

Engineering patents

براءات الاختراع (الهندسية)

S.N.	Inventors Name	Patent No.	Issue Date	Title	Abstract	Patent Office	Patent Document
1.	HESSAH ABDULLAH M. ALHUWAISH ABDULLAH MOHAMMAD ALDREES	11813133	14/11/2023	Tool for measuring inclination of maxillary incisors	A tool for measuring the inclination of maxillary incisors can accurately quantify the clinical inclination of the maxillary incisors relative to a true horizontal reference plane before and during dental treatment. The tool includes a stationary base and a measuring arm pivotably connected to the base. The base includes a main window defined therethrough and a spirit level. The movable arm includes a protractor, a sleeve connected to the protractor, and a sliding sheet slidably received within the sleeve. An adjustable incisor guide at a measuring end of the sliding sheet includes an incisor ledge for receiving an incisor edge during measurement. The spirit level can be used to align the base with the true horizontal plane and the movable arm can be raised until the incisor ledge contacts the incisor edge and the sliding sheet contacts the facial surface of the maxillary incisor.	USPTO	US 11813133
1.	HUSAIN ABBAS MOHAMMAD ALRUBAIDI YOUSEF A. AL-SALLOUM	11773593	3/10/2023	Shear beam-column connection	A shear beam-column connection includes a first beam, a first tapered bolt having a non-threaded portion and a threaded end portion, and a column including a first wedge slot block. The non-threaded portion of the first tapered bolt is fixedly secured, e.g., by welding, to the first beam. The wedge slot block includes a cavity for removably receiving the non-threaded portion of the first tapered bolt. The first wedge slot block is fixedly secured to the column, e.g., by welding. The first beam can be secured to the column by positioning the first beam adjacent the column such that the non-threaded portion of the bolt is inserted into the cavity. A nut can be threaded to the free end of the bolt to further secure the beam to the column.	USPTO	US 11773593
1.	MAHA FAHAD ALGABBANI ASMA SAAD ALRUSHUD RAWAN FAISAL ALGHAMDI RAHAF HAMAD ALRAJHI AYSHAH ABDULLAH ALDOSARI EBTESAM NASSER ALQHTANEY RANYM IBRAHIM ALAWAJI HALA RASHED ALRASHED	11730247	22/8/2023	Combination hair band and comb	The combination hair band and comb assists people with activities of daily living (ADLs). The combination hair band and comb includes an elongate fabric hair band having a series of small internal combs that assist the user in combing/brushing their hair. A first end of the band is attached to one end of a spring clip, and the opposite second end of the band passes through a hole at the other end of the spring clip. In use, the hair band is tightened by pulling the distal end of the band through the hole in the spring clip. The spring clip is then fastened to maintain the band in the desired position. The internal plastic combs extend through an internal slit in the band and comb the hair as the band is pulled rearward through the user's hair, by the user grasping and pulling the distal end of the band.	USPTO	US 11730247
1.	Manal Ahmed Gasmelseed Awad Awatif Ahmed HENDI Khalid Mustafa Osman Ortashi	11694853	4/7/2023	Flexible solar panel	The flexible dye-sensitized solar panel with an organic chromophore is formed from an organic chromophore dye in a polymer matrix. The organic chromophore dye is extracted from chard (B. vulgaris subsp. cicla). The polymer matrix may be formed from either poly(vinyl alcohol) or polystyrene. The flexible dye-sensitized solar panel with an organic chromophore is made by preparing a solution of the selected polymer in the dye extracted from the B. vulgaris subsp. cicla. The solution is coated on a glass plate and dried to form a thin film. The thin flexible film is removed from the plate, forming the flexible dye-sensitized solar panel with an organic chromophore.	USPTO	US 11694853

1.	Mohammed Abdulaziz Al-Khamis	RE49532	16/5/2023	Method and apparatus for storing energy	An energy storing system, which includes a plurality of weights; a first storing unit and a second storing unit, wherein the first storing unit is arranged below the second storing unit and each of the storing units includes a guiding track on which weights can be placed and along which weights can be moved, wherein each of these guiding tracks includes a first portion and a second portion, wherein the second portion is arranged below the first portion; and a loading unit configured to lift at least one weight from the first storing unit to the second storing unit during a first period thereby converting electrical energy to potential energy.	USPTO	US RE49532
1.	Husain Abbas Nadeem A. Siddiqui Baha M. A. Khateeb Tarek H. Almusallam Yousef A. Al-Salloum	11639601	2/5/2023	System and method for connecting a square concrete-filled steel tubular column to a reinforced concrete footing	The system and method for connecting a square concrete-filled steel tubular column to a reinforced concrete footing includes a short steel pipe partially embedded in the footing, the pipe having a top end having flanges extending radially therefrom, the top end extending into a cavity in the footing having an elliptical top opening and circular base, the flanges extending above the base. An elliptical base plate is welded to the bottom of the tubular steel column, the base plate having a circular opening defined therein and a plurality of spaced flange slots depending therefrom. The bottom end of the column is lowered into the cavity, the elliptical base plate passing through the elliptical opening in the cavity, and the column is rotated 90° to interlock the flanges with the flange slots. The cavity is filled with concrete arout, and the square or rectangular steel column is filled with concrete.	USPTO	US 11639601
1.	Mohd Aftab Alam Fahad Ibrahim Al-Jenoobi Abdullah M. Al-Mohizea	13146	22/6/2023	MEASURING CUP	The measuring cup includes numerous embodiments configured for a user to precisely determine the cup contents without need to lift the cup to one's eye level or to lower the eye level to the level of the cup contents. The various embodiments include folding cups; cups having transparent passages in the wall; cups having adjustably positionable bottoms; cups having level indicator rods in the cup interior extending upward from the cup bottom; cups having one or more filaments extending across the cup interior; cups having rigid level indicators spanning the cup interior; cups having adjustably positionable level indicator tabs therein; cups having buoyant level indicator tabs adjustably positionable in the cup interior; and cups having removable clip-on scales extending down along the interior of the cup wall, the scales having a plurality of attachment points for the removable attachment of a level indicator tab at a desired attachment point	SAIP	SA 13146
2.		10883868	5/1/2021			USPTO	US 10883868
3.		12406	30/4/2023			GCPO	GCC 0012406
1.	Thamer Ali Albahkali Hany Hassan Aly Sayed	10743700	18/8/2020	Curtain rod wall mount	The curtain rod wall mount is a fixture used in pairs to support opposing ends of a cylindrical curtain rod between opposing walls of a building or window frame. In a first embodiment, the wall mount includes a helical spring disposed between a fixed plug and a movable plug, the spring being coaxially disposed around a guide screw extending between the plugs, the spring assembly being housed in a tubular sleeve that an end of the curtain rod slides into to bear against the movable plug. A second embodiment is similar to the first, but omits the guide screw. In a third embodiment, the wall mount has a wall plate having a threaded stud extending therefrom. The tubular sleeve has a plug with an internally threaded bore in one end that engages the threaded stud, the other end being hollow to receive an end of the curtain rod.	USPTO	US 10743700
2.		13208	9/8-7/2023			SAIP	SA 13208
1.	Adel Mohammed Al-Shayea Abdulaziz Mohammed El-Tamimi Mustufa Haider Abidi	10894274	19/1/2021	Fin and condenser coil cleaning device for air conditioner units	The fin and condenser coil cleaning device for air conditioner units is a cleaning device for cleaning the fins and condenser coils of window-mounted air conditioner units. A horizontal support is driven to selectively raise and lower with respect to the fins on the exterior portion of an air conditioner unit. The horizontal support carries nozzles for spraying water on the fins at sufficient pressure that the water passes through the fins and cleans the condenser coils contained within the housing of the air conditioner unit. A plurality of brushes are mounted on the horizontal support for brushing the fins as the horizontal support moves vertically with respect thereto. Sensors may be provided for controlling the direction of vertical movement of the horizontal support and for selectively actuating a motor and a pump for driving movement of the horizontal support and spraying the water through the nozzles.	USPTO	US10894274
2.		11995	15/3/2023			SAIP	SA 11995
1.	Abdullah Nasser Alodhayb	10732048	4/8/2020	Micromechanical photothermal spectroscopy system and method	The micromechanical photothermal spectroscopy system and method includes a cantilever assembly having at least one cantilever thermal sensor extending from a support. The sensors may be simple bimetallic sensors, or may include microchannels made from two materials having different thermal expansion coefficients for analysis of microfluids. A beam of infrared light is separated out from solar radiation by gratings and filters, and is at least partially projected on the cantilever sensor(s). Heat released from the analyte by absorbance of infrared light results in deflection of the cantilever sensor(s), which is measured by a deflection detector. A filter wheel permits tuning of the sunlight-based infrared light beam to plot a spectrum of absorbance as a function of wavelength or wave number characteristic of the analyte. The deflection detector may be optical (using a laser and position sensitive detector(s)), or may use piezo-resistive material embedded in the sensor(s).	USPTO	US 10732048
2.		11952	10/1/2023			SAIP	SA 11952
1.	Yousef A. Al-Salloum Husain Abbas Mohammad Alrubaidi Tarek H. Almusallam Hussein Mohamed Elsanadedy	10934734	2/3/2021	Damped reinforced joint for beam-column connection	A damped reinforced joint for a beam-column connection is provided for improving the resistance of steel-framed buildings against progressive collapse. Prestressing cables extend across each joint, and each prestressing cable is partially encased within a bent pipe. Each bent pipe may have multiple bends, forming a rippled or undulating shape. The prestressing cables strengthen the connections in the joints, and the bent pipes provide damping for dissipation of seismic energy and the like, thus improving resistance to earthquakes and other seismic, vibratory and/or shock events to the building frame. Images (5)	USPTO	US 10934734
2.		12029	17/1/2023			SAIP	SA 12029

1.	Shereef Aly Sadek	12280	31/3/2023	Vertical takeoff and landing unmanned aerial vehicle	The vertical takeoff and landing unmanned aerial vehicle includes a pair of selectively rotatable ducted fans and a selectively rotatable thrust vectoring nozzle providing vertical takeoff and landing for an unmanned aerial vehicle or a similar type of aircraft. A pair of fixed forward-swept wings are mounted on a rear portion of a fuselage, and a pair of canards are mounted on a top end of a forward portion of the fuselage. The pair of ducted fans are respectively mounted on free ends of the pair of canards, and are selectively rotatable about an axis parallel to a pitch axis of the fuselage. An engine is mounted in the rear portion of the fuselage, and a thrust vectoring nozzle is mounted on the rear portion of the fuselage for directing thrust exhaust from the engine. The thrust vectoring nozzle is selectively rotatable about an axis parallel to the pitch axis.	GCCPO	GC0012280
1.	Zeyad Abdulwahid Ghaleb Haidar	10815965	27/10/2020	Multi-piston bladeless wind turbine	The multi-piston bladeless wind turbine creates electrical energy using hydraulically connected pistons. The system may include a disk, a small piston in fluid communication with a large piston, and a crankshaft attached to the large piston. The disk transfers forces from the wind to the small piston. Hydraulic fluid then transfers the forces to the larger piston. When the disk and associated small piston have been forced to the end of their stroke by the wind, a gate in the disk is opened to reduce wind force on the disk by allowing air to travel through the disk. Subsequently, the disk and associated small piston are pushed back to the beginning of the stroke by the pressure created by the large piston's weight. This process is repeated by closing the gate in the disk. A crankshaft powering an electric generator is turned by the movement of the large piston.	USPTO	US 10815965
2.		11529	1/12/2021			SAIP	SA 11529
1.	Husain Abbas Yousef A. Al-Salloum Tarek H. Almusallam Nadeem A. Siddiqui Baha M. A. Khateeb	10954672	23/3/2021	Method of connecting a circular concrete-filled steel tubular column to a reinforced concrete footing	The method of connecting a circular concrete-filled steel tubular column to a reinforced concrete footing provides a process for constructing a circular concrete-filled steel tubular column anchored in a reinforced concrete footing. A tubular member is partially embedded in a cavity formed in a block of reinforced concrete, such that a pair of flanges thereof is positioned adjacent to and above a base surface of the cavity. A steel tube is partially inserted into the cavity, such that rotation of the steel tube will cause the pair of flanges to interlock with a pair of slots at the lower end of the steel tube, locking the steel tube in place with respect to the tubular member and the block of reinforced concrete. The cavity is filled with concrete grout to secure the column, and the steel tube is filled with concrete to form the circular concrete-filled steel tubular column.	USPTO	US 10954672
2.		11605	6/1/2/2022			SAIP	SA 11605
1.	Tarek H. Almusallam Yousef A. Al-Salloum Aref A. Abadel	10563403	18/2/2020	Multi-leg fiber reinforced concrete	The multi-leg fiber reinforced concrete is concrete in which fibers have been embedded to prevent the concrete from being fractured due to cracks developing therein. Each fiber has multiple legs, defining two and three dimensional structures. At least one fiber is embedded in a volume of concrete, where the at least one fiber has at least first and second legs respectively extending along first and second directions. The first and second directions are angularly oriented with respect to one another between 45° and 135°, with each of the first and second legs having a free end and a fixed end. Each free end has a substantially Z-shaped contour. The fixed ends of the first and second legs may be joined together to define a two-dimensional fiber structure. The at least one fiber may be partially coated with a polymeric material, such as polypropylene.	USPTO	US 10563403
2.		10837	14/9/2022			SAIP	SA 10837
1.	Husain Abbas Yousef A. Al-Salloum Tarek H. Almusallam Hussein Mohamed Elsanadedy Mohammad Alrubaidi	10415230	17/9/2019	Strengthening system for beam-column connection in steel frame buildings to resist progressive collapse	The strengthening system for beam-column connections in steel frame buildings to resist progressive collapse helps to mitigate progressive collapse in the event of accidental column loss by using a system of rippled steel plates reinforcing the beam-column connection. Various configurations of rippled steel plates are provided to connect in-plane and transverse beams at a joint. In the event of severe damage caused to a column of a steel framed building, the upper joints of the damaged column undergo downward movement. The rippled plates at the joint straighten during the initial downward movement, and resist further downward movement after complete straightening of the ripples. This helps in the development of catenary action in steel beams. The proposed system is simple, fast to construct, demountable, and easy to repair/replace after damage caused by blast loads.	USPTO	US 10415230
2.		10992	27/9/2022			SAIP	SA 10992
1.	Abdulrahman Abdullah Ali Alshammaa Abdullah Mohammed Ali Noman Khaled Ebraheem Addoweesh Ayman Abdullah Abdulaziz Alabduljabbar Abdulrahman Ibrahim Aloliah	10116229	30/10/2018	Multilevel cascade hexagonal voltage source converter with isolated DC sources	The multilevel cascade hexagonal voltage source converter with isolated DC sources has a plurality of polyphase stages, each stage having AC inputs corresponding to a number of phases, and a numerically identical plurality of n outputs, cascaded by connection of the outputs of one stage to the inputs of a next stage. Each stage has plural DC-to-AC converters corresponding to the number of phases, and connected to one of the AC inputs, each having a connection for receiving DC power, and amplifying its AC outputs with the received DC power. The DC-to-AC converters are connected by split inductors, with each split inductor providing an output at a center tap terminal. The inductor half-segments are cross-connected with inductive cross-coupling links inductively connected to the inductor half-segments at opposite sides of the polyphase ring connection. The middle terminals of the n split inductors provide n AC outputs for its respective polyphase stage.	USPTO	US 10116229
2.		9931	8/5/2022			SAIP	SA 9931
1.	Ali Mohamad Ali Alsamhan Ahmed Nageeb Ahmed Badwelan	10442029	15/10/2019	Method of friction stir spot welding	The method of friction stir spot welding uses a database of stored optimization parameters to maximize welding strength for an input type of material and an input geometrical parameter of the material, such as its thickness. Experiments are performed for a variety of different materials having different thicknesses. Each experiment performed for each material and each thickness associated with the material measures the welding strength of a friction stir spot welding process for varying values of an initial dynamic welding parameter, a final dynamic welding parameter and a type of varying function. The values of the initial dynamic welding parameter, final dynamic welding parameter and type of varying function that maximize the measured welding strength for the selected material and its selected thickness are stored in a lookup table. A rotating tool may then be controlled using these optimized values in order to maximize welding strength.	USPTO	US 10442029
2.		10003	15/5/2022			SAIP	SA 10003

1.	Khalid Abdullah Ibrahim Alruhaimi	10368880	6/8/2019	Universal base attachment bit and cutting bit assembly	A universal base attachment bit and cutting bit assembly includes a base attachment bit and a cutting bit. The base attachment bit includes an outer threaded portion at a first end, a latch at an opposing second end, and at least one multi-sided gripping portion between the latch and the first end. The cutting bit includes a hollow cylindrical outer body and a cylindrical coupling portion within the cylindrical outer body. The cylindrical outer body includes a peripheral wall having opposed first and second open ends and a cutting edge at the first end. The coupling portion is spaced from the peripheral wall of the cylindrical body and includes an inner thread along an inner surface thereof.	USPTO	US 10368880
2.		9993	15/5/2022			SAIP	SA 9993
1.	Abdulrahman M. Al-Ahmari Abdullah Yahia M. Alifaify Mohamed Hamid Hamid	10065242	4/9/2018	Adjustable build envelope for powder bed fusion machines	The adjustable build envelope for powder bed fusion machines includes a frame in the build chamber having four movable sides, a base and two motors with lead screws. The motors are placed at an angle of 45° with respect to the side of the frame, so that as the motors rotate the lead screws, the two sides of the frame slide in opposite directions. The sides move inward with the help of guide pins and dovetail grooves, thereby reducing the build envelope volume. For large builds, both motors rotate in the reverse direction to increase the build envelope volume. By changing the build envelope volume according to the given build size, powder waste is reduced.	USPTO	US 10065242
2.		9994	15/5/2022			SAIP	SA 9994
1.	Abdulrahman Alhozaimy Raja Rizwan Hussain Abdulaziz Al-Negheimish Devendra Deo Narain Singh	11384016	12/7/2022	Additive for reinforced concrete	The additive for reinforced concrete is a concrete additive for preventing corrosion of steel rebars in steel-reinforced concrete, improving the workability of the cast concrete, and reducing water absorption/permeability in the cast concrete. The reinforced concrete may be a conventional reinforced concrete, such as that formed from a mixture of water, an aggregate and cement, having at least one steel rebar embedded in the mixture. The additive is added to the mixture prior to curing and casting. The additive may for example, have a concentration with respect to the cement of between 0.25 wt % and 1.0 wt %. The additive includes a triazole and a non-ionic surfactant including a poly oxy ethoxylated reaction product of sorbitan and a fatty acid. The triazole and the non-ionic surfactant are dissolved in the solvent.	USPTO	US 11384016
1.	Abdulrahman Alhozaimy Raja Rizwan Hussain Abdulaziz Al-Negheimish	11384015	12/7/2022	Corrosion-preventing additive for reinforced concrete	The corrosion-preventing additive for reinforced concrete is a concrete additive for preventing corrosion of steel rebars in steel-reinforced concrete. The corrosion-preventing additive is powdered scoria, including concentrations of about 45 wt % SiO ₂ , 14 wt % Fe ₂ O ₃ , and 15.5 wt % Al ₂ O ₃ , with the remainder being standard components found in volcanic rock. The average particle size of the powdered scoria is 45 microns or less. Reinforced concrete treated with the corrosion-preventing additive includes a mixture of an aggregate, water, and cement (such as Portland cement), along with at least one steel rebar embedded in the mixture, and the powdered scoria.	USPTO	US 11384015
1.	Thamer Ali Albahkali Hany Hassan Aly Sayed Mohamed Elsayed Mohamed Bassuni	10397989	27/8/2019	Oven with temperature probe	The oven with a temperature probe measures the temperature of food being cooked within the oven to provide real time feedback for determining a status of the food being cooked, such as, for example, indications that the food is fully cooked, partially cooked or uncooked. The oven with a temperature probe is similar to a conventional oven, but with a telescopic tube which selectively extends into the cooking chamber of the oven. An upper end of the telescopic tube is mounted within an open interior of a hollow upper wall of the oven, and a lower end of the telescopic tube defines a probe tip, containing a temperature sensor for measuring an internal temperature of the food being cooked. When not in use, the telescopic tube collapses fully within the open interior of the hollow upper wall. A display indicates cooking status of the food, based on the measured temperature.	USPTO	US 10397989
2.		9516	13/3/2022			SAPO	SA 9516
1.	Ehab Salaheldin Awad Mohamed	10359566	23/7/2022	Planar waveguide converter	The planar waveguide converter is a silica-glass, bi-directional planar waveguide converter, providing conversion from an input from a single-mode waveguide to an output for a three or four-mode waveguide. Conversion takes place through an intermediate stage of a pair of two-mode waveguides. In the initial stage, the input from the single-mode waveguide passes through a V-shaped, graded-index mode slicer, where it is converted into a pair of two-mode signals. In the intermediate stage, each of the two-mode signals is received by a corresponding diamond or quadrilateral-shaped phase shifter. The output of each phase shifter is transmitted to an M-shaped, graded-index mode combiner, which outputs either a three or four-mode signal.	USPTO	US 10359566
2.		9515	13/3/2022			SAIP	SA 9515
1.	Saad Abdulmohsen M. Alabdulkarim	10328539	25/6/2019	Assistive device for heavy tool operation	An assistive device for heavy tool operation includes a rectangular frame and four legs extending from the corners of the frame. A tool base can extend through a slot in the frame. The tool base is configured to support a mechanical support arm and tool. A height and horizontal position of the tool base relative to the frame is adjustable. Each leg is connected to a wheel to allow the assistive device to travel with a user. The assistive device can support a majority, if not all, of the weight of an attached heavy tool and mechanical support arm, while allowing the user to operate the tool and adjust its position with minimal applied force.	USPTO	US 10328539
2.		9393	16/2/2022			SAIP	SA 9393
1.	Abdullah Mohammed Ali Noman Abdulraman Abdullah Alshammaa Khaled Ebraheem Addoweesh	10141865	27/11/2018		The hybrid CHB-TVSI multilevel voltage source inverter is a polyphase grid-connected multilevel inverter system has an upper part and lower part that provides output power in three phases. The upper part uses cascaded H-bridge cells having pairs of switched intermediate outputs. DC power sources are connected in series or parallel to track a desired	USPTO	US 10141865

2.	Ayman Abdullah Abdulaziz Alabduljabbar Abdulrahman Ibrahim Alolah	9435	28/2/2022	Hybrid CHB-TVSI multilevel voltage source inverter	input voltage to feed respective H-bridges, providing an optimum power point tracking (MPPT) of the DC power sources. The lower part, also connected to DC power sources, uses a triple voltage source multilevel inverter that includes three cascaded units, each configured as a three-leg, two-level inverter. The lower part is connected to the upper part, the upper part providing a corresponding polyphase output.	SAIP	SA 9435
1.	Manal Ahmed Gasmelseed Awad Awatif Ahmed HENDI Khalid Mustafa Osman Ortashi Nawal Ahmad Abdu Madkhali Aisha Salah Badwelan	9517	13/3/2022	Dye-sensitized solar panel	The dye-sensitized solar panel includes a metal oxide layer and an organic photosensitizing dye on the metal oxide layer. The organic photosensitizing dye is extracted from chard (B. vulgaris subsp. cicla), and the metal oxide layer is composed of zinc oxide nanoparticles synthesized using B. vulgaris subsp. cicla dye as a reducing agent. A working electrode is mounted on a first transparent substrate. The working electrode includes a metal electrode and the metal oxide layer formed thereon. A counter electrode is mounted on a second transparent substrate. An electrolyte is sandwiched between the working electrode and the counter electrode.	SAIP	SA 9517
1.	RABEH H ELLEITHY SHAFAT AHMED SALAHUDEEN OTHMAN Y ALOTHMAN	8366	2016.10.06	Internal batch mixer with three-wing non-intermeshing rotors	The internal batch mixer with three-wing non-intermeshing rotors includes a pair of non-intermeshing, counter-rotating, tangential rotors each having three wing portions. The internal batch mixer includes a housing defining a mixing chamber, where the mixing chamber includes first and second substantially circular chamber cavities in open communication with one another at a central region of the mixing chamber. The first and second non-intermeshing, counter-rotating winged rotors are respectively rotationally mounted within the first and second substantially circular chamber cavities, such that the central region of the mixing chamber defines an interacting mixing region between the first and second non-intermeshing, counter-rotating winged rotors. The first and second non-intermeshing, counter-rotating winged rotors are driven to counter-rotate with respect to one another. Each rotor has a substantially helical contour and a blade portion divided into three separate wings. Fig. 1	USPTO	8366
1.	FAHAD KHSHIM ALQAHTANI	US 15/656,066	2017.07.21	Recycled Plastic Aggregate for use in Concrete	The synthetic recycled plastic aggregate for use in concrete is a composite material containing between 30% and 50% by weight shredded recycled plastic, the balance being a filler embedded in a matrix of the recycled plastic. The recycled plastic includes polyethylene terephthalate (PET). The filler can include dune sand, fly ash and quarry fines. The synthetic recycled plastic aggregate is best used to make concrete with a water-to-cement ratio of at least 0.5. Fig. 1.	USPTO	US 15/656,066
2.		118390726	2021-08-04			SAPTO	118390726
1.	MOHANNAD YOUSEF ABDULGHANI HEBA ABDULLATIF KURDI	US 16/216,860	2018.12.11	BAGGAGE HANDLING AND DELIVERY SYSTEM	The baggage handling and delivery system provides a plurality of secure pickup stations for individual passengers to receive their baggage. A plurality of interconnected conveyer belts are used to create a variety of different routes for baggage to follow, with each individual route terminating at a pickup station. Each baggage item is provided with an identifier, such as a bar code, a radio frequency identification (RFID) tag or the like, such that each item of baggage associated with an individual passenger is routed to the specific pickup station assigned to that passenger. Under guidance of a connected controller, each item of baggage entering the baggage handling and delivery system is scanned and routed along a specific path to be received by the appropriate pickup station. Each pickup station is secure and accessible only to the assigned passenger. FIG. 1	USPTO	US 16/216,860

2.		SA 8870	2021-11-02			SAPTO	SA 8870
1.	SAAD ALABDULKARIM	119410008	2021-10-17	Wearable Load Carrier	The wearable load carrier (10) is a body-mounted carrier for carrying and transporting loads, such as boxes, packages, containers and the like. It is supported by the back or torso and shoulders of the user, and is adjustable to receive and carry loads of varying sizes and configurations. The wearable load carrier (10) includes a pair of rails (12), each having an upper end and a lower end, which partially define a carrier frame. A support platform (16) is provided for supporting the load. The support platform (16) includes front and rear edges (20), the front edge being selectively secured to and extending between the pair of rails (12) at an adjustable height and tilt. A pair of shoulder straps (72), a waist strap and a chest strap (68) are provided for releasably securing the carrier to the user's back or torso. Fig. 1.	SAPTO	SA119410008*
1.	REFAT AHMED ELSHEIKHY MOSLEH ALI ALSHAMRANI	117390095	2021-07-27	METHOD OF EXTINGUISHING OR RETARDING FIRE USING NANO-CLAY	A method of extinguishing or retarding fire can include disposing nano-clay onto the fire to retard or extinguish the fire. The nano-clay can be in the form of a powder. The powder can include nanoparticles having a particle size of about 1 nm to about 50 nm. The nano-clay can be used alone or mixed with water. Fig. 2.	SAPTO	SA117390095*
1.	SAID ABDEL-KHALIK KEVIN SCHOONOVER HANY AL-ANSARY	117380653	2021-06-16	SPRAY NOZZLE APPARATUS	The present disclosure introduces a nozzle apparatus and method. In one embodiment, a spray nozzle apparatus is described. The spray nozzle apparatus includes a plurality of flow channels formed by the combination of a: sprayhead, a major element, and a minor element. The sprayhead may have a plurality of holes. The major element is retained within the sprayhead by a nozzle nut and spring, allowing a first annular gap to form between the sprayhead and the major element. The minor element is retained within the major element by a second nozzle nut and second spring, allowing a second annular gap to form between the major element and the minor element. The minor element may have an axial hole. Other embodiments also are described. FIG. 1	SAPTO	SA117380653*