (3) traversed by pipe and conduit sections (6,7,8) extending over the total block height, that communicate with respective tubes (9,10,12) exiting in at least one block lateral face. A three dimensional metal trellis (4) surrounds all the core faces, a lightweight concrete fire resistant cover (5) covers the trellis, and pointed rods (18) fit adjacent block sockets. Two horizontal rods (15) parallel to the block small vertical faces and near the plane of these faces, traverse the metal trellis, project beyond the block large lateral faces, and form slab bearings.					
					
28.	Retaining wall block and construction method thereof	WO2016/006748	2016-01-14	ECO TOP	97 %
The present invention relates to an eco-friendly retaining wall structure having a pedestrian passage or an ecological corridor for architectural complex. Provided is a method for constructing a retaining wall block using a retaining wall block, the method comprising: a basic step for performing bed excavation on the ground, filling rubble therein and tamping the rubble to thereby form a level surface; a basic block installation step for continuously aligning retaining wall blocks on the tamped rubble in such a manner that the rectangular sides are in contact with each other; a stacking step for arbitrarily selecting another retaining wall block, stacking the same in multiple stages on the top of the aligned retaining wall blocks, wherein a single or at least one selected retaining wall block is combined so that the stacked height can be constant, and constructing upper and lower blocks by a contact combination of a hooking jaw and an engagement jaw formed on the retaining wall block to thereby form a retaining wall structure; a reinforced grid installation step for connecting and installing a reinforced grid on the top surface of the stacked retaining wall structure; a repeated stacking step for repeating the stacking step and the reinforced grid installation step on the retaining wall structure to which a reinforced grid is connected to thereby construct a retaining wall structure of a predetermined height; and a closing step for installing a closing block on the uppermost layer of the repeatedly stacked retaining wall structure.					
					
29.	Anti-seismic wall based on mortar-free building blocks	CN105696727	2016-06-22	HUNAN UNIVERSITY OF SCIENCE & TECHNOLOGY	97 %
An anti-seismic wall based on mortar-free building blocks comprises a unit wall body formed by assembling and building the building blocks. A conical pipe cavity and a rectangular cavity are formed in the unit wall body. According to the technical scheme, pipelines are distributed in the unit wall body, concrete is poured into the unit wall body, and prestressed tendons are arranged in the unit wall body, so that fast and accurate locating of building of the building blocks and generalized and standardized operation are achieved. The general problems that according to an existing geometrical interlocking mortar-free building block, stress is concentrated, interlocked and inter-embedded clearances are uncertain, locating errors are large, the wall building quality is poor, and cracks are likely to be generated are solved well. The anti-seismic wall is suitable for civil and industrial masonry structure buildings, and can be applied to earthquake fortification regions after the measures of hole casting concrete or prestressed tendon distribution and the like are taken according to practical conditions.					
					
30.	Building brick for interior wall convenient to wiring	CN208701993	2019-04-05	HUZHOU DEHAH NEW BUILDING MATERIALS	97 %
The utility model discloses a building brick for interior wall convenient to wiring, including that the cross -section is the brick body (1) of rectangle structure, being equipped with a plurality of symmetrical arrangement locating piece (2) on the brick body (1), the brick body (1) lower extreme is equipped with and locating piece (2) matched with constant head tank (3), and both ends are equipped with respectively and mutually support and be the vertical dovetail groove of arranging (4) and trapezoidal arch (5) from top to bottom about the brick body (1), the both sides face all is equipped with wiring groove (6) that are cross setting around the brick body (1). The utility model has the characteristics of the wiring is convenient and can effectively reduce workman intensity of labour.					
					
31.	Gypsum hollow building block of 10 cm thickness wall and its brick making machine	CN2746028	2005-12-14	ZHOU XIANYUE	97 %
The utility model relates to a gypsum hollow block brick for 10 cm-depth walls and a brick making machine thereof, which comprises a supporting frame, a vibrator, a motor, a worm shaft and brick die body. The utility model is characterized in that a bottom plate of the supporting frame is provided with two guide rails supported by a spring and the vibrator; the brick die body is supported by pulley wheels on the guide rails; the supporting frame is provided with the worm shaft which is provided with screw threads opposite to each other at both ends; the worm shaft penetrates through the brick die body and is engaged with worm wheels on two side plates of the die body; a bottom plate of the brick die body is provided with three partition plates; the two side plates are respectively provided with three through-hole die bosses; one side plate is provided with a convex key; the other side plate is provided with a recess; the convex key and the recess are also provided with line groove bosses which bring convenience to put power cords, communication lines, water pipes and gas pipes. The brick making machine can form four hollow gypsum block bricks of 50*18*24 cm<3> once, mortises and tenons are used for connecting the bricks, the upper and the lower end surfaces of the brick body are provided with line arrangement grooves, and the wall bricked is smooth. The utility model can directly brush 888 or 929 coating materials, and the cost of the wall is lower than the traditional clay solid brick. The utility model can be used as a bearing wall for lower houses, a non-bearing wall for higher houses and a partition wall for rooms.					
					
32.	Wiring structure is secretly adorned to building	CN206401845	2017-08-11	WENDENG LANDAO BUILDING ENGINEERING	97 %
The utility model provides a wiring structure is secretly adorned to building belongs to the wiring structure field. It has been solved the current wiring structure that secretly adorns and has maintained trouble problem. This wiring structure is secretly adorned to building includes that the skirting line back is equipped with the draw-in groove along the skirting line of wall setting, still includes a plurality of off and the fixture block screw connection, and the fixture block is hollow structure, and is equipped with the through wires hole in the fixture block, is equipped with the solidus groove in the through wires hole, and the fixture block passes through screw along wall equipartition, and the skirting line passes through the draw-in groove to be fixed on the wall with the fixture block cooperation. At first fix the electric wire at the solidus inslot to pass through screw along wall equipartition with the fixture block, later pass through the draw-in groove with the skirting line and fix on the wall with the fixture block cooperation, therefore the electric wire secretly adorn in the fixture block, can combine together with the skirting line, but also can utilize fixture block letter easily fixable electric wire alone, consequently used the ten minutes convenience.					
					

33.	Precast concrete wall form block	WO2006/073319	2006-07-13	CRISOLOGO FERDINAND D	97 %
The present invention relates in general to a new type of construction material that greatly reduces the time and cost of constructing a house, building or wall by providing a pre-cast concrete wall form block made up of a pair of concrete panel provided with ingenious reinforcing material such as bamboo sticks, a layer of finishing on its outer surface and a number of pre-deleiminedly arranged dowel disposed on the inner rough surface when assembled together creates a space in between that allows the installation of the electrical and plumbing pipes before filling up said space with filling materials such as cement mortar and the like that provides an instant wall without the need for costly finishing and painting jobs afterwards.					
					
34.	Assembled building block retaining wall	CN207348087	2018-05-11	YU JIAHUAN	97 %
The utility model relates to a foundation engineering field, in particular to assembled building block retaining wall. It has been solved, and the retaining wall engineering time is long among the prior art, the work progress is complicated, construction quality is uneven, the unable recycle's of construction material problem. Concrete block including five kinds of differences: concrete block unitno. 1, concrete block unit no. 2, concrete block unit no. 3, concrete block unit no. 4 and concrete block unit no. 5, concrete block unit no. 1 is followed length direction and is provided with the strip arch as basement building block, its upper portion, concrete block unit no. 2 with the building block is packed in three conducts of concrete block unit, concrete block unit no. 4 with capstone is pressed in five conducts of concrete block unit, when piling up, the pinning can effectively be agreed with with the recess of upper building block lower surface to the arch on lower floor buildingblock upper portion. The retaining wall building block is pieced together according to on-the-spot actual need when taking in the assembly, pieces together and takes various combination shapes.					
					
35.	Element based foam and concrete modular wall construction and method and apparatus therefor.	EP0658233	1995-06-21	③ UNIQUE DEVELOPMENT FAREED M SALAHUDDIN FARID M SALAKHUDDIN SALAHUDDIN SALAHUDDIN FAREED M 3 more...	97 %
An element based wall construction, process of modular construction and apparatus for constructing structures of spaced concrete cylinders (10) and beams (14, 100) and foam insulating blocks (50, 60). The wall construction includes spaced, vertical concrete cylinders (10) interconnected by horizontal concrete beams (14, 100), reinforced by centrally located reinforcing bars (42), with a pilaster (12) projecting inwardly beyond the cylinders (10) and beams (14, 100) to support roof and floor joists or trusses, and insulating foam blocks (50, 60) occupying the spaces between cylinders (10) and beams (14, 100). The process includes the construction of concrete column (10, 300) and beam (14, 100) forming assemblies interspersed with insulated blocks to form a complete wall structure for a building with exposed pilaster channels (200) at each floor and roof level connected to the beam (14, 100) and column (10) defining apertures, stabilizing the structure, and substantially continuously pouring concrete into the channels to create a unitary wall structure.					
					
36.	Exempt from to tear open template concrete shear wall structure building	CN209620330	2019-11-12	③ ZHONGQINGDA TECHNOLOGY HOLDING	96 %
The utility model relates to an exempt from to tear open template concrete shear wall structure building is equipped with the shear force wall body, the shear force wall body mainly comprises the solid template of the steel bar truss who is located the wall body both sides and the concrete layer of pouring between the solid template of steel bar truss in both sides, the solid template of steel bar truss includes the panel and is located the inboard reinforcing bar net of panel and steel bar truss, the panel is non-metallic face panel, reinforcing bar net and steel bar truss solidify in the concrete layer, be equipped with corresponding steel bar connection frame in the various wall body node respectively. The construction method of the shear wall body comprises the steps of template installation, template fixing, concrete pouring, wall body maintenance and the like. The utility model discloses be favorable to reducing the work load and the working strength of construction, reduce the influence degree of human factor to building quality, reduce construction cost, make things convenient for the pipeline arrangement on the building, alleviate or avoid because of laying the negative effects that the pipeline brought for the wall body.					
					
37.	Pipe machining platform for building construction and pipe bending equipment of platform	CN109570290	2019-04-05	③ CHINA CONSTRUCTION EIGHTH ENGINEERING DIVISION	96 %
The invention provides a pipe machining platform for building construction and a pipe bending equipment of the platform. The machining platform comprises a workbench and the pipe bending equipment fixedly connected onto the workbench; the pipe bending equipment comprises a casing as well as a pipe fixing mechanism, a pipe bending mechanism and an angle adjusting mechanism which are arranged on the casing; the pipe fixing mechanism is used for clamping and fixing pipes to the equipment for subsequent pipe bending operation; and the pipe bending mechanism is used for performing pipe bending machining on the fixed pipes. According to the machining platform, the pipe bending angle can be controlled by the aid of the pipe bending equipment without intentional observation, so that the working efficiency can be improved, and the mis-operation rate can be reduced.					
					
38.	Interior wall building block of exempting from to plaster	CN205742698	2016-11-30	② QINGJIAN INTERNATIONAL	96 %
The utility model provides an interior wall building block of exempting from to plaster belongs to the building block field. It has solved the unsafe problem in current building block location. This interior wall building block of exempting from to plaster, which comprises a body, the body includes preceding lateral wall, back lateral wall, left side floor, right side floor and well floor, preceding lateral wall, back lateral wall, left side floor and well floor left side are surrounded and are formed left pouring cavity, preceding lateral wall that left side pouring cavity corresponds and back retaining thread pole between the lateral wall, still include the connecting seat, be equipped with three perpendicular to each other connecting hole no. 1 on the connecting seat, connecting hole no. 2 and connecting hole no. 3, connecting hole no. 1 is worn to establish on the threaded rod, it has the nut that supports respectively at the connecting seat both ends to go back the spiro union on the threaded rod, it perforates to be equipped with the in-line on the floor of a left side, and the length direction that bores a hole is perpendicular with preceding lateral wall, connecting hole no. 3 projection on left floor is located the perforation, the building block is the bilateral symmetry structure. This building block is conveniently fixed, and can eliminate the error that self arouses.					
					
39.	Novel building material pipeline cleaning equipment with telescopic device	CN108080365	2018-05-29	② WANG JIONGFENG	96 %
The invention discloses novel building material pipeline cleaning equipment with a telescopic device. The novel building material pipeline cleaning equipment structurally comprises a cleaning mechanism, an oblique plate, a first limiting clamp, an arc bulge, a hand-holding port, a label bar, a gear switch, a second limiting clamp and a bulge body; and the cleaning mechanism and the oblique plate are fixedly connected, the bulge is mounted at the position, close to the tail end of the cleaning mechanism, of the oblique plate, and the first limiting clamp and the second limiting clamp are fixedly mounted at the upper end and the lower end of the head end of the oblique plate. The novel building material pipeline cleaning equipment with the telescopic device is provided with a gear-adjusting mechanism, an unfolding mechanism, an absorption mechanism, a main transmission mechanism, a telescopic device and a hairbrush unloading and replacing mechanism, the outer diameter of a hairbrush is adjusted by using the gear-adjusting mechanism, the unfolding mechanism and the telescopic device, so that the hairbrush is in sufficient contact with the inner wall of a to-be-cleaned pipeline, the cleaning efficiency is improved, the first limiting clamp and the second limiting clamp can further be used for hanging the equipment at a pipe opening of the pipeline, a motor is started to make the novel building material pipeline cleaning equipment automatically clean the pipeline, the cleaning equipment is not required to be held by hands of a person, and the two hands are liberated.					
					

40.	Building drainage eaves pipeline coupling assembling for mouth convenient to installation	CN207880267	2018-09-18	QINGDAO XINHUAYOU CONSTRUCTION	96 %
The utility model relates to a drainage eaves mouth field, specifically be a building drainage eaves pipeline coupling assembling for mouth convenient to installation, this building drainage eaves pipeline coupling assembling for mouth convenient to installation, the through -hole is seted up in the guiding gutter bottom surface of drainage eaves mouth main part to the adoption, diversion pipeline's slidable mounting carries out, setting up clamping convex block and draw -in groove respectively in the bottom surface of guiding gutter, to carry out diversion pipeline's first joint fixed, and the screw is seted up to surface and the corresponding position of draw -in groove at clamping convex block, use the bolt to consolidate, through the inside at concrete wall pre -buried set up built -infitting and connecting screw rod go on with being connected of spacing snap ring, through the mode that sets up locating convex block and screw thread through -hole, fix with the connecting screw rodof built -in fitting, adopt the mode of thread tightening, make things convenient for people to install.					
41.	Modular insulating-building-block for construction and interior works, and its application.	EP0221831	1987-05-13	KOWALIK HERVE	96 %
The invention concerns a modular building block, in particular for load-bearing or non load-bearing walls, of individual houses, small or medium-size groups of dwellings or public buildings, comprising the assembly of a rigid load-bearing base and one or more external and/or internal cladding plates which engage with the rigid base. This modular block is characterized in that it comprises simultaneously a series of passage means for service ducting such as water conduits (27), electric cables or other, load-bearing ports (31), and various air flows for ventilation and for heating the walls. The invention also concerns structural building members.					
42.	Assembly-type retaining wall structure of an apartment area for easily stacking block bodies and smoothly draining the water through a drain unit	KR100583558	2006-05-19	DAJOO ARCHITECTS & ENGINEERS	96 %
PURPOSE: An assembly-type retaining wall structure of an apartment area is provided to facilitate construction works by stacking first and second block bodies across each other and to easily drain the water by installing an absorbing member through through-holes. CONSTITUTION: A first block body(2) is composed of an integral protruded part(22) formed on the rear surface where a front planting groove(21) is formed, and provided with saw-toothed projections on the upper and lower sides; a first through-hole vertically bored between the planting groove and the protruded part; and a drain hole(24) obliquely bored at the lower side of the protruded part to communicate with the first through-hole. A second block body(3) shorter than the first block body to be stacked between the first block bodies in turn comprises a second through-hole vertically bored on the part corresponding to the first through-hole and a discharge pipe(7) inserted between the first and second through-holes of the first and second block bodies, protruded downward through the planting groove of the first block body to discharge the rainwater used in the planting groove to the lower side, and positioned at the other first block body disposed at the lower side. The discharge pipe is installed at the first block body positioned at the lowest stage to discharge the rainwater to the outside. An absorbing member(4) is inserted into the first and second through-holes of the first and second block bodies and as high as or higher than each block body.					
© KIPO 2006					
43.	Pipe connecting box assemblies for air-conditioning, connecting method of air-conditioning refrigerant pipe and air-conditioning pipe connecting box	CN101033903	2007-09-12	SHIWON & C	96 %
The present invention relates to a pipe connecting box assembly for air conditioner, an air conditioner refrigerant discharge pipe connection method and an air conditioner discharge pipe connection box. The pipe connecting box assembly for air conditioner provided in the invention includes an outer frame, plural bending pipe components and a fixing device, wherein, the outer frame is disposed in a building wall and forms a space; the plural bending pipe components are fixed in the internal part of the outer frame; the fixing device has a pressing in ring and can be inserted into the discharge pipe on the side of outdoor machine or indoor machine, and can assemble the end parts of the bending components to the discharge pipe on the side of outdoor or indoor machine by screw; therefore, a refrigerant pipe disposed in the wall, the discharge pipes of the indoor and outdoor machines can be easily connected by a combine mode, the connection work can be easily finished without skilled welding technique labour, thereby the field operation time is greatly reduced and the work efficiency is greatly improved.					
44.	A buliding block	WO2018/047199	2018-03-15	SACHIN SHRIPAD GAJARE	96 %
The present invention provides a building block for constructing a passage in a building for passing water pipe line, electric cables, gas pipelines, internet cable, set top box cables, and the like. The building block is having at least one channel extending across a body of the building block. The building block further has a lid for closing and opening the channel. According to the present invention, a plurality of building blocks when arranged in predefined sequence in at least a wall, roof and flooring of the building, pathways, it creates the passage for circulating wiring or pipelines therethrough and the lid can be open for maintenance purpose thereby preventing structural damage to the building. The building block has an advantage of inbuilt channel with removable lid, which reduces the time in cutting and drilling in the wall.					
45.	Pipeline inside and outside wall rust cleaning device for building site	CN207239909	2018-04-17	HUBEI HENGCHENG CONSTRUCTION	95 %
The utility model discloses a pipeline inside and outside wall rust cleaning device for building site, lead to groove, mounting panel, third motor and second connecting rod including bottom plate, bracing piece, roof, left side board, right side board, clamping device, first motor, inner wall grinding device, outer wall grinding device, first montant, horizontal pole, second montant, slider, thirdmontant, waist shape, the utility model discloses be equipped with inner wall grinding device, inner wall grinding device includes the axis of rotation, the cavity sleeve, dead lever and first connecting rod, make the first steel wire of polishing hug closely pipe inner wall all the time through coordinating with the upper -part when going on polishing to pipe inner wall, the thoroughness that the assurance was polished and is derusted, be equipped with outer wall grinding device, the third motor, the third connecting rod, third montant and horizontal pole, through carrying out all -round polishing with the upper -part cooperation to whole pipeline outer wall, it is abundant to polish, good effects, high efficiency, the inside and outside wall is polished and is gone on simultaneously, anda work efficiency is increased, and the work intensity of workers is reduced.					

46.	Slab-like building element having protecting, aerating, thermal insulating and draining functions, and device for securing the same.	EP0552162	1993-07-28	SEIBER WERNER SIEBER WERNER	95 %	
47.	Shaping device of porous light ceramic surface wall body building block shaping machine	CN2796986	2006-07-19	ZHAO YE	95 %	
48.	Modular structure which is used to fit out an essentially-vertical wall of a building element and which is used to house ornamental plants	EP1679951	2006-07-19	GREENWALL	95 %	
49.	Method for constructing a building	EP1248890	2002-10-16	WROBLESKI SERGE	95 %	
50.	High-load bearing quick assembly-and-disassembly building blocks, preparation method thereof and construction method of building	CN103334535	2013-10-02	PRODIGY GREEN BUILDING R & D (CHONGQING) CO	95 %	
51.	Internal diameter measuring device for pccp pipes for building construction	CN107588706	2018-01-16	CHEN LEI	95 %	

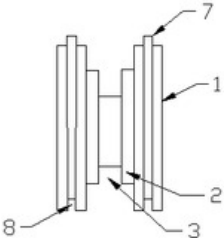
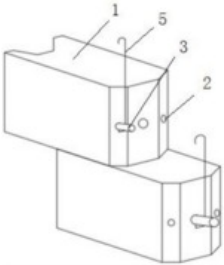
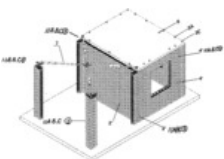
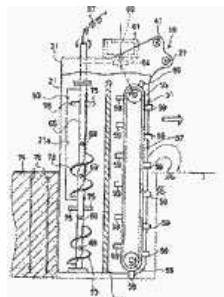
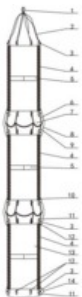
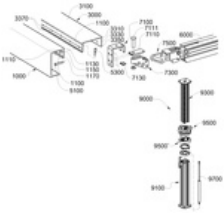
52.	Building block with openings at two ends	CN203821688	2014-09-10	ZHUZHOU BOERMAN TECHNOLOGY DEVELOPMENT	95 %
The utility model discloses a building block with openings at two ends and belongs to the field of building materials. The building block comprises a bearing part and a heat-insulation part. The building block is characterized in that the bearing part of the building block is composed of an outer wall, a middle wall and a connection rib so that a middle hole and two symmetric opening edge holes are formed; the connection rib is vertically provided with a trapezoid bulge and a U-shaped groove for clamping the building block up and down; the U-shaped groove is beneficial for pavement of steel bars and pipelines and transverse flowing of grout concrete; the heat-insulation part of the building block is composed of an outer wall, a middle wall and an edge rib so as to form a strip-shaped hole; the inner wall of the hole is provided with a small vertical rib for fixing a heat-insulation material in the hole; the edge rib is laterally provided with an arc-shaped bulge and an arc-shaped groove which are used for clamping the building block left and right; inclined edges for coating mortar are arranged at upper and lower, and left and right sides of the outer wall; the grout steel bar concrete and the clamping effect guarantee that a masonry structure has good integrity and waterproof and impermeable performances. 					
53.	Method for building deep foundation pit auxiliary supporting device capable of preventing pipeline network from deformation in urban environment	CN107119694	2017-09-01	DACHENG KECHUANG INFRASTRUCTURE	95 %
The invention discloses a method for building a deep foundation pit auxiliary supporting device capable of preventing a pipeline network from deformation in an urban environment. The method comprises the following steps: S1, digging a first groove for pouring a pressing plate, digging a plurality of second grooves for pouring vertical short piles, mounting reinforcement cages, fixedly connecting end parts of the reinforcement cages into a whole, and pouring concrete; S2, digging out the soil layer, at least 0.5 m or above away from the bottom ends of the vertical short piles, making support piles, connecting the support piles to form a support wall, and embedding precast reinforcement piles in the upper ends of the support piles; and S3, vertically arranging a slideway on each vertical short pile. Each support piece comprises an upper base, an upper hinge rod, an upper connecting rod, a lower connecting rod, a lower hinge rod and a lower base, a plurality of support pieces are arranged between the slideways and the top surfaces of the support piles, connecting pieces are lug caps, and the projections of the support pieces on the support piles in the vertical directions are perpendicular to the vertical short piles. Owing to arrangement of the support pieces, the peripheral pipeline network is effectively protected, and the beneficial effects that the construction and the assembly are quick, and detachment is allowed for repeated use are achieved. 					
54.	Building block for walls used to convey pipes	DE19508383	1996-09-19	BUDJIN HELMUT	95 %
The building block has interengaging toothed elements (4,5,7,8), on abutting and bearing faces, which prevent the blocks from displacement both parallel and at right angles to the wall. Vertical full-length channels (13) are provided at constant spacing from each adjoining toothed element. The toothed elements can be tongues and grooves. The tongues and grooves on the bearing faces (3,6) intersect and lie at right angles to each other. The toothed elements can be semi-spherical projections and corresponding indentations. 					
55.	Eps arc wall module for building	CN205917967	2017-02-01	LIAOCHENG JINGUO PACKAGING	95 %
The utility model relates to a EPS arc wall module for building, including interior wall body and outer wall body, the both ends of outer wall body are equipped with firm board respectively, interior wall body is made by the EPS material respectively with outer wall body, and outer wall body and interior wall body are curved wall body respectively, be equipped with many top tube body between interior wall body and the outer wall body, top tube body's below is equipped with down the body, down the one end setting of body is outside on the wall body, top tube body's both ends are equipped with respectively with the both ends of lower body can closed lid, be equipped with the storage tank on the lateral surface of lid, the surface of storage tank is equipped with the internal thread, EPS arc wall module for building still includes the locating piece, the one end of locating piece is equipped with the connecting block with storage tank looks adaptation, the lateral surface of connecting block is equipped with the external screw thread. The utility model discloses a high threading of just being convenient for of EPS arc wall module for building intensity. 					
56.	Wall structure of green building	CN209163126	2019-07-26	XIHUA UNIVERSITY	95 %
The utility model discloses a wall body structure of a green building, which comprises an outer side wall body and an inner side wall body, the inner side wall body is located on the side facing indoors; a hollow layer is arranged between the outer side wall body and the inner side wall body, mortar filling layers are arranged on the left side and the right side of the hollow layer, and the spacebetween the inner wall body and the outer wall body is filled with the mortar filling layers to block the left side and the right side of the hollow layer. The water spraying pipe is positioned above the hollow layer; one end of the water spraying pipe is connected with a water supply pipe for providing a water source; a plurality of water outlet holes are uniformly distributed below the water spraying pipe corresponding to the hollow layer; and a steel wire mesh plate for slowing down the descending speed of the water flow is also arranged in the hollow layer below the water outlet holes. In hot summer, water can be supplied to the water spraying pipe, the supplied water can drop from the water outlet holes and then drop downwards from the upper portion of the steel wire mesh plate, the steel wire mesh plate can block the dropping speed of water drops, heat of a wall body can be taken away in the dropping process of the water drops, and the situation that the wall body does not insulate heat but preserves heat in summer can be improved. 					
57.	Buried trench and a bottom construction method of an underground structure using the buried trench having the function of a waterproof projection for disposing of dew and infiltration on an underground external wall of a building and a tre...	KR20060064228	2006-06-13	BUIL KEONHWA	95 %
PURPOSE: A buried trench and a bottom construction method of an underground structure using a buried trench are provided to make construction easy and to cut down construction costs by burying a trench on the bottom of plain concrete and functioning as a trench and a waterproof projection. CONSTITUTION: A buried trench comprises an upper plate formed in a flat board to have the fixed length, left and right side plates extended downward from both sides of the upper plate, a wing part extended outward from the bottom of one of the left and right side plates and adhered closely to the bottom of an underground structure, and many ribs connecting the upper plate and the left, right side plates and supporting the upper plate. A bottom construction method of an underground structure using the buried trench comprises the steps of: removing impurities or projections from an external wall(50) and an inner space of an underground structure required for drainage treatment; arranging trenches(10,10') on the inner bottom(30) of the underground structure to make the trench unified with an extension adhere closely to the external wall; fixing the wings of the trenches to the bottom of the underground structure using nails; caulking a joint of the trenches to prevent water leakage and defects; inserting a drainpipe(20) to each inlet formed on the upper plates of the trenches; forming an inner wall(40) by piling up blocks or panels on the trenches located adjacently to the external wall; placing plain concrete(60) to make the trenches buried and installing a filter net(22) on the upper part of the drainpipe to prevent the drainpipe from getting clogged by impurities. (C) KIPO 2006 					
58.	Gypsum hollow block brick for 18cm-depth wall and its brick making machine	CN2752361	2006-01-18	ZHOU XIANYUE	94 %
The utility model relates to a gypsum hollow block brick for walls with the thickness of 10cm and a brick making machine thereof, which comprises a supporting frame, a vibrator, a motor, a worm shaft and a brick die body. The utility model is characterized in that a bottom plate of the supporting frame is provided with two guide rails supported by a spring and the vibrator; the brick die body is supported by pulley wheels on the guide rails; the supporting frame is provided with the worm shaft, both ends of the worm shafts are opposite threads, and the worm shaft penetrates through the brick die body and is engaged with worm wheels on two side plates of the brick die body; a bottom plate of the brick die body is provided with three partition plates; the two side plates are respectively provided with three through hole die lug bosses; one side plate is provided with a convex key, and the other side plate is provided with a groove; the convex key and the groove are also provided with line slot lug bosses which bring convenience to place power cords, communication lines, water pipes and gas pipes. The brick making machine can form two hollow gypsum block bricks of 50*18*24cm<3> once, mortises and tenons are used for connecting the bricks, the upper end surfaces and the lower end surfaces of the bricks are provided with line placing slots, and walls bricked by the bricks are smooth. The utility model can be directly brushed with 888 or 929 paint, and the cost of the walls is lower than traditional clay solid bricks. The utility model can be used for building a bearing wall for lower houses, a non-bearing wall for higher houses and a partition wall in rooms. 					

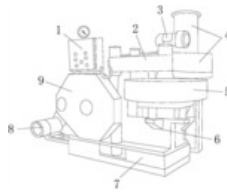
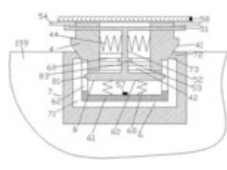
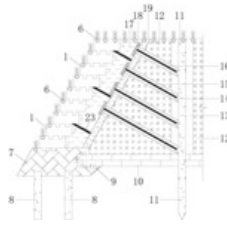
65.	Rail support beam low track and viaduct transition section structure for medium-low-speed magnetic suspension traffic project	WO2017/125028	2017-07-27	CN RAILWAY SIYUAN SURVEY & DESIGN CHINA RAILWAY SIYUAN SURVEY & DESIGN	94 %
A rail support beam low track and viaduct transition section structure for a medium-low-speed magnetic suspension traffic project. The structure comprises a roadbed, a bridge abutment (2), rail support beams (1), grouting pipes (5), and drainage ditches (7). The bridge abutment (2) comprises an abutment back body (2.1) and abutment cones (2.3). Each rail support beam (1) comprises a bottom slab (1.2) and an upper structure (1.1) disposed on the bottom slab (1.2), and the bottom slab is buried in the roadbed, and the bottom slab (1.2) extends downwards to form tenons (1.3) corresponding to tenon grooves (2.2). Each tenon (1.3) is placed in the corresponding tenon groove (2.2), and round corners are disposed on the tenons (1.3) and the tenon grooves (2.2), so that the tenons (1.3) can rotate in the tenon grooves (2.2). There are multiple grouting pipes (5), and the grouting pipes (5) are disposed in the roadbed. The rail support beams of a low track are in lap joint with the tenon grooves of a viaduct, so that settlement and slab staggering between the low track and the viaduct caused by different foundation treatment measures are avoided, the effect that settlement and slab staggering of a magnetic suspension F rail at the junction position of the low track and the abutment are avoided is ensured, and the requirements for smoothness of the F rail at the transition section between a viaduct structure and the low track of the magnetic suspension traffic project is effectively satisfied.					
66.	Reinforcement system for an outer wall capable of preventing the separation of an outer wall by absorbing the elasticity of an outer wall and keeping the state of an outer wall expanded and contracted	KR20060034153	2006-04-21	CHOE YEUN SOO DAEDO CERAMIC INDUSTRIAL	93 %
PURPOSE: A reinforcement system for an outer wall is provided to prevent the crack formation in an outer wall by absorbing the elastic force of an outer wall which expands and contracts by external temperature and keeping the expanding and contacting state of an outer wall, to prevent the destruction of an outer wall and the accidental fall of a lintel block by supporting a lintel block and an outer wall by a support member and a hanger and to couple a lintel block with a support member easily by hanging a hanger of an anchor on a support member. CONSTITUTION: A reinforcement system for an outer wall contains a crack preventive member for preventing the crack formation in an outer wall(4) according to expansion and contraction of an outer wall by external temperature, a supporter for supporting the outer wall and a lintel block(5), and an anchor(70) fixing an insulating member(2) and the outer wall to a bearing wall(1). The crack preventive member contains: an expansion joint inserted between masonry members(4a) of the outer wall and expanded/contracted together with the outer wall to absorb the elastic force of the outer wall; a sleeve placed on the masonry member of the expansion joint and fixed to one end of a fastener; a fastener placed on the masonry member located on both sides of the expansion joint through the expansion joint to slide in the sleeve when an outer wall expands and contacts by external temperature and composed of a deformed bar having plural contact projections and a strap type helical bar twisted spirally. The supporter contains: a support member(50) inserted in a joint between the masonry member and the lintel block of the outer wall to support the masonry member and fixed by adhesives which couple the masonry member and the lintel block; and a hanger(60) hanging the lintel block on the support member. The anchor contains: a fixing bar whose one end is coupled to the outer wall and other end is stuck to the bearing wall through the insulating member; and a binding member composed of a cylindrical connector fixed to a joint between the masonry members of the outer wall and housing one end of the fixing bar partially and a cross bar penetrating one end of the fixing bar partially and fixed to a joint between the masonry members of the outer wall. (C) KIPO 2006					
67.	Prefabricated building components and assembly equipments	EP2240652	2010-10-20	LEO ANO ANO LEO	93 %
A building process that offers better qualities in terms of value, structural integrity, and comfort and energy conservation for industrial, commercial and residential building industries. The present invention starts with a single component which is the vertical composite insulated supporting steel members, then the plates, the beams, the composite insulated wall system, the floor joist system, the temperature regulated roof system and the multiple insulation patterns to create the active thermal force air cavities and inactive cavities. The entire concept of utilizing the invention is that the design of all of the components and parts, the objectives are focused on to facilitate the prefabrication process and conserve energy.					
68.	A device for light insulation wall body building connecting column body	CN206408791	2017-08-15	YANG JINGBIN	93 %
The utility model discloses a device for light insulation wall body building connecting column body, including first stand (1), second stand (2), first clamp (3), second clamp (4), steel wire (7) and fixing base (12), its characterized in that: first stand (1) upper portion cover has first clamp (3), and first stand (1) middle part has second clamp (4) with the lower part cover, is equipped with the inner thread opening joint (15) of two symmetries and interior pore ring (6) of two symmetries on first clamp (3) and second clamp (4) respectively, is connected through steel wire (7) between first stand (1) and the first stand (1), is connected through first clamp (3) between first stand (1) and the second stand (2). The utility model discloses the advantage has: the input cost is low, exempts from the welding, and the non -corrosibility can be good, and fixed atress reinforcing bar that can be orderly makes the light insulation wall body form a whole, the convenient removal and the reutilization simultaneously.					
69.	Multi-use architecture building block	CN204531144	2015-08-05	SHANDONG PROVINCE CONSTRUCTION & CONSTRUCTION SECOND	93 %
The utility model discloses building material technical field, in particular to multi-use architecture building block. This multi-use architecture building block, including the building block body, characterized by: said building block body left side is equipped with the dovetail, and a building block body right side body coupling is equipped with the forked tail lug with dovetail looks adaptation, and building block body upper portion both ends center is equipped with the slot respectively, and a building block body bottom body coupling is equipped with the inserted block with slot looks adaptation, and the inside outside of building block body is equipped with fire-retardant layer, and the inside inboard of building block body is equipped with the heat preservation, and building block body front side and rear side are equipped with a plurality of horizontal recesses respectively and indulge the recess. The beneficial effects of the utility model are that: the building by laying bricks or stones between every layer the building block and between the adjacent two-layer building block of being convenient for, builds that convenience, insulation fire performance are good, the wall adheres to the reinforce by laying bricks or stones at simple structure, and labour saving and time saving has avoided hollowing, fracture and the obscession on bed of mortar and ceramic tile layer effectively.					
70.	Method for constructing underground continuous wall having varied section	KR19990085502	1999-12-06	NSTD	93 %
PURPOSE: A method for constructing an underground continuous wall is provided to construct the underground continuous wall by changing thickness thereof for maximizing efficiency of a space. CONSTITUTION: An iron net(10) is inserted on a slurry wall to mount a form. The form of a square shape in opened on upper and lower portions, and a metal lath is installed on the lower portion of the form passing stable fluid not a concrete. A circular spiral duct steel pipe(13) in established in the iron net to insert an H-pile after penetrating lower end portion ground of the slurry wall through the spiral duct steel pipe. A concrete bulb is formed on the lower portion of a penetrated hole by injecting cement milk via compression air injecting pipe. Thickness of the underground slurry wall is controlled according to stress applied to the underground slurry wall to expand underground space. COPYRIGHT 2001 KIPO					

71.	Pneumatic curtain wall assembly, pull rope type pneumatic curtain wall comprising pneumatic curtain wall assembly and building	CN209145102	2019-07-23	JIMU BUILDING TECHNOLOGY SHANGHAI	93 %
The utility model discloses a pneumatic curtain wall assembly, an inhaul cable type pneumatic curtain wall comprising the pneumatic curtain wall assembly and a building. Belonging to the field of buildings, pneumatic sheet, the pneumatic piece comprises a panel and a rotating shaft connected with one side of the panel and used for enabling the panel to swing. Wherein two ends of the rotating shaft are respectively and fixedly connected with a locking structure used for fixing the inhaul cable, each locking structure comprises a front pressing block, a rear pressing block and a locking nail used for connecting the front pressing block and the rear pressing block, the front pressing block and the rear pressing block are respectively provided with a semi-circular hole to form a circular hole used for locking the inhaul cable, and the rear pressing block is connected with the rotating shaft. The inhaul cable type pneumatic curtain wall assembly is simple in structure and convenient to install, the inhaul cable is locked conveniently and rapidly through cooperation of the front pressing block and the rear pressing block and the locking nails, and a sheet-shaped pneumatic curtain wall set can be rapidly installed.					
72.	Prefabricated building unit adapted to form the partition wall between a kitchen and a bathroom	GB626216	1949-07-12	FRANCISCO GOLDBERGER KONSTANT	93 %
626,216. Plumbing units for buildings. KONSTANT, F. GOLDBERGER-. Aug. 20, 1946, No. 24853. Convention date, Aug. 20, 1945. [Class 20(i)] A partition between a kitchen and bathroom comprises a prefabricated body 1 carrying the water supply and waste piping and a block 14 with pillars 15, on which the body 1 rests, and projections 21 between which is inserted the part 22 of a block 16 adapted at 17 and 18 to receive the waste waters, 17 and 18 being connected to the main drain pipe 19. The block 16 is reversible so as to extend on either side of the wall, the connection 18 remaining in the middle so that the waste pipes from either side can be of the same shape. The supply pipes all branch from the middle, and may be directed to either side by swinging them about the unions, 5, 6. A similar reversible arrangement applies to the other fittings, e.g. the front wall of a flushing cistern 9 is exchangeable with its rear wall and its outflow pipe can be swung to either side.					
73.	Construction block for e.g. wall , has vertical cavities and horizontal cavities permitting binder material to cross and to connect block , where block is fabricated with natural or synthetic rubber	FR2912163	2008-08-08	VELARDO LAURENT ANTOINE	93 %
The block has three vertical cavities (1) and a horizontal cavity (2-4) permitting a binder material to cross and to connect following block in upstream and downstream of the block, and steel wire. A stud (5) is fitted in a groove (6) of the block to permit perfect alignment of cavities and gallery (7) to facilitate a passage of sheath, cable or pipe, where the block is fabricated with natural or synthetic rubber of recyclable material. An independent claim is also included for a method for assembling construction block. (From FR2912163 A1)					
74.	Prefabricated shear wall unit, socket and spigot joint type shear wall and building	CN109680832	2019-04-26	HALUMM CONSTRUCTION TECHNOLOGY	93 %
The invention discloses a prefabricated shear wall unit, a socket and spigot joint type shear wall and a building. The prefabricated shear wall unit comprises a wall body and an inserting-connection protrusion, wherein the inserting-connection protrusion is arranged at one end of the wall body, an inserting-connection groove matched with the inserting-connection protrusion is formed at the other end of the wall body, the length of the inserting-connection protrusion is smaller than that of the inserting-connection groove, and/or the thickness of the inserting-connection protrusion is smaller than that of the inserting-connection groove, and/or the height of the inserting-connection protrusion is smaller than the depth of the inserting-connection groove. The prefabricated shear wall unit can be manufactured on a processing site, and the specifications can be set according to need; the production efficiency is high, components can be industrially produced as the components are shaped and standardized, the labor efficiency is improved, and convenience is brought to transportation; furthermore, when a plurality of pieces of prefabricated shear wall units are connected to form the socket and spigot joint type shear wall, only the inserting-connection protrusion of one prefabricated shear wall unit in two adjacent prefabricated shear wall units is inserted into the inserting-connection groove of the other prefabricated shear wall unit.					
75.	Deformable building block box	CN109850396	2019-06-07	SHANGHAI PUTAO TECHNOLOGY	92 %
The invention provides a deformable building block box. The deformable building block box comprises box board structures, wherein a plurality of box board structures comprise a first box board and a second box board which are rotatably connected; the first box board and the second box board can be oppositely rotated to switch the deformable building block box between a storing state and an expanding state; when the deformable building block box is in the storing state, the opposite inner sides of the first box board and the second box board encircle a storing space; when the deformable building block box is in the expanding state, the first box board and the second box board are parallel to each other or are arranged by an obtuse angle; the box board structures are provided with functional surfaces; and the inner wall surface of one or the plurality of box board structures corresponds to the corresponding functional surface when the deformable building block box is in the storing state. The deformable building block box can be a component of a building block set after being expanded, so that the application is enriched on the basis of original pure storing functions, and the interestingness is increased.					
76.	Building brick and wall built therewith	WO2016/045344	2016-03-31	HUANG LIEYUAN	92 %
A building brick and a wall built therewith, the building brick comprising a rectangular-shaped brick comprising a protrusion (1) and a recess (2) respectively provided on two opposite sides. Several through-holes (3) pass through the two opposite sides of the brick and/or several open slots (4) are provided on the brick. The open slots (4) comprise a first open slot (41) and a second open slot (42). The wall comprises several layers. An offset between bricks in adjacent layers causes the first open slots (41) in the same layer to cooperate and enclose a first open-slot accommodating chamber (7) consistent with the shape of the through-hole (3); the second open slots (42) of the brick in the same layer are superimposed to form a communicating horizontal accommodating chamber, and a center line of the through-hole (3) in adjacent layers of the bricks is superimposed with a center line of the first open slot accommodating chamber (7) to form a communicating vertical accommodating chamber. The building brick improves construction efficiency and reduces labor cost. The wall built with the bricks has a solid and firm structure, thus facilitating subsequent pipeline installation and maintenance.					

77.	Special concrete pipe pile of building engineering	CN208763001	2019-04-19	TAIZHOU HENGRI PILE TUBE	92 %
The utility model provides a special concrete pipe pile of building engineering, the both sides wall in cylinder stake in -core chamber on be equipped with a plurality of protruding reinforcing bar pieces, the both ends in cylinder stake in -core chamber between be equipped with a plurality of longitudinal reinforcements, the both sides wall in cylinder stake in -core chamber between be equipped with a plurality of transverse reinforcement, concrete placement in the inside of cylinder stake core, the outer wall of cylinder stake core on be equipped with a plurality of annular bulge reinforcingbars, the top of cylinder stake core be equipped with the round platform end plate, its bottom is equipped with the stake point, the bearing capacity that longitudinal reinforcement and transverse reinforcement through cylinder stake in -core can improve concrete pipe pile greatly, stability is high, can strengthen buffering effect through the protruding reinforcing bar piece on the both sides wall in cylinder stake in -core chamber and the annular bulge reinforcing bar on the outer wall, improves the compressive resistance, and the designability is strong, the construction use of being convenient for.					
78.	Assembled building wall panel	CN201411819	2010-02-24	WU GUOFU	92 %
The utility model provides an assembled building wall panel, which belongs to the field of building components, and structurally comprises positioning groove baffles and partition walls, wherein the three side surfaces of each partition wall are provided with raised positioning blocks, and one side surface is provided with a positioning groove; the partition walls are plugged, matched and fixed together through the raised positioning blocks and the positioning grooves on the side surfaces; and the raised positioning blocks on the upper and the lower side surfaces of the partition walls are plugged, matched and fixed together with the upper and the lower positioning groove baffles. Compared with the prior art, the assembled building wall panel is simple and convenient; the partition walls are matched, plugged, connected and combined with the positioning blocks through the grooves; pre-reserved holes can conveniently go through pipelines without damaging the overall structure of the partition walls, thereby not only saving labor, but also facilitating the free detachment of the partition walls, and even facilitating the layout of a room.					
79.	Drainage pipeline for building	CN209188254	2019-08-02	XUANZHONG BUILDING ENERGY SAVING TECHNOLOGY	92 %
The utility model discloses a drainage pipeline for a building. The filter comprises a filter box with an opening at the upper end, the opening of the filter box is connected with a box cover through a connecting mechanism; the box cover is fixedly communicated with a water inlet pipe; a water outlet pipe is fixedly communicated with the center of the outer box bottom of the filter box; partition plates are symmetrically and fixedly connected to the inner box bottom of the filter box. Communicating holes are formed in the side walls, close to the bottom, of the partition plates, the two partition plates and the filter box jointly form two standby pipe grooves and a main pipe groove, the two standby pipe grooves are located in the two sides of the main pipe groove, first sliding grooves are asymmetrically formed in the vertical side walls, opposite to each other and close to the top, of the two partition plates, and first sliding blocks are slidably connected into the first sliding grooves. Sewage discharged into the water inlet and outlet pipe is filtered, the possibility that the water outlet pipe is blocked is reduced, and even if the filter screen barrel cannot be cleaned in time, the device cannot be affected to filter the sewage discharged into the water outlet pipe.					
80.	Earthquake, wind resistant and fire resistant pre-fabricated building panels and structures formed therefrom	EP0736124	1996-10-09	R A R CONSULTANTS CANADA S BRITISH TSUSHI COLUMBIA BUI 6 H H 1 H 8 VANCOUVER WEST TENSE AVENI & 1 0 9 6 R A R CONSLTANTS R A R CONSULTANS RAR 1 more...	92 %
An earthquake, fire and wind resistant pre-fabricated building panel comprises a plurality of frame members (150, 152-155). The frame members are connected together to form a frame lying in a frame plane, the frame defining a perimeter of the panel, the perimeter bounding an interior portion of the panel. At least some of the frame members are biased inwardly, generally in the frame panel, towards the interior portion of the panel. A first solidified castable substance (270) is cast in the interior portion of the frame, between the frame members. A three-dimensional structure such as a house is formed by connecting the panels together. The connections absorb and distribute seismic forces to the entire three-dimensional structure and the biased frame members act to absorb residual seismic forces reaching the individual panels. The castable substance and biased frame members permit the panel to withstand both positive and negative loading and render the panel fire resistant.					
81.	Drain pipe for building	CN206988604	2018-02-09	WENZHOU BOFU MUNICIPAL BUILDING ENGINEERING	92 %
The utility model belongs to the technical field of the room technique of building and specifically relates to a drain pipe for building, including the water pipe, the surface of water pipe is equipped with a plurality of annular first baffles, adjacent two all be equipped with first baffle between the first baffle, one side that first baffle is close to the water pipe is equipped with the recess, be equipped with the cystosepiment in the recess, one side that the water pipe was kept away from to first baffle is equipped with first cavity, the upper and lower both sides of second baffle all are equipped with the second baffle, one side that the water pipe was kept away from to the second baffle is equipped with the second cavity, be equipped with the porous rubber piece in the second cavity, one side that the second baffle was kept away from to the second cavity is equipped with the outer tube. The utility model discloses the second cavity and the cystosepiment structure that set up, but the noise that sends during the active absorption drainage weaken the intensity of noise, the second baffle and the outer tubular construction that set up can effectively stop the transmission of noise, weaken the noise of surrounding environment, improve people's quality of life.					
82.	Building block with insulating core	US20140150361	2014-06-05	8168202 CANADA	92 %
An insulated core for a building block for a building wall, the block has spaced apart parallel face shells with the insulating core filling the space between the parallel face shells. The insulating core defines spaced apart parallel surfaces for engaging the respective face shells. The insulating core is provided with channels such that when the block forms part of a wall with other blocks, the channels form intersecting uninterrupted passageways for receiving elongated reinforcing members and grout to provide a reinforcing structure to the wall. A method of preparing a structural insulating wall for buildings and an insulating core including a metal connecting bar with lateral wings provided within at least one male interlocking member to provide a thermal break are also disclosed.					

[illegible]

89.	Energy-saving building integrated large straight wall module	CN204298999	2015-04-29	LI CHENGBIN	91 %
The utility model discloses an energy-saving building integrated large straight wall module which comprises an integrated module body made of EPS (expandable polystyrene) materials by a mould. The module body includes an inner side wall and an outer side wall which are connected through a connecting beam, a groove for placing a square steel pipe is formed in the connecting beam, the outer sides of the inner side wall and the outer side wall are provided with rectangular projections and rectangular grooves, wedge grooves are formed in the middles of the rectangular projections, rectangular clamping strips are arranged on the upper side and one side wall of the module body, rectangular grooves matched with the rectangular clamping strips are formed in the lower side and the other side wall of the module body, the maximum length of the outer side wall is 100-120cm, the maximum width of the module body is 17cm, the thickness of each of the inner wall and the outer wall is 4.5cm, and the height of the module body is 30cm. The energy-saving building integrated large straight wall module is convenient to mount and can directly serve as a heat insulation wall, building cost is greatly reduced, construction period is shortened, and heat insulation and sound insulation functions are added.					
					
90.	Biological ash concrete block composite soil body wall	CN209211696	2019-08-06	XIJING UNIVERSITY	91 %
The utility model discloses a biological ash concrete block composite soil body wall. The building block comprises a plurality of building block bodies, each building block body is of a rectangular structure, a hole is formed in each building block body, a connecting pipe fitting is inserted into each hole, steel wire holes are formed in the two ends of each connecting pipe fitting, steel wire clamps penetrate through the steel wire holes, a bolt head hole is formed in the middle of each connecting pipe fitting, and a fixing bolt head is inserted into each bolt head hole. The building block bodies are connected through the connecting pipe fittings, and traditional mortar masonry is replaced. The building block has the advantages that firstly, construction mortar leakage is prevented, and the problems that the heat insulation performance of the building block becomes poor, the dead weight is increased and resources are wasted due to excessive falling mortar are avoided.					
					
91.	Method for fabricating house through members assembled by interlocking combined building blocks	CN107060071	2017-08-18	DUAN ZHIXIANG	91 %
The invention relates to a method for fabricating a house through members assembled by interlocking combined building blocks. The combined building blocks with different thicknesses, different interlocking types and functional block shapes are assembled to be the independent members such as inner-outer-wall equal thickness and unequal thickness hollow or solid square, L-shaped, T-shaped and cross structural column window beams, door beams, cantilevering beams, ring beams, wallboards and floors, and the independent members are fabricated to be the house meeting the current standard quality requirements. The products are not only suitable for small scattered living house man-made buildings, but also suitable for whole mechanical low-rise, multi-rise and high-rise full-fabricated buildings, the effect of improving seismic performance of the house is achieved, the aerial working safety risk under layer-by-layer erecting is avoided, lots of formworks are saved, the building construction speed is increased, and compared with all other domestic and oversea current building structure systems, the products have the more significant cost performance advantage.					
					
92.	Method, unit and device for excavating and building retaining wall	JP08296223	1996-11-12	SURUGA KENKI	91 %
PURPOSE: To eliminate a form so as to improve the working efficiency by fitting an excavating unit, which is provided with an agitating vane and a cement milk supplying pipe or the like, to a working machinery such as a power shovel, and building an underground retaining wall of the excavated sediment. CONSTITUTION: A unit 19, which is provided with a trench excavating device 51 and a retaining wall building device 53, is fitted to an arm of a working machine freely to be disconnected, and the working machine is moved back in the arrow direction, and a trench for retaining wall at the predetermined width and the predetermined depth is excavated. A part of the excavated sediment is mixed with the cement milk, which is supplied from a milk supplying pipe 65, by an agitating vane 73 and projections 75, and filled inside of the excavated trench, and solidified so as to form a retaining wall. In this case, a core material 76 made of reinforcement and wire net is arranged at need. The retaining wall is built at the same time with the excavation of the trench without providing a form. The work can be thereby simplified, and the construction period can be shortened. COPYRIGHT: (C)1996,JPO					
					
93.	Building hole pile reinforced concrete column corrosion-resistant protection structure	CN108411899	2018-08-17	GUANGDONG HUA XING CONSTRUCTION	91 %
The invention relates to an underground reinforced concrete column protection structure, in particular to a building hole pile reinforced concrete column corrosion-resistant protection structure. Outer sway rods (11) are arranged at the outer ends of the two end faces (12) of each cement pipe (4), a ring (3) is arranged on the outer side of each vertical rod, the two ends of multiple expanding rods arranged between every two of the multiple cement pipes are hinged to the rings of the two cement pipes through shafts, the middle portions of the multiple expanding rods are in hinged connection, the outer edges of every two cement pipes are wrapped with rubber barrels (8), the lower of the cement pipe at the lowest portion is wrapped with a rubber sheet (14), and the middle portion and the lower portion of a reinforcement cage penetrate the multiple cement pipes to obtain reinforcement cage corrosion-resistant protection. The multiple cement pipes are arranged outside the reinforcement cage, the reinforcement cage is effectively prevented from being corroded by contact with soil, and the stability of a column body is greatly strengthened through V-shaped concrete protrusion rings punctured into a pile hole wall.					
					
94.	Method for constructing roof of building , and construction material used for same	WO2017/003003	2017-01-05	NEXPLUS GRAPE KING BIO GRAPE KING TECHNIQUE CROTCH MIN	91 %
The present invention relates to a method for constructing a roof of a building, and a construction material used for the same, which facilitate the installation and the dismantlement of a roof slab mold when a building is constructed, can ensure a maximum work space, and can obtain more improved work safety, the construction material comprising: a slab (1000) fastened to a wall surface; a deck (3000) coupled to a panel; a fixing member (5000) for coupling the panel and the roof slab mold; a rotary bracket (7000) coupled to the panel and fixing a cross beam; and a supporter (9000) supporting the roof slab mold and the cross beam, and moving downward by the load of the roof slab mold and the cross beam during dismantlement.					
					

95.	Planting exterior structure of structure and method thereof	KR20140039918	2014-04-02	BHS	91 %
The present invention relates to an exterior planting structure for greening by setting out plants on an inclined plane including an outer wall or a roof, soundproof walls, a concrete retaining wall, and a wall or on the vertical wall surface and facilitating growth of the plants by connecting a waterway between planting sites; and a method for constructing the exterior planting structure. According to the present invention, several planting spaces are formed on the inclined plane or the vertical wall surface of a building in a concave shape, and several passages having at least two sites opened outwards are formed in a diagonal direction between one planting space and a neighboring planting place. COPYRIGHT KIPO 2014 [Reference numerals] (AA) 10 or 20					
					
96.	Improvements in building construction	GB621027	1949-04-04	PIERRE JEAN ROUZAUD	91 %
621,027. Building blocks; walls. ROUZAUD, P. J. June 15, 1945, Nos. 15232 and 15233. Convention dates, Dec. 8, 1943, and April 5, 1944. [Classes 20(iv) and 87(i)] Buildings are constructed from a series of standard and special blocks which are moulded to precise dimensions in multiples of a minimum. All the blocks have keying recesses and/or projections for interlocking adjacent blocks, and special blocks are inserted at particular points in walls or partitions, e.g. at each storey level, and have means for securing horizontal and vertical ties which extend across a number of blocks within cavities therein to take horizontal and vertical stresses. The ties may be metal girders. The blocks are of generally rectangular form, hollow, and with a central partition. As shown in Fig. 1, the top of the end walls 2 and the bottom of the partition 3 of a standard block have notches 4. The blocks are laid "dry" in half bond and are interlocked by a flat key 66, Fig. 3, engaged in the registering notches; or a key of the form shown at 80, Fig. 27, may be used. In modifications, Figs. 4 and 5, not shown, the transverse walls are provided on their faces with vertical ribs and grooves or on their top and bottom with interlocking projections and notches. In another modification, Fig. 25, the partitions 3 have elongated grooves 67 and the end walls have corresponding grooves 69, 69<SP>1</SP> and vertical grooves 68, 68<SP>1</SP>. After these blocks have been laid, cement is poured down the vertical grooves to form a key in the grooves 67, 69, 69<SP>1</SP>. Special blocks, Fig. 12, have embedded metal reinforcements 11 with bosses 12 having screw-threaded holes 13. These blocks may be inter-connected by metal tie members inserted into apertures 22 in the end walls and secured to the bosses by screws. The reinforcement may be arranged near the upper or the lower end of the block and may extend through all the longitudinal and transverse walls of the block. The block shown in Fig. 12 is designed to support a floor beam, for which purpose it has a deep recess 21 in one side wall, and a closed base. Special blocks to be tied together vertically by ties in the form of a chain are reinforced and have bosses opening to one or more of the voids within the block. Metal bars 29 are secured to each other and to the blocks by bolts 28 engaging the bosses, Fig. 15. Two series of the bars may be secured to blocks forming corners of a structure. Both horizontal and vertical tying are obtained by providing the reinforcement, Fig. 17, with internal bosses 38 for the vertical tie bars and externally-accessible bosses 37 for short horizontal ties between the blocks. A continuous horizontal tie is obtained by means of a U-shaped bar inserted in the aligned notches 4 of a course of blocks. Continuous vertical ties are formed within the voids of the blocks by U-shaped bars 81, 81<SP>1</SP> bolted together by bolts 82 passed through notches 4, Fig. 27, and horizontal and vertical bars may be connected together at corners by angle plates. The outer faces of the blocks may be provided with edge grooves to receive a water proofing fillet of mortar. Blocks for partitions are made narrow and interconnected by metal bars arranged within the voids. A block for the meeting points of walls and partitions is made T-shaped. Woodwork, e.g. door frames, is secured by bolts to reinforcement bosses suitably arranged in the blocks. Blocks may be faced or covered with parquet, tiling &c. for flooring and other purposes and may be apertured for the passage of piping &c. Each block may have such apertures of various sizes and adapted, by plugs or sleeves, for piping of standard size.					
97.	Aerated concrete presses from both sides core spf building block self preservation temperature wall body apparatus for producing that hard bubbles	CN206937590	2018-01-30	JIANGSU JIUJIU WATERPROOF THERMAL INSULATION ENGINEERING	91 %
The utility model discloses an aerated concrete presses from both sides core SPF building block self preservation temperature wall body apparatus for producing that hard bubbles, its structure includes numerical control box, agitator, reduction gear, feed inlet, screening washer, production ware main part, bottom plate, motor, actuator, the cuboid structure that the bottom plate equals and is parallel to each other for both sides surfaces, top surface establishes and puts ware main part bottom surface and mutually perpendicular into production, and floor width is 60cm, actuator strong hexagon inside and outside being, fits swing joint is welded with the side side surface adoption of production ware main part in the side surface, be it 6cm to state the actuator width 10cm. The beneficial effects of the utility model are that be equipped with the screening washer, screening washer main part switch -on electric energy, material filter through the filter screen from the feed inlet, enter into sieve screen on, make the raw materials impurity screening of screening washer main part on to sieve screen, avoid the closely knit degree of building block wall body poor, effectively improve production quality.					
					
98.	Building drainage pipe fixing device convenient to dismount and mount	CN105909869	2016-08-31	ZHANG WEIPING	91 %
The invention discloses a building drainage pipe fixing device convenient to dismount and mount. The building drainage pipe fixing device is used for fixedly installing a drainage pipe (5) on a building (155) and comprises an interior lining panel (7) embedded in the building (155), and an elastic locking component in sliding fit with a lower side fixedly-connected guide rod (51) of the drainage pipe (5). The two ends of the lower side fixedly-connected guide rod (51) are fixed to the drainage pipe (5) through connecting arms. The elastic locking component comprises two wedge-shaped lock blocks (4) symmetrically arranged, and an ejecting-open spring (44) is arranged between the two wedge-shaped lock blocks (4) so as to elastically expand the two wedge-shaped lock blocks (4).					
					
99.	Ecological retaining wall structure	CN204690676	2015-10-07	NANJING MINGHUI CONSTRUCTION	91 %
The utility model provides a that ecological retaining wall structure, it comprises unsmooth building block, pile formula basis, ecological concrete, high highly permeable concrete, anchor rope, hard and soft composite pile, bank dyke and vegetation unsmooth building block in set up the recess, the plush copper, tenon and planting hole, the connection each other is inlaid with adjacent unsmooth building block to recess and plush copper, the tenon builds in the integration together with building block barricade and ecological concrete, it is used for vegetation growing to plant the hole, the anchor rope tail end sets up the latch closure, establish drilling through beating in the bank dyke, utilize the sleeve pipe roof pressure to go into the latch closure card of anchor rope tail end in the fixed loop that connects to rigidity stake, the realization anchor rope is connected with the rigidity stake, the anchor rope head end sets up the anchor head and fixes on high highly permeable concrete.					
					
100.	Building exterior material fixing unit having anchor comprising heat insulating portion	KR10-2019-0067390	2019-06-17	SHIN, DONG-WON	90 %
The present invention relates to a fixing unit for building exterior materials having an anchor comprising an insulation unit, which is able to improve an insulation performance of the fixing unit including the anchor which fixates exterior materials such as stones on a building along with an insulation member. The present invention is able to form the insulation unit inside a main frame unit of the anchor forming the fixing unit for the building exterior materials, prevent a circular rod of the anchor from directly coming in contact with an exterior material support unit, block heat and cold air from outside from the insulation unit, control an angle at which the main frame unit comes in contact with the support unit even when the fixing unit of the anchor is not fixated at a pre-determined angle to an external wall of the building, and allow the exterior materials to be fixated at a desired angle in a stable manner. In addition, the present invention is able to protect an outer cover of the main frame unit with the insulation material and metallic incombustible materials, and prevent flames from spreading even when a fire occurs.					
