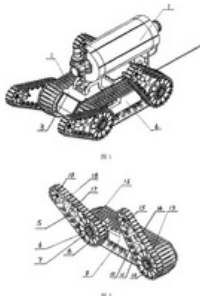
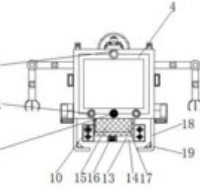
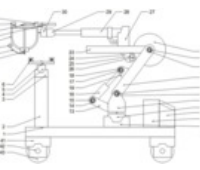
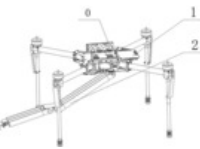
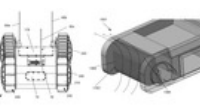
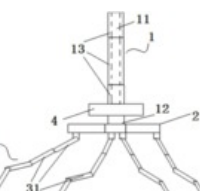
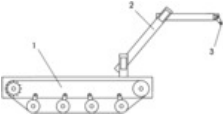
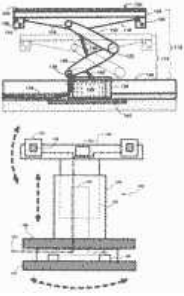
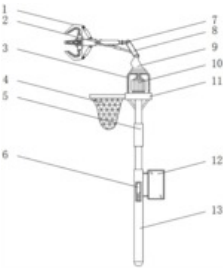
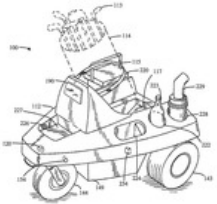
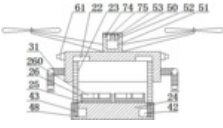
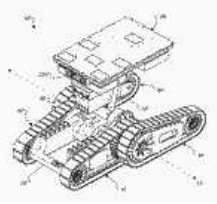
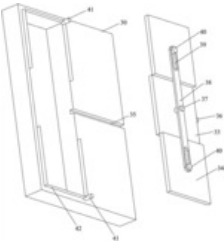
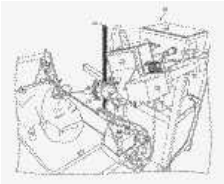
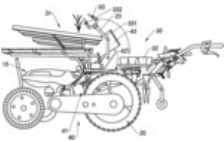
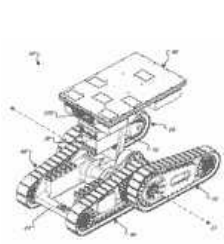
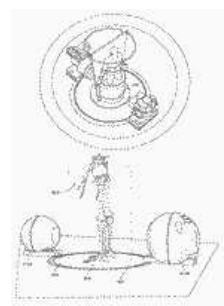
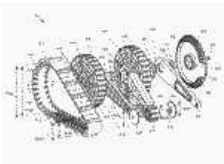
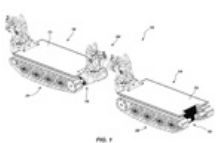
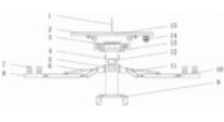
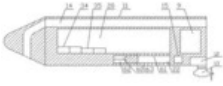
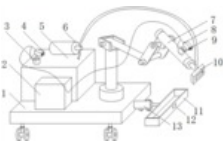
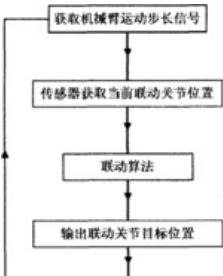
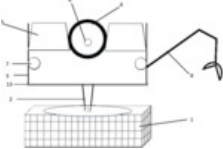
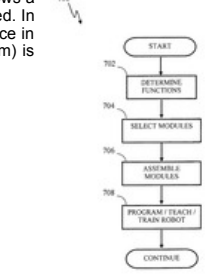
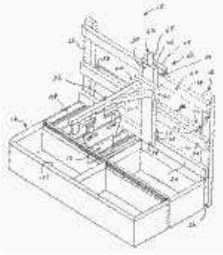
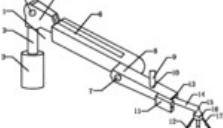


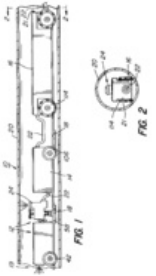
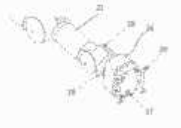
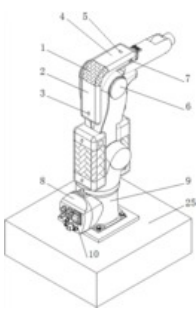
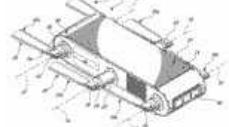
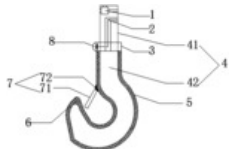
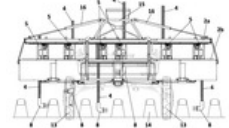
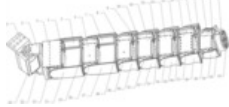
1185 results for (WATERPROOF AND ROBOTIC AND ARM AND CAMERA)/AB/IW/CLMS/DESC/ODES/TI/TX - Collection: FAMPAT

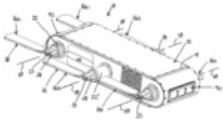
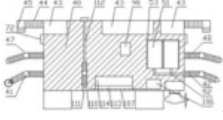
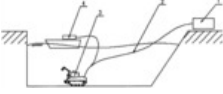
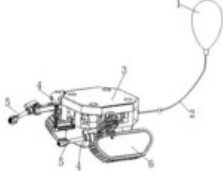
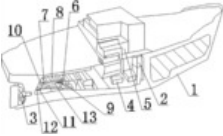
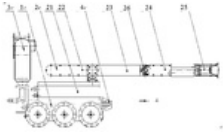
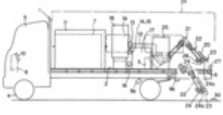
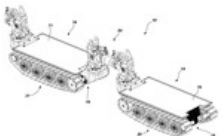
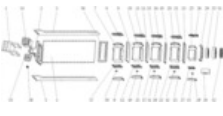
#	 Title	Publication number	1st app. date	Applicant/Assignee	
1.	 Modular track rocker-arm type colliery underground robotic explorer	CN201516604	2009-10-12	OPEN & ROBOT MANUFACTURING* TANGSHAN KAICHENG ROBOT MANUFACTURE*	100 %
The utility model discloses a modular track rocker-arm type colliery underground robotic explorer, and belongs to the track type moving platform design field. The robotic explorer is applicable to colliery underground exploration moving platforms, and comprises a left (right) assembly module, a middle engine body assembly module and an upper engine body assembly module, wherein the left (right) assembly module is a symmetrical structure and arranged on two sides of the middle engine body assembly module, the upper engine body assembly module is located above the middle engine body assembly module, a walking track, two front rocker arms capable of being controlled independently and two rear rocker arms which are axially controlled are mounted on the left (right) assembly module, a front and a rear rocker arm tracks are mounted on the front and the rear rocker arms, and a detection machine is mounted on the upper engine body assembly module. The robotic explorer has the advantages of anti-explosion and waterproof effects and strong obstacle-clearing capability. The modular track rocker arm type colliery underground robotic explorer is particularly adaptable to colliery underground detection and rescue operations. 					
2.	Methods and systems for food preparation in a robotic cooking kitchen	CA2933095	2015-02-20	M. Olivik MBL*	100 %
The present disclosure is directed to methods, computer program products, and computer systems for instructing a robot to prepare a food dish by replacing the human chef's movements and actions. Monitoring a human chef is carried out in an instrumented application-specific setting, a standardized robotic kitchen in this instance, and involves using sensors and computers to watch, monitor, record and interpret the motions and actions of the human chef, in order to develop a robot-executable set of commands robust to variations and changes in the environment, capable of allowing a robotic or automated system in a robotic kitchen to prepare the same dish to the standards and quality as the dish prepared by the human chef. 					
3.	Underwater robot with a camera that is convenient for fixing a waterproof cover	CN108769631	2018-08-15	DONGGUAN CITY KELLER DI NC TECHNOLOGY*	100 %
The present invention relates to an underwater camera to facilitate fixing a waterproof cover for a robot, includes a body, a probe and a signal light, the left of the body is provided with a display screen, and the robotic arm is attached to both sides of the body, a probe tip disposed on the front side of the lower body, and a lamp disposed on both sides of the detector heads, over the front side of the signal lamp disposed within the body, and a support leg is attached to both sides of the lower body, the inside of the reinforcing plate is secured with support legs. The present invention is provided with a plurality of the tube, the liquid is collected and detected for the different regions can, according to different areas of water to make the corresponding remediation schemes contamination, enhance the functionality of the underwater robot which, through Y-type column located at the same time, can be fixed to the header processing, second locking fingers through an elastic structure constituted 2nd springs and the cove, of different diameters can be fixed to the collecting tube, enhancing the practicability of the device. 					
4.	Multi-degree of freedom sensor	US20180080841	2017-09-15	VERB SURGICAL* WEIBO SURGICAL	100 %
A capacitive sensor for characterizing force or torque includes a first plurality of non-patterned conductive regions and a first plurality of patterned conductive regions, and a second plurality of non-patterned conductive regions and a second plurality of patterned conductive regions. The first and second pluralities of non-patterned conductive regions are facing and the first and second pluralities of patterned conductive regions are facing. 					
5.	Automatic picking machine may automatically identify apple maturity apple	CN109168631	2018-09-20	LI ZHENXING	100 %
The present invention discloses a method for automated picking machine may automatically identify apple maturity of the apple, including a chassis, a chassis located above the ground, sensor mechanism is provided above the chassis, the chassis is provided above the robotic arm mechanism, mature discrimination picking mechanism is arranged above the robot arm mechanism, mature discrimination picking mechanism is arranged above the picking mechanism, travelling mechanism is disposed under the chassis, the chassis and the battery pack controller are provided above, with the battery box is electrically connected to the supply input of controller, camera input coupled to a signal of the controller, and a color identification sensor electrically connected, and a signal output terminal respectively with the vision of the stepping motor, a mechanical arm stepper motor, linear motor arm, robotic arm rotation thereof, the telescoping linear motor, pouring a stepper motor, motor identification picked, the picking holder means, travel means are electrically connected. The present invention has the advantages that, simple structure, strong practicability. 					
6.	Auto retractable mechanical arm aerial unmanned aircraft	CN108928483	2018-07-17	GUILIN UNIVERSITY OF ELECTRONIC TECHNOLOGY*	99 %
The present invention discloses a robotic arm aerial unmanned aerial vehicle capable of automatically retractable, comprising an unmanned aerial vehicle body, wherein: a camera body mounted on the unmanned aircraft further includes, in the unmanned airplane fuselage at the bottom of the camera platform and set the robot arm, the present invention robotic arm can be telescopic, axial rotation, one cannot reach all the way into the danger zone, assist or replace people perform particular tasks, the ability to work in harsh environments having; animal biological characteristic is in the capture tree, an unmanned robotic arm end grippers tightly grip the tree trunk may be through the upper, like a bird perch in motion, so as to capture a tree habit of running over life and the like; ptz camera on a camera provided at, the platform may be telescoped to camera positions in the camera, reducing wind resistance, saving power consumption, and may be waterproof; at an unmanned aerial vehicle to perform a task, cooperate with steering gear and a rotation through, the robot arm retracts into the bottom of the unmanned aircraft, and aircraft drag is reduced frontal area, reaches a saving power consumption of the object. 					
7.	Robotic system and methods of use	WO2013169312	2013-01-11	LUO BAI SCIENTIFIC & TECHNICAL ROBOTEX*	99 %
A robotic system that can have a body and four flippers is described. Any or all of the flippers can be rotated. The flippers can have self-cleaning tracks. The tracks can be driven or passive. The robotic system can be controlled by, and send audio and/or video to and/or from, a remote operator control module. The methods of using and making the robotic system are also described. 					
8.	Harvesting robotic arm	CN108902063	2018-09-07	BAIDU ONLINE NETWORK TECHNOLOGY*	99 %
The present invention embodiment provides a robotic arm-fishing, underwater fishing device for use, underwater fishing device includes a control unit, the retrieval arm includes: manipulator body, having a conveying pipe; base, and the robot body to the suction of, on the suction side passing through the mount; grabbing mechanism, coupled to the base, a gripping mechanism for grasping objects of harvesting; image acquisition device, and the manipulator body connection, for acquiring an image of the surrounding environment; manipulator body, a capture mechanism and an image pickup device is electrically connected to the control unit, the robot arm body and/or grasping mechanism according to the control unit based on the image acquisition device acquires an image of the generated control instructions, performing fishing operations. The present invention embodiment of a harvesting robot arm due to the image acquisition unit it is possible to accurately obtain the position of the objects to be caught, and the gripping mechanism of the delivery conduits and crawl formula through the suction-type, the precise objects implement different types of fishing. 					

9.	Harbour boats and ships tally load line surveys appearance	CN205022729	2015-10-15	GUANGZHOU OUTBOUND FREIGHT* PORT OF GUANGZHOU*	99 %	
Harbour boats and ships tally load line surveys appearance, including the tracked vehicle, locate the tracked vehicle automobile body robotic arm, locate the terminal image acquisition device that obtains boats and ships load line image of this robotic arm, control tracked vehicle about the action wheel rotate and the behavioral control device of robotic arm action, the image processing display device who obtains the image of image acquisition device collection and handle the demonstration, the track of tracked vehicle is the track of armco iron track or every section installation permanent magnet. The utility model discloses make the tally personnel need not to take advantage of the boat to plunge into the commercial sea, can carry out the accuracy to six load lines in the boats and ships and survey convenience safe in utilization on the face of deck. Having and surveying the precision far above traditional visual detection, do not receive anyone to be the experience or weather conditions influence, accords with the boats and ships load and calculate the requirement, can measure in all weather, not limited by other objective condition, even characteristics such as influence measurement yet under the load line scale deck face circumstances invisible totally.						
10.	Multifunctional pods	US20060146445	2005-01-04	EAULT MAXTOR OPTIMUS LAJSENSING OPTIMUS LICENSING* OPTIMUS SERVICES OPTIMUS SERVICES REABILITY OPTIMUS SERVISIZ EHLEHLSI SEAGATE TECHNOLOGY	99 %	
A pod, particularly for indoor use, consisting of a vertically movable bollard adapted to present utilities and optionally provide security function, presented in a watertight or waterproof housing is disclosed. The pod can provide a watertight or waterproof seal in both its distended and retracted state and also provides a substantially flush, cleanable top surface with respect to the surrounding floor, table, or surface when retracted. The pod may optionally be adapted with a universal adaptor for presenting gas and other like utilities. All utilities are sourced from beneath the ground or from a source outside the pod. The pod is powered and may be controlled directly on the bollard or distant to the bollard by a wired or wireless connection thereto. Finally, the pod may be placed in a floor, table, or other structure as a single stand-alone unit and may work in conjunction with other pods.						
11.	A robotic arm for walnut is picked	CN207678305	2017-12-18	AI LI AISEN*	99 %	
The utility model discloses a robotic arm for walnut is picked, including tongs, the string bag, rotating base, handheld pole and connecting rod, control panel is installed to the one end of handheldpole, the display screen is installed to one side of handheld pole, the intermediate position department that connectivity platform kept away from connecting rod one end installs the camera. The utility model discloses an install the motor, and the output of motor is connected with rotating base's bottom, make rotating base to rotate, make the staff may not be with walking about the angle that snatchs with regard to adjustable tongs, through installing a hydraulic telescoping rod, angle regulation from top to bottom when make picking, through installing the 2nd hydraulic telescoping rod, and the 2nd hydraulic telescoping rod's output is connected with the tongs, make the tongs can be closed with open, the realization is snatched the walnut, surface coating through at handheld pole has theslipmat, handheld and the gripping of staff of being convenient for.						
12.	Robotic golf caddy	CA2997160	2016-10-14	LEMMINGS*	99 %	
An autonomouse robotic golf caddy which is capable of following a portable receiver at a pre-determined distance, and which is capable of sensing a potential impendingcollision with an object in its path and stop prior to said potential impending collision.						
13.	Intelligent and tof imaging technology based on the unmanned aircraft system of grape picking	CN109168627	2018-10-11	Rain	99 %	
TOF imaging technology based on an unmanned aerial vehicle and the one of the intelligent grape picking system, comprising an unmanned device, storage device, picking devices, guards, telescoping means, identification means, the closure device, a wireless device and a control center, an unmanned aerial vehicle comprises an unmanned warehouse, shipping an unmanned aerial vehicle and a picking an unmanned aerial vehicle, a storage device includes a coupling mechanism, grape storage bin, the telescope motor, a telescopic adsorption columns, grape storage plate, rotating the platform and the grape receiving plate, the picking apparatus includes a picking robot arm, the robotic arm and the cutting arm is removed, the guard includes a guard layer of silica gel, protection path, protection and a protection baffle retractable telescopic motor, a telescopic device includes a telescopic passageway, hydraulic telescoping, the telescoping rod and a telescoping suspension brackets, identifying means includes 1st camera, video camera and the TOF sensor 2nd, closure device comprises a memory and a storage enclosure panel enclosing a motor, a wireless device are provided in the control center internal, centered on the planned position is controlled.						
14.	Robotic vehicle with tracks and flippers	WO2008105948	2007-10-02	ENDEAVOR ROBOTIC INTERMEDIATE HOLDINGS IROBOT IROBOT DEFENSE HOLDINGS*	99 %	
A robotic vehicle (10,100,150A,150B150C,160,1000,1000A,1000B,1000C) includes a chassis (20,106,152,162) having front and rear ends (20A,152A,20B,152B) and supported on right and left driven tracks (34,44,108,165). Right and left elongated flippers (50,60,102,154,164) are disposed on corresponding sides of the chassis and operable to pivot. A linkage (70,156,166) connects a payload deck assembly (D1,D2,D3,80,158,168,806), configured to support a removable functional payload, to the chassis. The linkage has a first end (70A) rotatably connected to the chassis at a first pivot (71), and a second end (70B) rotatably connected to the deck at a second pivot (73). Both of the first and second pivots include independently controllable pivot drivers (72,74) operable to rotatably position their corresponding pivots (71,73) to control both fore-aft position and pitch orientation of the payload deck (D1,D2,D3,80,158,168,806) with respect to the chassis (20,106,152,162).						

15.	Landscaping operation robot with waterproof camera device	CN107932492	2017-11-21	LIU NANHUI	99 %	
The invention discloses a landscaping operation robot with a waterproof camera device. The landscaping operation robot comprises a carriage body. A manipulator device is arranged on the carriage body and comprises a rotary shaft mounting base fixed to the carriage body. A first rotary shaft, a second rotary shaft and a third rotary shaft are sequentially and rotationally connected in the rotary shaft mounting base in a sleeved mode. A rotary support is arranged at the front end of the first rotary shaft. A first gear and a second gear are rotationally connected with the two ends of the rotary support correspondingly and are oppositely arranged in parallel. A third gear is fixedly connected with the front end of the second rotary shaft. The third gear is perpendicular to the first gear and is in meshing transmission with the first gear. The first gear and the third gear are identical in shape. A fourth gear is fixedly connected with the front end of the third rotary shaft. Movement of the manipulator device is diversified, and various operation demands can be met; and a compartment door device is composed of three independent door bodies, namely an upper door body, a middle door body and a lower door body, the structure design is novel, the maintaining cost is low, and the landscaping operation robot is practical.						
16.	Robotic system to augment endoscopes	US20120065470	2011-09-14	JOHNS HOPKINS UNIVERSITY*	99 %	
A robotic system for steerable tip endoscopes includes a support arm, an endoscope gripping assembly rotatably connected to the support arm by a rotation assembly, and a translation assembly operatively connected to the support arm. The endoscope gripping assembly is configured to grip any one of a plurality of differently structured endoscopes, the translation assembly is configured to move the support arm along a linear direction to thereby move an endoscope when held by the endoscope gripping assembly along an axial direction, and the rotation assembly is configured to rotate the endoscope along a longitudinal axis of rotation.						
17.	Robot arm of the trans planter	CN208446018	2017-12-25	WUXI WATSON ELECTRIC SYSTEM TECHNOLOGY*	99 %	
The present utility model provides a pump with a mechanical arm of the trans planter, which comprises a body trans planter, one traveling unit, an implantation device, and at least one driving device, which is drivably connected to vehicle drive unit and implantable devices for driving the device, wherein the implantation device includes at least one robotic arm, at least one vaccine strain absorbing portion and at least one transplant unit, which are connected to body cushioning seedlings, transplant unit is connected to the body, wherein the buffer portion so as to move to the transplanted seedlings seedlings located in section.						
18.	Robotic vehicle	US20080093131	2007-06-13	ENDEAVOR ROBOTIC INTERMEDIATE HOLDINGS IROBOT IROBOT DEFENSE HOLDINGS*	99 %	
A robotic vehicle (10) includes a chassis (20) supported on right and left driven tracks (34,44), right and left elongated flippers (50,60) disposed on corresponding sides of the chassis (20), and a battery unit holder (210) disposed on the chassis (20) for removably receiving a battery unit (92,300) weighing at least 50 lbs. The battery unit holder (210) includes a guide (222,224) for receiving and guiding the battery unit (92,300) to a connected position and a connector mount (230) having locating features (232,234) and communication features (236). The locating features (232,234) receive corresponding locating features (332,334) of the battery unit (92,300), as the battery unit (92,300) is moved to its connected position, to align the communication features (236) of the connector mount (230) with corresponding communication features of the battery unit (92,300). The communication features (236) of the connector mount (230) are movable in a plane transverse to the guide to aid alignment of the communication features (236) for establishment of an electrical connection therebetween when the battery unit (92,300) is in its connected position.						
19.	Dynamic biplane roentgen stereophotogrammetric analysis	WO2010044844	2009-10-13	PAPAIOANNOU GEORGE	99 %	
A medical imaging system comprising an x-ray image detector mounted on a robotic arm and an x-ray generator mounted opposite the x-ray image detector. The robotic arm includes two pivots and a plurality of telescoping segments to adjust the height and angle of the x-ray image detector. In some embodiments, the medical imaging system includes a second x-ray image detector and a second x-ray generator and is capable of capturing biplane stereophotogrammetric images.						
20.	Robotic system and methods of use	US20110240383	2010-04-06	LUO BAI SCIENTIFIC & TECHNICAL ROBOTEX ROBOTEX*	99 %	
A robotic system that can have a body and four flippers is described. Any or all of the flippers can be rotated. The flippers can have self-cleaning tracks. The tracks can be driven or passive. The robotic system can be controlled by, and send audio and/or video to and/or from, a remote operator control module. The methods of using and making the robotic system are also described.						
21.	Robotic mobile low-profile transport vehicle	WO2012125903	2012-03-16	RAYTHEON*	99 %	
A robotic mobile low-profile transport vehicle (10) is disclosed. The vehicle can comprise a first transport module (14) having a frame assembly (18), a mobility system (20) and a propulsion system and a second transport module (16) having a frame assembly and a mobility system. A multi-degree of freedom coupling assemblage (84) can join the first and second transport modules together. The vehicle can include a first platform (70) supported about the frame assembly of the first transport module, and a second platform (71) supported about the frame assembly of the second transport module. Each of the platforms can be configured to receive a load for transport. Additionally, the vehicle can include a control system that can operate to facilitate intra-module communication and coordination to provide a coordinated operating mode of the first and second transport modules and the coupling assemblage about a given terrain.						
22.	Electric high-voltage transmission and a metering device	CN208207048	2018-05-02	TAIBO HUANAN GLASS*	99 %	
The present utility model discloses a high-voltage power transmission and a measuring device, comprising a lightning rod, a support post, 1st mechanical arm, and a wireless signal transceiver module top plate, a support post bottom end provided with a mount, support posts are mounted to both sides of the stationary base, and a fixed base robotic arm is hinged at the top of the 1st both, 1st 2nd mechanical arms are hinge jointed with top end of the robot arm, both sides of the solar panels are mounted to the top end cap, and the output of the solar panel is electrically connected to the input of the storage battery through the photovoltaic controller, the output of the ammeter is electrically connected to the input of the single-chip microcomputer through wire, wire of the single chip wireless transceiver module through an input to the output terminal is electrically connected, through an output of the single chip is electrically connected to the input of the hydraulic telescopic rod wire. The present utility model is mounted through a lightning rod, so that this device has the function of the anti-lightning strike.						

23.	Smart protection system based on submarine cable	CN108736371	2018-06-13	Tongxiangbao	99 %	
The invention discloses a smart protection system based on a submarine cable. An underwater mobile platform comprises a shell, a drive motor, a propeller, a submarine cable expansion channel and a positioning device; a storage device comprises a robot storage bin, an underwater robot, a descending channel, a glue storage bin, a heating layer and a cable storage bin; a protection device comprises amechanical cutting arm, a mechanical spraying arm, a spraying conduit, a connection mechanism, a cable embedding machine and an embedding mechanism; a separation device comprises a separation channel, a separation hydraulic pump, a separation hydraulic rod, a separation protection plate, a separation groove and a separation waterproof layer; a drainage device comprises a drainage storage bin, a suction pipeline and drainage equipment; a closing device comprises a robot closing motor, a robot closing plate, a lifting closing motor and a lifting closing plate; a recognition device comprises a cable fault detector, a first camera and a second camera; and a wireless device is arranged in a control center; and the control center is arranged in the shell.						
24.	Airport luggage transport vehicle and an unmanned ground crews business model	CN109131925	2018-07-25	YUNNAN ZHONGSHANG ZHENGXIAO AGRICULTURAL TECHNOLOGY*	99 %	
The present invention specifically discloses an unmanned transport vehicles and aircraft ground crews baggage shared system, an unmanned airport luggage transport vehicle includes at least a truck chassis and the ground crews vehicle body, the body is provided for storage of luggage racks, the elevating motor control module disposed shelf in a shelf, a shelf height monitoring module, control module and a shelf elevating motor is electrically connected with the main processor to monitor the shelf height, for identifying the master processor is further connected to a camera module of a visual ticket information; take unloading of the vehicle body is provided with automatic baggage loading and robotic arm, the master processor is connected to the robot arm; a drive module for driving an automatic traveling vehicle chassis is provided, the route guidance module, the obstacle avoidance module and a communication module and a data processing module; the present invention dynamic data link surrounding the cargo with the treatment stream through a moving end and a complementary motor vehicle between an unmanned vehicle allocation, replaces the inefficient distribution point cloud algorithms used to stream, accelerating the stream velocity, the cost is reduced.						
25.	Waterproof spraying machine people constructs with vision automatic tracking function	CN206844591	2017-04-06	PETER ROBOTICS*	99 %	
The utility model discloses a waterproof spraying machine people constructs with vision automatic tracking function, including the base, install the electric cabinet on the base, the internally mounted of electric cabinet has the battery, install the circuit board on the battery, install the singlechip on the circuit board, the memory is installed to one side of singlechip, the on-line screen storage device comprises a base, painting box is installed to one side of electric cabinet, the last high viscosity material delivery pump of installing of painting box, first motor is installed to one side of high viscosity material delivery pump, install first camera on the first motor, the high viscosity material delivery pump passes through the conveyer pipe and is connected with spraying plate, spraying plate installs on robotic arm, the last second motor of installing of robotic arm, install the second camera on the second motor, electric putter is installed to one side of base, the box iscollected to last the installing of electric putter, this spraying machine people, has vision automatic tracking function.						
26.	Multiple-degree-of-freedom anti-explosion mechanical arm	CN101797748	2010-01-08	WUHAN ROBOTELL*	99 %	
A multiple-degree-of-freedom anti-explosion mechanical arm relates to an anti-explosion mechanical arm. The anti-explosion mechanical arm comprises a six-degree-of-freedom joint component, a double-camera system, a distributed control system and an expansion system, wherein a front paw can be operated flexibly and diversely through the cooperative control of six joints; the double-camera system is used to provide front vision for rear operating staff so that the mechanical arm can be conveniently controlled to complete special tasks, the double-camera system comprises a main camera fixed on a front arm and a front-end camera fixed on a paw joint; the main camera has broad vision, the focus of the front-end camera is fine; the distributed control system is used to control the synergy movement of the six-degree-of-freedom component and various movements of the six-degree-of-freedom component, the distributed control system comprises a distributed control module, a magnetic absolute position sensing system and the like; and the expansion system is used to add different functions to meet different demands and increase the application range of the mechanical arm.						
27.	Novel marine chasing device	CN208273920	2018-03-13	DALIAN MARITIME UNIVERSITY*	99 %	
The present utility model provides a novel marine chasing apparatus, comprising: a base nets, the elevating structure, the support frame, hermetic chamber, the four suspension blocks, camera, light source, mechanical arms, propellers, and multi-axis motor control unit; hermetic chamber disposed in the middle of the supporting frame, hermetic chamber of a cylinder, a front end of a hemispherical structure, the rear end is a flat structure, a camera, and a control unit provided in the hermetic chamber within the multi-axis machine, a camera located in the hermetic chamber front end, a camera, a control unit connected respectively to the multi-axis motor; both sides of the four suspension blocks disposed in hermetic chamber, below the light source is fixed to the suspension block, the light source through a cable to the control unit is connected, the robotic arm is provided on the outside of the supporting frame, with the multi-axis robot arm connected to the motor, the impeller sealed chambers on both sides, between suspension block, the elevating structure arranged between the net and a support frame on the base plate. The present utility model turbidity phenomenon caused by movements due to the integral bottom waters is avoided, a camera lens to take a picture in a more fresh.						
28.	Intelligent modular robotic apparatus and methods	US20140019392	2013-03-14	QUALCOMM*	99 %	
Apparatus and methods for an extensible robotic device with artificial intelligence and receptive to training controls. In one implementation, a modular robotic system that allows a user to fully select the architecture and capability set of their robotic device is disclosed. The user may add/remove modules as their respective functions are required/obviated. In addition, the artificial intelligence is based on a neuronal network (e.g., spiking neural network), and a behavioral control structure that allows a user to train a robotic device in manner conceptually similar to the mode in which one goes about training a domesticated animal such as a dog or cat (e.g., a positive/negative feedback training paradigm) is used. The trainable behavior control structure is based on the artificial neural network, which simulates the neural/synaptic activity of the brain of a living organism.						
29.	Gel manipulation apparatus	WO200161307	2001-02-15	LARGE SCALE PROTEOMICS*	99 %	
An automated computer controlled apparatus (10) includes a robotic assembly (12) for capturing an electrophoresis gel (14) and transferring the gel to a sequence of treatment stages. The robotic assembly (12) has an articulated arm assembly for capturing a gel (14) and moving the gel to a selected work station. The gels (14) are supported by a carrier (106) having magnetically biased clamping jaws. The robotic arm assembly (12) is constructed to capture the carrier (106) to manipulate the gel. The gel (14) is suspended by the carrier (106) in a manner to prevent tearing and stretching of the gel. The gel treating stations have tanks (16) with surfaces to inhibit the gel from adhering to the walls of the tank. Typically, the surfaces of the walls have a plurality of channels formed by projections to allow the flow of liquid between the gel and the wall surface and reduce surface area of the wall contacting the gel. An agitating assembly (204) reciprocates the gel in the tank to agitate the treating liquid. In one embodiment, an agitating plate (374) moves in a reciprocating manner within the tank and is able to press the gel against a transparent wall of the tank at selected intervals so that an image of the gel can be captured at selected time intervals.						
30.	Robot gripping device	CN206568156	2017-03-03	QINGDAO HAO CHUAN ELECTRONIC TECHNOLOGY*	99 %	
The utility model discloses a robot gripping device, the left side bottom of grabbing device main part is equipped with the support column, the right side in motor drive storehouse is fixed with first arm, the right side of first arm is equipped with the second arm, the middle part on second arm top is equipped with vacuum pump connecting port, vacuum pump connecting port and vacuum pump fixed connection, second arm fixed surface has waterproof camera device, the right side of tongs connector is equipped with the tongs, the left side of tongs is equipped with the connecting piece, the below of connecting piece is equipped with the bottom plate that slides, it is equipped with the fly leaf to slide the bottom of bottom plate, the surface of fly leaf is equipped with the fixed plate, the right side of tongs is equipped with the vacuum tongs, the bottom of vacuum tongs is equipped with the absorption sucking disc, the top of adsorbing the sucking disc is fixed with the connecting pipe. Simple structure, convenient to use, the different environment of adaptation moreover.						

31.	Robotic sampler for remote sampling of liquids in a process stream	US6079285	1999-05-18	ARIES INDUSTRIES*	99 %
A robotic sampling device has a maneuverable, telescoping sample collector comprising a sample collecting arm and a propulsion module containing means for supporting and facilitating movement. Most preferably, the means for supporting and facilitating movement are wheels. The robotic sampling device also contains means for increasing traction for the propulsion module. The sampling device is remotely controlled. The sampling device contains at least one light source and a viewer that provides information for navigation and sample collection. The wheels of the propulsion module contain extendable pins which promote increased traction. The telescoping sample collector may also be rotated or tilted through a 180 degree arc relative to the axis of the pipe. The robotic sampling device also provides a means for collecting, labelling, and storing a sample, as well as cleaning the sample collector in preparation of another sampling event.					
					
32.	Portable underwater detection system	CN105539780	2014-10-31	SHAANXI GAOHUA ZHIBEN CHEMICAL SCIENCE & TECHNOLOGY*	99 %
The invention relates to a portable underwater detection system, and belongs to the field of detection apparatus. The portable underwater detection system is characterized by comprising a propeller, a main controller, a water leakage detection module, a water sample collection electromagnetic valve, a voltage conversion module, an interface converter, a waterproof mechanical arm, a sensor, a GPS navigation, a control terminal and a camera, wherein the propeller, the water leakage detection module and the interface converter are connected to the main controller, the voltage conversion module passes through the water sample collection electromagnetic valve and then is connected to the main controller, the waterproof mechanical arm, the control terminal and the sensor are connected to the interface converter, and the GPS navigation and the camera are connected to the control terminal. According to the present invention, the main control plate, the propeller drive, the waterproof mechanical arm, the water leakage detection, the power supply system and the data communication are used, the test results show that the system is stable, the work task can be completed in shallow water by matching with the master computer control terminal, and the reliable platform can be provided for the underwater experiments; and the portable underwater detection system has characteristics of simple structure, easy operation, and great promotional value.					
					
33.	Robot inspection apparatus having a camera for position confirmation	KR200476324	2014-01-10	PAVETEC*	99 %
This invention relates to a filter or other inspection object or structure IRWST robot position can be accurately identified in the movement of the foot can be corrected and positioning a camera for inspecting apparatus having a robot arm according to the invention. According to the present invention relates to a camera for positioning a robot having an inspection device, comprising a rectangular; having one end connected to the four corners of the body of the four articulated arm; at the other end of the arm on the foot of a square configuration; and the foot portions of each of two opposing sides of the bottom surface of the clamp; wherein, the arms extending outwardly from four corners of the body connected to the projecting plate, wherein the foot arm being rotatable> constructional feature.					
					
34.	Self-fixing mechanical arm used in extremely cold environment	CN108274447	2018-01-25	SHAANXI SCIENTIFIC TECHNOLOGY UNIVERSITY*	99 %
The invention discloses a self-fixing mechanical arm used in extremely cold environment, and belongs to the field of mechanical arms. The self-fixing mechanical arm used in the extremely cold environment comprises a fixed base with a mounting base, and the lower end of the fixed base is fixedly connected to a heat insulated box; the interior of the mounting base is fixedly connected to a mechanical arm control panel electrically connected to an auxiliary control panel and a storage card separately; the upper side of the fixed base is provided with a plurality of operating arms and a plurality of mechanical arm joints, and the operating arms are connected through the mechanical arm joints, wherein the lower end of one operating arm is rotatably connected to the fixed base; and the both sides of the mechanical arm joints are provided with fixing mechanisms, and each fixing mechanism comprises a waterproof cloth sleeve, a lower fixed block and an upper fixed block. According to the self-fixing mechanical arm used in the extremely cold environment, more stable work of the mechanical arm during cargo handling can be achieved; and the chattering phenomena of the mechanical arm joints are reduced, and the mechanical arm is protected so that cargoes are not liable to slide down.					
					
35.	Amphibious robotic device	US20080032571	2006-08-02	MCGILL UNIVERSITY*	99 %
A control system for a robotic device maneuverable in at least a liquid medium, the system having at least one visual sensor retrieving an image of the device's environment, an image analyzing module receiving the image, determining a presence of an object of a given type therein and analyzing at least one property of the object, a motion calculator determining a desired motion of the device based on the property, and a controller operating a propulsion system of the device to obtain the desired motion. Also, a legged robotic device having a control system including at least one sensor providing data about an environment of the device, the control system using sensor data to determine a desired motion of the device, determining a corresponding required leg motion of each of the legs to produce the desired motion and actuating the legs in accordance with the corresponding required leg motion.					
					
36.	A machinery couple for belt cleaning device	CN204588456	2015-04-17	XU YUXIAN	99 %
The utility model discloses a machinery couple for belt cleaning device, hang including machinery and hold mechanism, wire, pivot, arm, protective sheath, get in touch, prevent falling locking mechanism, camera, the arm includes arm and lower arm, it fixes in last arm upper end to hold the mechanism for mechanical string, the pivot welding is in last arm bottom, lower arm and pivot fixed connection, the protection ways lower arm with link up with, prevent falling locking mechanism and be equipped with fixed axle and locking accessory, and lock the accessory and fix on the fixed axle, the camera passes through the bolt fastening in the pivot. This machinery is geted in touch wear-resistingly, and anti high pressure can be carried under high temperature, acid alkaline condition for a long time and put the action of wasing the basket, and the machinery couple the empty phenomenon that perhaps arouses the basket can not appear hanging often when mentioning the handle of hand-basket moreover, has avoided the material to fall out from the hand-basket, breakes cleaning equipment's possibility, has improved production efficiency, has reduced manufacturing cost.					
					
37.	Machine for automatically harvesting fruits cultivated in rows	US20180153103	2016-12-01	AGROBOT* SOLUCIONES ROBOTICAS AGRICOLAS*	99 %
Machine (1) for the automatic harvesting of fruits cultivated in rows, formed by a self-propelled and autonomous vehicle encompassing at least one crop row (13), including a pair of parallel rails (2), a fruit collector assembly formed by a carriage (3) movably mounted on the pair of parallel rails (2) and a collector robotic arm (4) movably mounted on the carriage (3) for moving transversely with respect to the carriage (3), a carriage motor (5) for moving the carriage (3), and a robotic arm motor (6) for moving the robotic arm (4), the carriage and the robotic arm motors (5, 6) attached to the carriage (3). The carriage is movable horizontally and the robotic arm is transversally movable with respect to the rails.					
					
38.	Vehicle-mounted automatic charging mechanical arm and electric vehicle carried with same	CN105691229	2016-03-03	HARBIN INSTITUTE OF TECHNOLOGY* SHANGHAI INTERNATIONAL AUTOMOBILE CITY*	99 %
The invention relates to a vehicle-mounted automatic charging mechanical arm and an electric vehicle carried with the mechanical arm. The mechanical arm is arranged at the bottom of the electric vehicle, and automatic charging of the electric vehicle is achieved by plugging the mechanical arm into a socket automatically. The mechanical arm comprises a swing arm fixing plate, a first joint, a parallel joint unit, a plug and a camera, wherein one end of the swing arm fixing plate is fixed to the bottom of the electric vehicle; one end of the first joint is connected with the other end of the swing arm fixing plate; one end of the parallel joint unit is connected with the other end of the first joint; the parallel joint unit is parallel to a chassis of the vehicle when the electric vehicle is not charged, and is moved downwards when the electric vehicle needs to be charged; the plug is mounted at the tail end of the parallel joint unit; and the camera is mounted on one side face of the plug. Compared with the prior art, automatic charging is realized, a charging device is small in size, and using is convenient. The vehicle-mounted automatic charging mechanical arm fills up the blank in China and is of great significance on promoting the technological development of electric vehicles.					
					

39.	Amphibious robotic device	CA2555148	2006-08-02	MCGILL UNIVERSITY*	99 %	
A control system for a robotic device maneuverable in at least a liquid medium, the system having at least one visual sensor retrieving an image of the device's environment, an image analyzing module receiving the image, determining a presence of an object of a given type therein and analyzing at least one property of the object, a motion calculator determining a desired motion of the device based on the property, and a controller operating a propulsion system of the device to obtain the desired motion. Also, a legged robotic device having a control system including at least one sensor providing data about an environment of the device, the control system using sensor data to determine a desired motion of the device, determining a corresponding required leg motion of each of the legs to produce the desired motion and actuating the legs in accordance with the corresponding required leg motion.						
40.	Concealed intelligent protective system based on submarine cable	CN108649479	2018-06-13	Tongxiangbao	99 %	
The invention provides a concealed intelligent protective system based on a submarine cable. A telescopic device comprises a protection telescopic channel, a protection telescopic hydraulic pump, a protection telescopic hydraulic rod and a protection telescopic plate; a separation device comprises a separation channel, a separation hydraulic pump, a separation hydraulic rod, a separation protection plate, a resistance channel, a resistance hydraulic pump, a resistance hydraulic rod, a separation telescopic plate, a water-proof drive motor and a water-proof driving resistance plate; a repairing device comprises an underwater repairing robot, a cutting mechanical arm , a spraying mechanical arm , a repairing drive motor, a repairing resistance plate and a water-proof jointing mechanism; a storage device comprises a robot storage bin, a glue storage bin, a glue conduit and a heating layer; a drainage device comprises a first suction pipeline, a second suction pipeline, a first drainage appliance and a second drainage appliance; a recognition device comprises a first camera , a second camera , a third camera and a cable failure detector; a processing unit comprises a first processing unit and a second processing unit; and a wireless device is arranged in the second processing unit.						
41.	Underwater fishing robot	CN107585273	2017-08-08	WU FENGZHI	99 %	
The invention discloses an underwater fishing robot. A composite optical cable is mounted to a composite optical cable lead of the underwater robot and a host computer, and a lower computer is arranged in the underwater robot. The underwater robot comprises a gripper, a robotic arm , a storage basket, a caterpillar base plate, an upward-floating air bag, a high-pressure gas cylinder, an emergency buoy, the composite optical cable lead, a rotating platform, and a camera water shield. The robotic arm is connected to the rotating platform and gripper; the upward-floating air bag and the high-pressure gas cylinder are mounted to a bottom end of the rotating platform; and the emergency buoy and the composite optical cable lead are installed at a pedestal for supporting the rotating platform. The underwater fishing robot has multiple functions, such as underwater fishing and underwater monitoring, is flexible to move, good in practicality and mobility, and wide in application range. The underwater fishing robot can turn in situ when the underwater fishing robot turns to a carrier, and the underwater fishing robot rotates by using the rotating platform, is less affected by a water flow in an underwater environment, and is adapted to work in a narrow water area.						
42.	Modular underwater robot	CN108750045	2018-08-14	SHENZHEN QIANSHUIXIA INNOVATIVE IMPETUS TECHNOLOGY*	99 %	
The present invention relates to the field of underwater robotic technology, in particular to a modular underwater robots, provided with an electric reel and a floating ball inside of the repeater signal; data cable penetrating into the electric wire is wound on the inner rear floating ball wheel; data cables extend into one end of the floating ball in fluid communication with the signal repeaters; power supply module, subsea mechanical arm set, the main control module and the advancing mechanism are both on the traveling mechanism on the; waterproof hermetic chamber disposed in the interior of the boot; all-around image-capturing device is fixed on the protective cover; the bottom of the boot is fixed to the undercarriage; propulsion mechanism is mounted on the outside of the hermetic chamber waterproof ; propulsion mechanism is disposed on the inside of the boot. The present invention when in use, this structure of the underwater robots, deep-sea exploration means of enriching a human being, the difficulty of reducing human exploration sea area, and each of the modular structure, it is possible to freely combine the purpose of use according to the individual modules are used, more flexible use.						
43.	Take antiwind unmanned ship of laser cutting function	CN207045628	2017-05-24	DAPENG HI TECHNOLOGY INTELLIGENT EQUIPMENT*	99 %	
The utility model relates to an unmanned ship technical field, concretely relates to take antiwind unmanned ship of laser cutting function. This unmanned ship includes: hull, control system, power component, positioner, communication device, cutting assembly and determine module, control system setting in the hull, control system is commander's maincenter of unmanned ship, power component, positioner, communication device, cutting assembly and determine module are connected with control system respectively, cutting assembly constitute by laser head and arm , the laser head is installed on the arm top, the arm bottom is passed through the arc guide rail and is installed inside the hull, determine module include waterproof camera and thermal imaging system, determine module installs at telescopic arm end part, the other end of flexible arm is installed in the hull. This unmanned ship passes through determine module and detects the winding position, and control cutting assembly cut the twister, and is effectual when having solved the unmanned ship power component winding, unable rescue by oneself, problem that the influence was travel.						
44.	Underwater working robot	CN103303449	2013-05-30	CHINA NUCLEAR POWER TECHNOLOGY RESEARCH INSTITUTE* HEBEI UNIVERSITY OF TECHNOLOGY*	99 %	
The invention discloses an underwater working robot which is characterized by mainly comprising a vehicle body module, a manipulator module or/and an underwater camera module, a functional component module and a control module, wherein the modules are completely isolated mechanically and electrically; the vehicle body module mainly comprises a six-wheel and six-drive sealing vehicle body, a vehicle body direct current servo motor, a vehicle body motor driver, a vehicle body underwater ultrasonic sensor, a vehicle body temperature pressure sensor, an underwater lighting lamp, a vehicle body waterproof plug, a vehicle body inflating valve and a vehicle body anti-radiation lead plate; the manipulator module mainly comprises a base, a waist part, a large arm , a small arm and a tail end executor; the base, the waist part, the large arm and the small arm are connected with one another through hollow joints; air is filled into a manipulator, and wires are arranged in the manipulator; the underwater camera module mainly comprises an underwater camera , an underwater camera lighting lamp and a bidimensional tripod; the functional component module mainly comprises a storage box, an underwater dust remover and an underwater cutter; and the control module mainly comprises a main control console and a hand-control box.						
45.	Method and system for cleaning glass surface of pavement light or reflector	WO2005047606	2003-11-13	SANKI ENGINEERING*	99 %	
A method and a system for cleaning the glass surface of an object, such as a surface light, an runway guidelight, or a reflector, installed on various pavements or roads, by propelling a cleaning agent from a blast nozzle to the glass surface. The blast nozzle is installed on the front end of an arm of a working robot mounted on a truck. A truck mounted with a cleaning agent blaster and a working robot (21) provided with a blast nozzle (23) and a CCD camera (24) at the forward end of a manipulator is stopped at a specified position in the vicinity of an object to be cleaned, i.e. surface light or a reflection mirror (30). Based on an image of the object taken by the CCD camera (24), dimensions are recognized from distance information through processing by a vehicle-mounted computer, the image shape of the object is collated with a stored shape and recognized, and then positional information of the recognized object is searched. Cleaning agent is propelled from the blast nozzle (23) at the forward end of the manipulator (22) toward the object while measuring the extent of cleaning, brightness or light intensity of the cleaned object is determined by the CCD camera , and automatic cleaning is performed.						
46.	Robotic mobile low-profile transport vehicle	US20140246257	2014-02-24	SARCOS*	99 %	
A robotic mobile low-profile transport vehicle is disclosed. The vehicle can comprise a first transport module having a frame assembly, a mobility system, and a propulsion system and a second transport module having a frame assembly and a mobility system. A multi-degree of freedom coupling assemblage can join the first and second transport modules together. The vehicle can include a first platform supported about the frame assembly of the first transport module, and a second platform supported about the frame assembly of the second transport module. Each of the platforms can be configured to receive a load for transport. Additionally, the vehicle can include a control system that can operate to facilitate intra-module communication and coordination to provide a coordinated operating mode of the first and second transport modules and the coupling assemblage about a given terrain.						
47.	Folding automatic charging mechanical arm and electric vehicle carried with same	CN105691228	2016-03-03	HARBIN INSTITUTE OF TECHNOLOGY* SHANGHAI INTERNATIONAL AUTOMOBILE CITY*	99 %	
The invention relates to a folding automatic charging mechanical arm and an electric vehicle vehicleried with the mechanical arm . The mechanical arm is arranged at the bottom of the electric vehicle, and charging of the electric vehicle is achieved by plugging the mechanical arm into a socket. The mechanical arm comprises a swing arm fixing plate, a head joint, a connection plate, a parallel joint unit, a plug and a camera , wherein one end of the swing arm fixing plate is fixed to the bottom of the electric vehicle; one end of the head joint is connected with the other end of the swing arm fixing plate so that the mechanical arm can rotate around the head joint; the connection plate is an inverted U-shaped strip slot, and is connected with the head joint; the parallel joint unit is connected with the connection plate in a sliding mode; the parallel joint unit is located in the connection plate when the electric vehicle is not charged, and extends out of the connection plate and rotates around parallel joints when the electric vehicle needs to be charged; the plug is mounted at the tail end of the parallel joint unit; and the camera is mounted on one side face of the plug. Compared with the prior art, automatic charging is realized, a charging device is small in size, and using is convenient. The vehicle-mounted automatic charging mechanical arm fills up the blank in China and is of great significance on promoting the technological development of electric vehicles.						

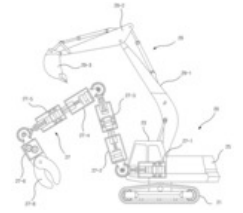
48.	Robotic phonton and automatic rubbish screening system, to clean up rubbishes floating into and out of waters zone	WO2009066272	2008-09-11	POULAC SIDIAK*	99 %
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The Latest Technology on Waters Zone Rubbish Cleaner according to this invention is using **robotic** phonton of catamaran type that will carry all automatic rubbish screening equipment to freely move at sea, reservoir, lake, river mouths and other water zones. This phonton motorboat of catamaran type will become the driving media to create water flow that will pass through the screen bar already installed between the two sides of the phonton motorboat. This phonton motorboat is equipped with all maritime navigation equipment that enables it to move forward as well as backward under speed between 1 knot up to 15 knots. Furthermore, it will cause rubbishes floating on the surface as well as under the waters zone collided, stuck, trapped or caught on the screen bar. The rubbishes stuck on the screen bar will be carried into the conveyor using the rake from the moveable frame mounted on the rail track.



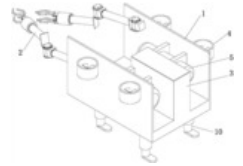
49.	Manned underwater construction robot system	KR101802972	2016-06-29	INNER SPACE WON JUNG*	99 %
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The present invention relates to a manned underwater construction robot system, allowing a worker to get on and perform underwater work. According to the present invention, the system comprises: a manned underwater construction robot body including a driving body, an upper rotary body wherein a worker riding part, which is a **waterproof** structure, is mounted and rotated, and a multi-joint type multi-**arm** installed in the upper rotary body to be operated in accordance with operation of a rider; an active sonar mounted on the robot body to forwardly eject an ultrasound wave and detecting a returned reflective wave to acquire a three-dimensional (3D) image of an external topology; an underwater **camera** mounted on the robot body to photograph a front image; a control unit extracting features from the 3D image of the external topology and the image photographed by the underwater **camera** to match 3D external topologic data with coordinates of the photographed image; and a display device to simultaneously output the photographed image and an external topology grid image representing the 3D external topologic data in a grid type on a screen.



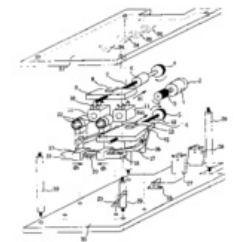
50.	Open-frame all-around sea cucumber catching robot	CN107897137	2017-11-24	HARBIN INSTITUTE OF TECHNOLOGY*	99 %
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The invention discloses an open-frame all-around sea cucumber catching robot, relates to a robot, and aims at solving the problem that it is difficult to manually catch sea cucumbers underwater. The open-frame all-around sea cucumber catching robot includes a frame, mechanical arms, a collection box, a propelling mechanism and two watertight balance chambers; the collection box, the propelling mechanism, a **camera** and the watertight balance chambers are arranged on the frame, wherein the propelling mechanism is used for adjusting the posture of the robot, and the **camera** is used for capturing the sea cucumbers; the collection box is arranged between the two watertight balance chambers, the **camera** is arranged in front of the collection box, and a mechanical **arm** control module is arranged in any of the watertight balance chambers; the collection box includes a control cabin and a sea-cucumber storage chamber which are separated; the flexible mechanical **arm** and the rigid mechanical **arm** are mounted on the frame; a door control module receives signals of an auto-door sensor to control an auto-door to automatically open or close, and after receiving signals of the **camera**, the mechanical **arm** control module controls the rigid mechanical **arm** to remove obstacles, controls the propelling mechanism to advance and adjust the posture of the robot and controls the flexible mechanical **arm** to grab and transport the sea cucumbers. The open-frame all-around sea cucumber catching robot is applied to shallow-water operation of sea cucumber catching.



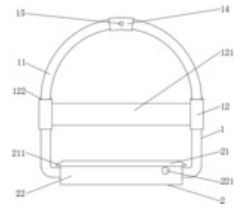
51.	Single-canister underwater stereocamera system with distance measurement function	KR20020018331	2000-09-01	KOREAN INSTITUTE OF OCEAN SCIENCE & TECHNOLOGY*	99 %
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A single-canister underwater stereocamera system with a distance measurement function is disclosed. In the **camera** system, a **camera** drive unit, holding two cameras on its **camera** base, is set in a parallel space defined between two support plates, and is operable by a motor unit, thus being movable along with the two cameras to the front or back. A lens drive unit, holding two lenses on two lens bases, is set in the parallel space to be operable by the motor unit so as to laterally move the two lenses to the left or right under the guide of a linear guide bearing. The motor unit controls the focus length of each of the two cameras and the moving distance of the two lenses at the same time. In the **camera** system, the actual distance of an underwater target object from the system is measured by sensing a rotated position of the encoder of the motor unit, taking advantage of the fact that the actual distance of the target object has a functional relation of 1:1 with the focus length of each of the cameras. This **camera** system measures the actual distance of the target object while compensating for the refraction errors of light beams passing through both the window and water. The **camera** system is also encased within a **waterproof** and pressure-proof cylindrical canister having a transparent window at its front end wall. This **camera** system is thus effectively usable in deep sea.



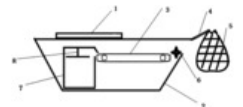
52.	Automobile anti-theft personal vehicle-level bit	CN109025444	2018-08-09	GUANGZHOU HUAXIA VOCATIONAL COLLEGE*	99 %
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The present invention discloses a car security personal vehicle-level bit, includes a working **arm** and the box body, the **arm** includes a rod, bar both sides of the sheathed with a sleeve, two side bars respectively provided with a placing groove inside, one side of the placing groove is provided inside the battery, another slot disposed on one side is provided inside the trays, the protective sleeve is sleeved outside the top bars, top bars is provided with a lumen passage, channel top equipped with the **camera**, the **camera** through the battery and the stock trays are electrically connected respectively to the wire, rod extends from the bottom to the box body interior, and is provided with a slot extending end, the cartridge includes a box cover and the capsule nest, connection with the box cover. Through the present invention is provided with a passageway in the bar top cavity equipped with the **camera**, by using a **camera** of the **robotic** grasping flap Fig. function, care vehicle to prevent vehicle theft, through providing the circuit board, space-lock is remotely opened to, and has an alarm function.



53.	Ship is retrieved to ocean rubbish based on image acquisition	CN204688371	2015-06-23	DIAO SHUNING	99 %
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The utility model discloses a ship is retrieved to ocean rubbish based on image acquisition, including the string bag, the **arm**, the sword is smashed in the cutting, the conveyor belt, the rubbish compression chamber, the compression piston, the **camera**, treater and motor, the **arm** is installed in hull deck department, go up and down in the switching and the position of the **arm** control string bag, the string bag is installed and is held in the **arm**, collect rubbish, the **camera** is installed in hull deck department, the cutting is smashed the sword and is installed the one side that gets into the hull in rubbish, the cutting is smashed the sword next door and is installed the conveyor belt, the rubbish compression chamber is installed to the conveyor belt opposite side, the image information that the **camera** was gathered gets into the treater and handles, when the rubbish size exceeds the size numerical value of setting for, the sword motion is smashed in the motor drive cutting, carry out shredding to rubbish, rubbish after smashing is transported in the rubbish compression chamber through the conveyor belt, do not have and exceed the direct conveyor belt entering rubbish compression chamber the inside of passing through of the rubbish of setting for the size, the compression piston is handled the rubbish compress who gets into the rubbish compression chamber.



54.	Underground space autonomous positioning multi-sensor intelligent detection robot	CN107389125	2017-07-07	CHINA NONFERROUS METAL SURVEY & DESIGN INSTITUTE OF CHANGSHA*	99 %
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The invention relates to an underground space autonomous positioning multi-sensor intelligent detection robot. The detection robot includes a robot carrier platform, a cable rolling wheel, a main control box, a rear **camera** which is arranged on the carrier platform, a robot **arm**, an instrument cabin, a sampling basket, a battery pack, a front **camera** and the like; the robot carrier platform and the main control box are connected through a power supply and communication cable for realizing a power supply function and a communication function; the detection data of the instrument cabin are transmitted to the main control box through the power supply and communication cable; a main cable rolling wheel provides mileage information in real time; and a uniaxial fiber optic gyroscope, a biaxial inclinometer and a triaxial accelerometer which are mounted on the robot carrier platform, together with the mileage information provided by the main cable rolling wheel, realize the autonomous positioning of the robot. The detection robot can go to underground space to detect such properties as the location, spatial information and living environment of the underground space and can obtain the 3D model of underground space; and the robot is adaptive to complex road conditions and has a certain **waterproof** function.

