

1/37 © EPODOC / EPO

PN - [CN207261969U](#) U 20180420

PR - CN20172851966U 20170713

AP - CN20172851966U 20170713

DT - I

PA - HUZHOU POWER SUPPLY CO OF
STATE GRID ZHEJIANG ELECTRIC
POWER CO; STATE GRID CORP
CHINA

TI - **Support** frame is shielded with
display more in
transformer **substation**

AB - The utility model discloses
a **support** frame is shielded with
display more in
transformer **substation**, including
the base, establish bracing piece
and holding frame in base top,
the holding frame includes
clamping bush, link and mount,
the clamping bush slidable cover
is established in the bracing
piece side, the link connection
rotatable in brace strut axes's
plane in one side of clamping
bush, the mount passes through
the link with clamping bush and
links to each other, but the
wherein one end of bracing
piece is equipped with the
roomy ring in the cladding
bracing piece other end outside,
the upside of base is equipped
with the connection mount that
is used for the joint **support pole**.
The utility model discloses a
benefit is that the matrix that
can accomplish the display is
put, improves the space
utilization in the electricity
distribution room, realizes at the
current display that worker's
table prerequisite lower hem put
down as much as possible of
doing, the top of roomy ring seat
can guarantee as the holding
surface that the position of
holding frame is stable, ensure
that the bracing piece is vertical
state, connect simply reliably
that the **structure** is firm.

2/37 © EPODOC / EPO

PN - [CN207241734U](#) U 20180417

PR - CN201721323454U 20171013

AP - CN201721323454U 20171013

DT - I

PA - DAISHAN POWER SUPPLY
COMPANY STATE GRID ZHEJIANG
ELECTRIC POWER COMPANY; STATE
GRID CORP CHINA; ZHOUSHAN

ELECTRIC POWER SUPPLY CO OF
STATE GRID ZHEJIANG ELECTRIC
POWER CO

- TI - Transformer **substation's** fortune
wella **pole** instrument dolly of
three gyro wheel structures
- AB - The utility model provides a
transformer **substation's** fortune
wella **pole** instrument dolly of
three gyro wheel structures,
relates to transformer **substation**
fortune dimension field. At
present, it is far away that tool
room leaves the primary
equipment district when
normally stopping power
transmission operation, and the
operation tool is many, needs
transport many times, the extra
work load of the increase
operation personnel of team.
The utility model discloses a
bottom plate, vertical **support**,
storage tank, two sets of truckle,
handle, the middle part right
side of **support** is equipped with
the operation wallet, and the
upper portion right side
of **support** is equipped with the
operation ticket platform that
can overturn downwards, and the
upper portion left side of **support**
is equipped with insulator
spindle electroscope place the
platform, and every group truckle
is the three gyro wheel structures
at two liang of interior intervals
of upright plane 120 degrees,
and one of them gyro wheel is
connected in **support** lower part
right side, be equipped with the
collapsible bearing **structure** of
two connecting rods between the
below of operation ticket
platform and the **support** This
technical scheme realizes the
transport of multiple instrument
simultaneously and provides
many function processing the
platform, has reduced the work
load of carrying, has reduced
transport working strength,
makes fortune dimension fault
handling more convenient, has
shortened the processing time.

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- PN - [CN207200098U](#) U 20180406
- PR - CN201721319170U 20171013
- AP - CN201721319170U 20171013
- DT - I
- PA - DAISHAN POWER SUPPLY

COMPANY STATE GRID ZHEJIANG
ELECTRIC POWER COMPANY; STATE
GRID CORP CHINA; ZHOUSHAN
ELECTRIC POWER SUPPLY CO OF
STATE GRID ZHEJIANG ELECTRIC
POWER CO

- TI - Multi -functional
transformer **substation** fortune
wella **pole** instrument dolly
- AB - The utility model provides a
multi -functional
transformer **substation** fortune
wella **pole** instrument dolly,
relates to transformer **substation**
fortune dimension field. When
normally stopping power
transmission operation, the
operation tool is many, needs
transport many times. The utility
model discloses a bottom plate,
vertical **support**, storage tank, two
sets of truckle, handle, the
middle part right side of **support**
is equipped with the operation
wallet, and the upper portion
right side of **support** is equipped
with turns over board -like
operation ticket platform, and
the upper portion left
side of **support** is equipped with
the insulator spindle
electroscope place the platform
who is used for placing insulator
spindle and electroscope, and
every group truckle is single -
roller **structure**, every truckle fixed
connection of group in **support**
lower part right side, the **support**
right lateral position is
equipped with the box of placing
of operation ticket platform in
the below of operation ticket
platform, places and is equipped
with the limit **structure** who is
used for operating ticket
platform horizontal spacing
between the top AND operation
ticket platform of box. This
technical scheme has reduced
the work load of transport, has
reduced transport working
strength, makes fortune
dimension fault handling more
convenient, has shortened the
processing time, and the
multiplexer utensil is placed
more normally, and the hidden
danger that the in -process
damaged is carried, is placed to
the elimination instrument.

PN - [CN207098269U](#) U 20180313

PR - CN201721155393U 20170911

AP - CN201721155393U 20170911

DT - I

PA - SHANDONG SUNSHINE POWER
EQUIPMENT LTD COMPANY

TI - Novel outdoor **substation**

AB - The utility model belongs to the technical field of outdoor **substation**, especially, relate to a novel outdoor **substation**. Including base and the **pole** setting **support** of setting in four angles departments of base, be provided with supplementary **pole** setting **support** between the adjacent **pole** setting **support**, the top of **pole** setting **support** and supplementary **pole** setting **support** is provided with topgroove steel bracket, be provided with the glass fiber reinforced cement board on **pole** setting **support**, supplementary **pole** setting **support** and the top groove steel bracket, the **pole** setting **support** includes parallel arrangement's preceding angle iron frame and back angle iron frame, be provided with the connecting plate between preceding angle iron frame and the back angle iron frame, the connecting plate sets up in the front angle iron frame and back angle iron frame's right angle department, supplementary **pole** setting **support** includes parallel arrangement's preceding grip block and back gripblock, be provided with triangular connecting rack between preceding grip block and the back grip block, glass fiber reinforced cement board, **pole** setting **support** and supplementary **pole** setting **support** are provided with real mineral varnish layer outward. The utility model discloses simple **structure**, processing make things convenient for, are fit for to use widely on a large scale.

AP - CN201721038272U 20170818

DT - I

PA - STATE GRID SHANGHAI MUNICIPAL
ELECTRIC POWER CO; STATE GRID
SHANGHAI ELECTRIC POWER
DESIGN CO LTD

TI - A cable **structure** for 500kV lays
underground **substation**

AB - The utility model relates to a
cable **structure** for 500kV lays
underground **substation**,
this **structure** includes cable
component that the cable of
being arranged by many
quadratures constitutes, set up
the mounting between many
cables and set up the cable seat
on surface about cable
component, cable seat set up on
the horizontal **pole** of
cable **support** to bind through the
ribbon. Compared with the prior
art, the utility model has the
advantages of the abrasionproof
decreases, the installation is
firm.

6/37 © EPODOC / EPO

PN - [CN206716538U](#) U 20171208

PR - CN2017234016U 20170112

AP - CN2017234016U 20170112

DT - I

PA - SHENZHEN POWER SUPPLY
BUREAU; SHANDONG LUNENG
INTELLIGENCE TECHNOLOGY CO LTD

TI - Which comprises a worktable,

AB - The utility model discloses a
which comprises a worktable,
cleans the executive module and
includes: the fastening that fix
hydraulic motor on the
workstation, the transmission
hose that links to each other
with hydraulic motor, links to
each other with the transmission
hose on the grip block the major
insulation **pole** and be connected
the sweeping brush on the major
insulation **pole**, sweeping
brush's rotational speed is
adjustable, wherein: hydraulic
motor rotation synchronization
drives the transmission hose
and the major insulation **pole** is
rotatory, makes sweeping brush
rotate and cleans, and last being
equipped with of sweeping
brush is used for carrying out the
spacing pad of spacing **support** to
sweeping brush's rotation. The
utility model discloses a which

comprises a worktable, further promotes degree of automation and cleans efficiency, and the reduction personnel get into the probability in **substation** equipment district, ensures operator person's safety, eliminates the potential safety hazard, the **structure** is retrencied, the assembly of being convenient for, maintenance and maintenance.

7/37 © EPODOC / EPO

- PN - [CN206323108U](#) U 20170711
- PR - CN201621314525U 20161202
- AP - CN201621314525U 20161202
- DT - I
- PA - STATE GRID HENAN SONGXIAN POWER SUPPLY COMPANY; STATE GRID CORP CHINA
- TI - Artificial deicing instrument of transformer **substation**
- AB - The utility model discloses an artificial deicing instrument of transformer **substation**, it includes extendible insulating **pole** and deicing shovel, extendible insulating **pole** is last to install waterproof full skirt, deicing shovel comprises handle and spiller, be connected through grafting or screw thread or joint mode between handle and the spiller, end screw thread connection is at the extendible insulating **pole** top under the handle, the downwarping of spiller front end, the spiller surface is provided with the even parallel bead in interval that a plurality of was arranged along spiller width direction, spiller front end edge is the cockscomb **structure**, the anterior both ends of spiller have outside ARC bending and extend the coupler body that forms, or the outside cylinder that forms that extends, it is wide trapezoidal before narrow that the spiller is crescent or back. The utility model discloses be suitable for the various ice sheets of clearance, can effectively get rid of icicle between the insulator, not influenced by cluster parachute interval size, eliminate snow and icing on vase, **support** wire and the shaft tower.

8/37 © EPODOC / EPO

PN - [CN206313413U](#) U 20170707
PR - CN20172019582U 20170109
AP - CN20172019582U 20170109
DT - I
PA - SECOND CONSTR ENG CO LTD
TI - Hoist and mount type
cable **support**
AB - The utility model relates to a
defeated **substation** equipment
technical field discloses a hoist
and mount type cable **support**
The utility model discloses a
cable couple in jib one end is
established with the cover to the
jib of fixing on the
major **structure**, mounting and the
adjusting nut on the
horizontal **pole** is established
including the horizontal **pole**, the
cover that pass major **structure**
split bolt hole to the jib, and
mounting and adjusting nut are
located the both sides of
major **structure** respectively, cable
couple lies in the horizontal **pole**
in the mounting outside, and (32)
are tied up with the U type that
sets up perpendicularly on L type
angle steel to the L type angle
steel that the cable couple was
fixed on the jib including the
level, L type angle steel and
horizontal **pole** welded fastening,
and L type angle steel notch is
downward, and one side steel
sheet level sets up, and the U
type is tied up first can the
dismantlement with the
horizontal curb plate of L type
angle steel in both ends of piece
and is connected. The utility
model discloses with low costs,
simple **structure**, the installation
of being convenient for are
dismantled, can not caused the
major **structure** and destroy, on -
the -spot turnover rate is high.

9/37 © EPODOC / EPO

PN - [CN205734825U](#) U 20161130
PR - CN20162528054U 20160602
AP - CN20162528054U 20160602
DT - I
PA - LAIWU POWER SUPPLY CO STATE
GRID SHANDONG ELECTRIC POWER
CO LTD; STATE GRID CORP CHINA
TI - Vehicular movement safety
multiplexer utensil stororage
device

AB - The utility model relates to a tool the cabinet is specifically said so one kind and is used the vehicular movement safety multiplexer utensil storage device that have protection against the tide, winter protection, loss prevention function of motor vehicles as transport means. Including the cabinet body, hinge the cabinet door on the cabinet body, be provided with the dead lever, the breathing mask shelf that are used for the fixed insulation **pole** in the inner chamber of the cabinet body, test electric appliance **support**, the dead lever level is provided, has the hasp on the dead lever, the lower extreme in the internal chamber of cabinet is provided with battery and electric heater, the higher authority of electric heater is provided with the operating handle shelf. Its compact **structure** has low temperature, moisture proofing, the convenient characteristics of maintenance of preventing, can satisfy the requirement of depositing and using of unattended **substation** to safety tool along with vehicle movement.

10/37 © EPODOC / EPO

PN - [CN205663283U](#) U 20161026

PR - CN20162487323U 20160526

AP - CN20162487323U 20160526

DT - I

PA - CHINA ENERGY CONSTRUCTION GROUP XINJIANG ELECTRIC POWER DESIGN INST CO LTD

TI - Prevent wind sandbox transformer **substation** concrete to construct cradling piece

AB - The utility model discloses a prevent wind sandbox transformer **substation** concrete to construct cradling piece, including framework body and **support** body, the framework body is at the thick galvanized steel sheet of 4.5 overhead BRAT within ranges parcel 1.5mm, the thick galvanized steel sheet of **support** body total length parcel 1.5mm, the utility model has the advantages of: can block effectively that the sand blown by the wind corrodes the **structure**

cradling piece, guarantee the normal use and the durability of constructing the **support** in the transformer **substation**, the way of standing entirely is unified, satisfying under the unified prerequisite of outward appearance, has reduced the katogene of sand blown by the wind to the concrete **pole**.

11/37 © EPODOC / EPO

- PN - [CN205534881U](#) U 20160831
- PR - CN2016272398U 20160121
- AP - CN2016272398U 20160121
- DT - I
- PA - HARBIN YINYISHICE TECH CO LTD
- TI - Swing arm device of infrared control of transformer **substation**
- AB - The utility model relates to a swing arm device of infrared control of transformer **substation**, including base and the sliding bracket of setting on the base, the base includes two parallel arrangement's spout, be equipped with a slide bar in the spout respectively, slide bar and spout looks parallel arrangement, sliding bracket include with slide bar sliding fit's slider and with slider fixed connection's installation **pole**, the tip of installation **pole** is equipped with a triangle - shaped installing **support**, be equipped with the mounting hole with monitoring device fixed connection on the installing **support**, the both ends of base are equipped with respectively along the perpendicular outside connecting plate that extends of its width, be equipped with the bolt fastening hole on the connecting plate. The utility model discloses simple **structure**, simple to operate has avoided power equipment owing to shelter from the unable control condition emergence that leads to.

12/37 © EPODOC / EPO

- PN - [CN205407067U](#) U 20160727
- PR - CN20162209503U 20160318
- AP - CN20162209503U 20160318
- DT - I
- PA - NANYANG CITY XINTE ELECTRIC CO LTD

- TI - Intelligent high -pressure automatic compensation power distribution station
- AB - The utility model discloses an intelligent high -pressure automatic compensation power distribution station, which comprises a bracket, the transformer body of setting on the horizontal **pole of support** middle part with the distribution module in the horizontal **pole** below hangs, transformer body left side is the low voltage output side, transformer body right side is high -pressure inlet side, transformer body right side sets up high -pressure automatic compensation unit, high pressure automatic compensation unit is reactive power compensator, it transfers appearance switch and the on - load voltage regulating switch accent of carrying that has as an organic whole to hold pressure regulating tapping switch to be provided with on the transformer body to carry, the distribution module includes the distribution unit, the low -pressure measurement unit, low pressure reactive compensation unit, wireless four distant units and environment monitor cell, environment monitor cell includes sensor and display device, an environmental parameter handles the analysis and shows the easy access personnel and looks over for inciting somebody to action around the transformer **substation**. The utility model discloses can not only satisfy intellectuality, automation, the information - based demand of electric wire netting, simple **structure**, function are retrencied moreover, have controlled the cost so that popularize and apply.

13/37 © EPODOC / EPO

- PN - [CN205385211U](#) U 20160713
- PR - CN20152890509U 20151110
- AP - CN20152890509U 20151110
- DT - I
- PA - CHONGQING HUAWANLUN
ELECTRICAL APPLIANCE CO LTD
- TI - Box -type **substation** aluminum casing

AB - The utility model belongs to the technical field of protective housing and a box - type **substation** aluminum casing is disclosed, including box, backup pad, water muddy bottom seat, **support** column, ladder, chamber door, **support** horizontal **pole**, apron, signal transmitter, camera and protective frame, the box top is equipped with the apron and sets up the signal transmitter on the apron, the apron bottom is equipped with power supply module and sets up the camera in the power supply module bottom, the bottom half is equipped with the backup pad and sets up the water muddy bottom seat in the backup pad bottom, box inside is equipped with protective frame and sets up places the position at the inside transformer case of protective frame, the box with apron handing -over department is equipped with to be supported the horizontal **pole** and sets up at the **support** column that supports horizontal **pole** bottom intermediate position, and this shell is made by the aluminium material, and this box -type **substation** aluminum casing, reasonable in design, simple **structure**, protecting effect are well and long service life.

14/37 © EPODOC / EPO

PN - [CN205242189U](#) U 20160518
 PR - CN20152953213U 20151126
 AP - CN20152953213U 20151126
 DT - I
 PA - STATE GRID CORP CHINA; STATE GRID JILINSHENG ELECTRIC POWER SUPPLY COMPANY BAISHAN POWER SUPPLY COMPANY
 TI - Built on stilts cable of robot walking is patrolled and examined to transformer **substation's** intelligence
 AB - The utility model relates to a power line patrols and examines intelligent device, a built on stilts cable of robot walking is patrolled and examined to transformer **substation's** intelligence promptly. Including hang going a cable, hang and go the cable by the unsettled

connection of a plurality of supports shaft tower, hang and go the cable next door and be equipped with the bypass flexibility cable of passing a bridge supporting shaft tower department, hang and go a cable and adopt GJ50 steel hinge ground wire or LGJ90 steel core aluminium hinge line, **support** shaft tower adoption cast tower and ground wire strain insulator cross arm **structure**. The cable is passed a bridge including middle and the fixed horizontal round bar of T type of shaft tower to the flexibility, and the articulated round bar of multistage is connected at T type horizontal **pole** both ends, articulated round bar with hang a line cable and be connected. The effectively scope of patrolling and examining that has determined the robot is arranged to the cable. Set up the bypass flexibility cable of passing a bridge in cable and shaft tower combination department, guaranteed that the robot is accessible to go that rational in infrastructure, the walking transform is nimble.

15/37 © EPODOC / EPO

- PN - [CN205178281U](#) U 20160420
- PR - CN20152958134U 20151127
- AP - CN20152958134U 20151127
- DT - I
- PA - HENAN ANKAO ELECTRIC POWER
ENG DESIGN CO LTD
- TI - Box -type **substation's** wiring
stable **structure**
- AB - The utility model belongs to the
technical field of the power
equipment technique and
specifically relates to a box -
type **substation's** wiring
stable **structure**, including fixed
baseplate and cable, the nearly
left end fixedly connected with
box -type **substation** of the fixed
baseplate upper surface end of
work a telephone switchboard,
the adjustment tank has been
offered to the nearly right -hand
member of fixed baseplate
upper surface, and the
adjustment tank right -hand
member has the opening, and
the lift groove has been offered
to the interior bottom surface of

adjustment tank, has offered the slip spacing groove on the adjustment tank inside wall. The utility model discloses a box - type **substation's** wiring stable **structure** is through setting up the adjustment tank of conveniently adjusting the horizontal and lengthwise position of stabilizing **support** on fixed baseplate for installation of cable is more convenient, is suitable for the various sizes cable, promotes stability, connects drum fastener and stabilizing **support** through the joint **supportpole** moreover, promotes the stability and the security of crooked end cable greatly.

16/37 © EPODOC / EPO

- PN - [CN205153155U](#) U 20160413
- PR - CN20152989892U 20151203
- AP - CN20152989892U 20151203
- DT - I
- PA - ECONOMIC & TECH RES INST STATE GRID XINJIANG ELECTRIC POWER CO; STATE GRID CORP CHINA
- TI - Transformer **substation's** concrete annular **pole** framework herringbone post column cap node
- AB - The utility model relates to a transformer **substation's** concrete annular **pole** framework herringbone post column cap node, including the apron, seted up the centre bore at the apron center, be provided with a plurality of upper ends and link to each other in the centre bore, the cylindrical sleeve of cavity of lower extreme separation is connected with the strengthening rib between sleeve and apron, a plurality of sleeves cup joint respectively in herringbone post upper end. Owing to carry out above - mentioned scheme, this application simple **structure**, it is lighter conduct oneself with dignity, and hoist and mount are convenient, and it is convenient install, and the welding angle of regulation lasso and apron is passed through in this application simultaneously, can satisfy the demand with the herringbone **support** connection of different gradients.

17/37 © EPODOC / EPO

- PN - [CN205069045U](#) U 20160302
- PR - CN20152866556U 20151103
- AP - CN20152866556U 20151103
- DT - I
- PA - STATE GRID SHANDONG CHIPING
COUNTY POWER SUPPLY CO LTD
- TI - Novel tablet marks in multi -
functional transformer **substation**
- AB - The utility model relates to a
transformer **substation** field of
marking especially relates to a
novel tablet marks in multi -
functional transformer **substation**,
this signboard change
information of being convenient
for, and have the illumination
and the function of storing repair
tools. Its **structure** includes a pair
of **pole** setting, is equipped with
the horizontal **pole** between
the **pole** setting, the vertical fixed
flat board that is equipped with
in one side of **pole** setting, the
side fixed surface of flat board
be equipped with the magnetic
sheet, the magnetic sheet
updraft type is with a plurality of
unit iron plates that are used for
marking information, the upper
end of **pole** setting be equipped
with solar cell panel through
the **support**, solar cell panel be
connected with the shot -light of
fixing in dull and stereotyped
bottom with the battery of fixing
on the horizontal **pole** through
interconnecting link. The utility
model discloses a novel tablet
marks in multi -functional
transformer **substation**, easy
operation, convenient to use is
applicable to multiple place.

18/37 © EPODOC / EPO

- PN - [CN205036285U](#) U 20160217
- PR - CN20152696078U 20150910
- AP - CN20152696078U 20150910
- DT - I
- PA - FU HAIYAN
- TI - Multi -functional ladder is used
in relay protection wiring
- AB - The utility model relates to a
multi -functional ladder is used
in relay protection wiring
belongs to the electrical
equipment field. Including the
ladder body, set up at this
internal placing assembly of

ladder, set up at the wheel components and the fixed subassembly of ladder body bottom, hang and establish the toolbox at ladder body lateral part, wheel **support** member that wheel components includes the fixed block be connected with ladder body bottom, is connected with ladder body bottom, the gyro wheel of being connected through pivot and wheel **support** member, equipartition at the recess in the gyro wheel outside, set up round pin axle outside the experiment **support**, and sell the spacing handle and the spacing arc **pole** of hub connection. The utility model discloses the setting can be spacing wheel components, convenient remove and can be spacing, the wiring of operation personnel sets up fixed subassembly, when running into unevenness's ground for the ladder is placed firmly, when the wiring is shielded in transformer **substation's** protection, can provide comfortable call taker location and convenient instrument storage for protection wiring personnel, reduced the physical demands of wiring work, the effectual wiring efficiency that has improved has reduced the probability because of the wiring error of fatigue appearance, has effectively ensured the safety and stability operation of electric wire netting, simple **structure**, low cost.

19/37 © EPODOC / EPO

PN - [CN105336537](#) A 20160217

PR - CN20151758342 20151109

AP - CN20151758342 20151109

DT - I

CT - || STSE (A)

[CN1925084](#) A 20070307

[YX] (HUAYI ELEC APPARATUS GROUP CO [CN])

[Y] 2、4、5、7

* 说明书第2页第2段、倒数第2-4段，附图1、2 *

[X] 1、3、6;

[CN103779132](#) A 20140507

[Y] (SHANGHAI ROYE ELECTRIC SCIENCE & TECH CO LTD)

[Y] 2、4、5、7

* 说明书第33段，附图1、2 *;

[CN205751994U](#) U 20161130
[R] (CHUAN KAI ELECTRIC CO LTD)
[R] 1-7
* 权利要求1-7 *

CNOI - [H01H33/53](#)
PA - CHUAN KAI ELECTRIC CO LTD
TI - High-voltage gas switching equipment with low temperature protection device
AB - The invention relates to high-voltage gas switching equipment with a low temperature protection device, which comprises circuit breaker single poles. Each circuit breaker single **pole** comprises an arc-extinguishing chamber, a single-phase **support** and a transmission crank arm box sequentially connected, and the low temperature protection device is arranged on the connection device of the single-phase **support** and the transmission crank arm box. Through arranging the low temperature protection device between the circuit breaker single-phase **support** and the transmission crank arm box of the switching equipment and coating an inter-**pole** connection gas pipe with a heat insulation material, the temperature difference in the case of SF6 flow can be ensured not to be over large, and under a condition of not changing the **structure** and the operation parameters of a conventional product, **substation** equipment can operate safely and reliably in harsh conditions.

20/37 © EPODOC / EPO

PN - [CN204882698U](#) U 20151216
PR - CN20152567848U 20150731
AP - CN20152567848U 20150731
DT - I
PA - STATE GRID SHANDONG
DONGMING COUNTY POWER
SUPPLY COMPANY
TI - Unmanned aerial vehicle ware with high pressure overhead line tests electric work ability in high altitude
AB - The utility model relates to an electroscope, in particular to unmanned aerial vehicle ware with high pressure overhead line tests electric work ability in high altitude. This unmanned aerial

vehicle ware with high pressure overhead line tests electric work ability in high altitude, including the electrocope, characterized by: electrocope end of fixed is connected with flexible motor in telescopic link front end, telescopic link, and flexible motor is installed in unsettled **support** body, and the **support** body is connected with step motor's motor shaft, and step motor installs in the unmanned aerial vehicle top, and the electrocope is connected with the camera through the **pole** setting. The beneficial effects of the utility model are that: whether usable unmanned aerial vehicle inspects with electricity to the transformer **substation** that the condition is arduous, and the record all can be shot to the result at every turn, simple **structure**, convenient operation, efficient have satisfied the demand of modernized electric wire netting construction and development.

21/37 © EPODOC / EPO

- PN - [CN204866638U](#) U 20151216
- PR - CN20152567889U 20150731
- AP - CN20152567889U 20150731
- DT - I
- PA - STATE GRID SHANDONG
DONGMING COUNTY POWER
SUPPLY COMPANY
- TI - Unmanned aerial vehicle with
function is cleaned in high
voltage transmission lines
insulator high altitude
- AB - The utility model relates to a
send transformer circuit
sweeper, in particular to
unmanned aerial vehicle with
function is cleaned in high
voltage transmission lines
insulator high altitude. This
unmanned aerial vehicle with
function is cleaned in high
voltage transmission lines
insulator high altitude, including
the cylinder **support**,
characterized by: cylinder **support**
bottom is connected with
unmanned aerial vehicle through
the connecting rod, and the
through -hole has been offered
respectively to cylinder **support**
both sides, inserts respectively

in two through -holes and is equipped with branch, and the brush head that has the brush hair is connected through the **support** arm to branch, and branch is fixed mutually with locking bolt and cylinder **support**. The beneficial effects of the utility model are that: simple **structure**, convenient operation, usable unmanned aerial vehicle cleans the multiple specification insulator of the arduous transformer **substation** of condition, has avoided the puzzlement of climbing line **pole**, cleans efficiently, can take away smoke and dust etc. Fast, has ensured electrified the going on of operation safe and orderly of cleaning.

22/37 © EPODOC / EPO

PN - [CN204859427U](#) U 20151209
 PR - CN20152662103U 20150828
 AP - CN20152662103U 20150828
 DT - I
 PA - HUZHOU POWER SUPPLY CO OF STATE GRID ZHEJIANG ELECTRIC POWER CO; STATE GRID CORP CHINA
 TI - Installation device for video monitoring based on visualization platform of transformer **substation**
 AB - The utility model relates to an installation device for video monitoring based on visualization platform of transformer **substation**, be equipped with the bottom plate and the montant of setting on the bottom plate that remove the gyro wheel including the bottom, be equipped with horizontal diaphragm on the montant, be equipped with the **support** on the horizontal diaphragm, be equipped with supply assembly on the montant, the utility model discloses an advantage: realize the installation to video monitoring equipment through the **support**, and realize power supply to video monitoring equipment through the supply assembly who is equipped with on the montant, video monitoring attachment of devices power supply has been guaranteed, the connectivity of

making a video recording has been guaranteed, remove the setting of gyro wheel, make video monitoring equipment portability, the installation number of current video monitoring equipment has been reduced, using cost is reduced, set the **support** to rotor and connecting plate, rotation through rotor control connection board, thereby make the chassis of installing on the connecting plate rotate, making a video recording of the video monitoring equipment different angles of adaptation of being convenient for, reach the best effect of making a video recording, moreover, the steam generator is simple in **structure**, the setting of installation **pole**, convenient assembly and disassembly.

23/37 © EPODOC / EPO

- PN - [CN204850398U](#) U 20151209
- PR - CN20152544203U 20150724
- AP - CN20152544203U 20150724
- DT - I
- PA - CHANGZHOU POWER SUPPLY CO OF
JIANGSU ELECTRIC POWER CO;
JIANGSU ELECTRIC POWER CO;
STATE GRID CORP CHINA
- TI - Aerial operation insulation
protection **support** of
transformer **substation**
- AB - The utility model provides an
aerial operation insulation
protection **support** of
transformer **substation**, take
horizontal **pole**, 2 spinal branch
vaulting poles, 2 last connecting
pieces, 2 well connecting pieces,
2 lower connecting pieces, 4 half
staple bolt components and 4
belt ratchet turn -buckles
including hanging, 2 the upper
end of spinal branch
vaulting **pole** is gone up the
connecting piece and is hung the
both sides fixed connection who
takes the horizontal **pole** through
2, 2 the connecting piece is
respectively fixed respectively at
the middle part of 2 spinal
branch vaulting poles and is set
up 1 in individual, 2 individual
connecting piece is down
respectively fixed respectively in
the bottom of 2 spinal branch
vaulting poles and is set up 1, 4
half individual staple bolt

component corresponding and 2 well connecting pieces and 2 lower connecting piece fixed connection, when using the installation, 4 corresponding and 4 half basic **pole** fixed connection of plug -in strip that the staple bolt members overlap carried forward and transformer **substation** of belt ratchet turn -buckle. The utility model discloses simple **structure**, cost be lower, carry and install dismantle convenient, can effectively ensure constructor and equipment safety when using, improve work efficiency.

24/37 © EPODOC / EPO

- PN - [KR101557722B](#) B1 20151006
- PR - KR20150039955 20150323
- AP - KR20150039955 20150323
- DT - I
- CNOI - [H02B11/10](#)
- PA - SEWON ENG CO LTD [KR]
- TI - PANEL **STRUCTURE** ASSEMBLY OF POWER FACILITIES FOR **SUBSTATION**
- AB - Disclosed is a panel **structure** of power facilities for a **substation**. The panel **structure** of power facilities for a **substation** comprises a protection distribution board of power facilities separated from a concrete floor by a **supportpole** and installed in an access floor area of a **substation** where a floor is constructed. The panel **structure** of power facilities for a **substation** further comprises:
i) a panel main body which is formed in a rectangular enclosure shape, and comprises a protection relay to protect the power facilities of the **substation** and a live/dead line display unit to automatically display an operational state of a live line and a dead line of the power facilities through an electric contact point; ii) a first mounting member fixed and installed on at least a corner portion of a lower surface of the panel main body; and iii) a second mounting member installed on the concrete floor of a section where an access floor corresponding to the panel main body is removed in the access floor area, and disposed to be screw-mounted

on the first mounting member in a male/female manner. The second mounting member is installed on a base member fixed on the concrete floor of the section where the access floor is removed to be rotated in both directions by an external force while being screw-mounted on the first mounting member, and adjusts a height of the panel main body which is a height of the access floor relative to the concrete floor through the first mounting member.

25/37 © EPODOC / EPO

- PN - [CN204676984U](#) U 20150930
- PR - CN20152369859U 20150602
- AP - CN20152369859U 20150602
- DT - I
- PA - ZHENJIANG POWER SUPPLY CO OF
JIANGSU ELECTRIC POWER CO;
STATE GRID CORP CHINA
- TI - Transformer **substation** encloses
fender with insulation of
combination formula
- AB - The utility model relates to a
transformer **substation** encloses
fender with insulation of
combination formula. What
include that the bottom **support**
that is formed by insulating
material preparation and a
plurality of can splice each other
encloses the fender unit, and the
bottom **support** is the L
type **structure** that comprises
vertical section and horizontal
segment, enclose and keep off
the unit and include two vertical
poles, connect through the
horizontal bar respectively
between two vertical peak of the
staff portions and the bottom, a
plurality of pins that enclose are
installed with the region that
two vertical poles enclose to two
horizontal bars, but a plurality of
the pin articulated transverse
contraction that
reticulates, **structure** of upholding
each other of enclosing, the
below encloses the bottom of
the vertical **pole** that keeps off
the unit and the top in -cut
connection of the vertical section
of bottom **support**, the unit is kept
off at the tip position in -cut
connection that is enclosing the
vertical **pole** of fender to adjacent
enclosing. The device forms

through a plurality of part equipments, and the connection can be dismantled to each part, the convenience of transporting, take. Enclose the fender unit through the increase, both can reach height -adjusting's purpose, guaranteed sufficient protection height to staff's personal safety has been guaranteed.

26/37 © EPODOC / EPO

- PN - [CN204613118U](#) U 20150902
- PR - CN20142848918U 20141229
- AP - CN20142848918U 20141229
- DT - I
- PA - ELECTRIC POWER SCIENCES INST OF YUNNAN POWER GRID COMPANY
- TI - On --spot infrared detection device of transformer **substation's** pipe generating line
- AB - The utility model provides an on - -spot infrared detection device of transformer **substation's** pipe generating line, includes testing platform and triangular supports frame two parts, and wherein testing platform comprises thermal infrared imager (1), laser range finder (2), anemograph (3), thermometer (4) respectively, and thermal infrared imager, laser range finder, anemograph, thermometer are all fixed on erection **support** (5), and erection **support** (5) adopt revolving **structure** cover in plane to connect on supporting seat (8), adopt set screw (7) and adjustment handle (6) fixed, supporting seat (8) adopt the tripod of three spinal branch vaulting **pole** (9) to **support** The utility model discloses a focus measurement when testing platform will manage generating line temperature infrared detection, temperature measurement, wind speed measure and the infrared detection integration is accomplished on a device, have made things convenient for technical staff's operation, and the usable the device of measurement personnel realizes arbitrary angle infrared detection to transformer **substation's** pipe generating line, carries out the parameter setting through the data of real -time measurement

to the thermal infrared imager,
has improved detection
efficiency and precision.

27/37 © EPODOC / EPO

- PN - [CN204597411U](#) U 20150826
- PR - CN20152224904U 20150415
- AP - CN20152224904U 20150415
- DT - I
- PA - STATE GRID CORP CHINA; TIANJIN
ELECTRIC POWER TRANSMISSION &
TRANSFORMATI
- TI - Transformer **substation's** cast
bus **structure**
- AB - The utility model relates to a
transformer **substation's** cast
bus **structure**, including base
and **support** head, the coaxial
cartridge of **support** head is on
the base, and concrete **structure**
is: the base includes base plate,
universal wheel and stand, the
vertical stand that is equipped
with admittedly in base plate
center upper end, and this stand
is made for the 80mm steel pipe,
and elastic cushion block is
installed to the bottom in the
stand, the **support** head
includes **pole** setting, backup
pad, arc **support** piece and runner,
the **pole** setting with the
cooperation of stand cartridge,
stand lower extreme system have
with the base in elastic cushion
block complex direction inserted
sheet, stand upper end coaxial
fixed mounted has a backup pad,
the ascending arc **support** piece
of an opening is equipped with
admittedly to this backup pad
upper end, this arc **support**
piece's both ends symmetry
hinge is equipped with a runner.
The utility model discloses the
size standard, convenient to use
promotes the efficiency of
construction, improves welding
quality, reduction construction
number, the reduction of
erection time for construction
progress, reduction construction
cost, the transportation of being
convenient for, stock, equipment
can be dismantled to this **support**
in addition.

28/37 © EPODOC / EPO

- PN - [CN204531614U](#) U 20150805
- PR - CN20152018960U 20150113
- AP - CN20152018960U 20150113

DT	- I
PA	- STATE GRID CORP CHINA; STATE GRID TIANJIN ELECTRIC POWER CO LTD
TI	- Transformer substation's slidingtype security fence that stretches out and draws back
AB	- The utility model relates to a transformer substation's slidingtype security fence that stretches out and draws back, including base, pole setting and couple, vertically on the said base adorn the pole setting admittedly, couples that two symmetries of upper end installation of this pole setting set up, the lower terminal surface of said base inlays the universal wheel that is equipped with a plurality of circumference equipartitions, and this universal wheel is with the connection structure of base: the lower terminal surface system of said base has a plurality of rectangle recesses that hold the universal wheel, and support arm hinge dress universal wheel is passed through to the inboard of every rectangle recess. This security fence is through at a plurality of folding universal wheels of bottom surface installation, has abandoned the dragging of original removal security fence, the mode of embracing. The utility model discloses simple structure , design scientific and reasonable, the transport is convenient, effectively uses manpower sparingly, has improved work efficiency, has shortened the time of arranging safety measure, has the value of extensive popularization and application.

29/37 © EPODOC / EPO

PN	- CN204243576U U 20150401
PR	- CN20142709840U 20141124
AP	- CN20142709840U 20141124
DT	- I
PA	- HANGZHOU QIANTANG RIVER ELECTRIC GROUP CO LTD
TI	- Wire inlet insulating device used for prefabricated substation high voltage top cable
AB	- The utility model relates to a wire inlet insulating device, and

especially relates to a wire inlet insulating device used for a prefabricated **substation** high voltage top cable. The wire inlet insulating device comprises an electric **pole** and a prefabricated **substation**, the upper part of the prefabricated **substation** is provided with a rainproof cover, the interior of the prefabricated **substation** is provided with a humidity sensor, the upper part of the rainproof cover is provided with a platform **support** fixed on the rainproof cover, the platform **support** is provided with a junction box, the interior of the junction box is provided with a high voltage wall bushing which extends outwards, one end of the high voltage wall bushing is connected with the electric **pole** through a high voltage inlet cable, the other end of the high voltage wall bushing is connected with the prefabricated **substation** through a high voltage inlet cable, and a sealing ring is arranged between the junction box and the platform **support**. The wire inlet insulating device used for the prefabricated **substation** high voltage top cable is compact in **structure**, high in service safety and convenient to operate.

30/37 © EPODOC / EPO

- PN - [CN203406022U](#) U 20140122
- PR - CN20132435954U 20130722
- AP - CN20132435954U 20130722
- DT - I
- PA - STATE GRID CORP CHINA;
CHONGQING CHUANDONG
ELECTRIC POWER GROUP CO LTD
- TI - Transformer **substation** isolating
disconnecting link nameplate
installing **support**
- AB - The utility model discloses a
transformer **substation** isolating
disconnecting link nameplate
installing **support** which
comprises a nameplate fixing
board, a box iron clamp and a
connecting lining board. The box
iron clamp is in an inverted U
shape, the nameplate fixing
board is vertically welded to the
upper portion of the box iron
clamp, the connecting lining

board is connected between the lower end of a left side board and the lower end of a right side board of the box iron clamp through bolts, and the two ends of the connecting lining board are bent and a slightly-inverted U shape **structure** is formed integrally. When the transformer **substation** isolating disconnecting link nameplate installing **support** is used, the box iron clamp is installed on I-shaped box iron which is used for playing the supporting role and is disposed between the operation position of a isolating disconnecting link and a concrete **pole**, the two ends of the connecting lining board and the lower ends of the left side board and the right side board of the box iron clamp are fixedly connected together through bolts, and finally a isolating disconnecting link nameplate is connected to the fixing board of the nameplate through bolts. According to the installing **support** provided by the utility model, the nameplate is firmly and conveniently installed, saves time and effort, is proper in height and suitable for observation, and does not influence the normal operation of the isolating disconnecting link and the operation of an attendant on equipment.

31/37 © EPODOC / EPO

- PN - [CN202405719U](#) U 20120829
- PR - CN20112512495U 20111212
- AP - CN20112512495U 20111212
- DT - I
- PA - XINMI POWER SUPPLY CO LTD
- TI - Novel cable line pi connection system for transformer **substation**
- AB - The utility model discloses a novel cable line pi connection system for a transformer **substation**. The pi connection system comprises a **pole**; a **support** cross arm is arranged along the vertical direction of a cable line and at the top of the **pole**; carrying **pole** supportings are respectively arranged along the parallel direction of the cable line and at the two ends of the **support** cross arm; suspended lightning

arresters are respectively arranged at the two end of the carrying **pole** supportings; cables below the suspended lightning arresters are fixed via the **pole**; and the middle part of the **support** cross arm is fixed on and parallel with the **pole**. By adopting a carrying **pole** principle design, forces applied onto components at the two ends of the pi connection system are balance, the arrangement of the two ends are symmetrical and reasonable, the **supportstructure** is simple and clear, the **structure** is compact and reasonable, and a demand for the electric apparatus safety distance of the plurality of lightning arresters can be fully met.

32/37 © EPODOC / EPO

- PN - [CN202401960U](#) U 20120829
- PR - CN20112512537U 20111212
- AP - CN20112512537U 20111212
- DT - I
- PA - XINMI POWER SUPPLY CO LTD
- TI - Capital construction A-type ladder anti-tipping device of transformer **substation**
- AB - The utility model discloses a capital construction A-type ladder anti-tipping device of a transformer **substation**, which comprises a left slanting **pole**, a right slanting **pole**, an upper transverse **pole** and a lower transverse **pole** which form a ladder-shaped **structure**. Rubber insulation leather sheaths are arranged at positions of **support** points at the bottom of the left slanting **pole** and the right slanting **pole**, a bolt hole connected with a capital construction A-type ladder of the transformer **substation** is arranged on the upper transverse **pole** which is connected with the capital construction A-type ladder of the transformer **substation** through a bolt. The rubber insulation leather sheaths are additionally arranged at the **support** points at the bottom to increase **support** area and frictional force, so that problems of over-large pressure of the A-type ladder on the ground and insufficient **support** moment of the A-type ladder on

the lateral side are fundamentally solved. In addition, the bolt hole connected with the capital construction A-type ladder of the transformer **substation** is arranged on the upper transverse **pole** which is connected with the capital construction A-type ladder of the transformer **substation** through the bolt, so that the capital construction A-type ladder anti-tipping device is detachable in connection position and convenient in carry.

33/37 © EPODOC / EPO

- PN - [CN102593743](#) A 20120718
- PR - CN20121041254 20120223
- AP - CN20121041254 20120223
- DT - I
- CT - || STSE (A)
[CN202503208U](#) U 20121024
 [R] (XIUHUA WANG)
 [R] 1
 * 权利要求1 *;
[GB191048](#) A 19231220 [A] (BRITISH THOMSON HOUSTON CO LTD)
 [A] 1-4
 * 全文 *;
[CN202084825U](#) U 20111221
 [Y] (GUIZHOU CHANGZHENG ELECTRIC ASSEMBLY CO LTD)
 [Y] 1-4
 * 说明书第[0015]-[0023]段及图1 *;
[CN101320891](#) A 20081210 [A] (YUN GAO [CN])
 [A] 1-4
 * 全文 *;
[CN202127191U](#) U 20120125
 [Y] (NINGXIA LICHENG ELECTRIC GROUP CO LTD)
 [Y] 1-4
 * 说明书第[0012]-[0013]段及图1-2 *
- PA - XIUHUA WANG
- TI - 110kV vacuum/sulfur hexafluoride mobile cart type circuit breaker and assembling frame space
- AB - The invention relates to a 110kV vacuum/sulfur hexafluoride mobile cart type circuit breaker and an assembling frame space which are suitable for a 110kV integrated **substation**. The **pole** of the circuit breaker and a circuit breaker mechanism case which is matched with the circuit breaker are fixed on a mobile cart and are reinforced through

insulation **support**, the mobile cart can slip in the circuit breaker cart moveable track of the whole frame space through cart mobile wheels; when the whole cart is completely placed in the track, the **pole** of the circuit breaker is connected with an upper contact lead terminal and a lower contact lead terminal through an upper contact and a lower contact and the upper and lower contact lead terminals are fixed on a **support** insulator in the whole frame space; the lower contact lead terminal is connected with a current transformer through a lead; the upper contact lead terminal is connected with a tubular bus-bar installed on the upper part of the whole frame space through another lead; and the tubular bus-bar is installed on the **support** insulator of the upper part of the whole frame space. The 110kV vacuum/sulfur hexafluoride mobile cart type circuit breaker is simple in **structure**, high in safety and convenient in maintenance.

34/37 © EPODOC / EPO

- PN - [CN202217946U](#) U 20120509
- PR - CN20112335126U 20110908
- AP - CN20112335126U 20110908
- DT - I
- PA - ZHOUKOU POWER SUPPLY BR
HENAN
- TI - Tripping-and-closing coil
installation tool for 35kV
transformer **substation**
- AB - The utility model discloses a
tripping-and-closing coil
installation tool for a 35kV
transformer **substation**, which
comprises a screw **pole** with a
handle, wherein the screw **pole**
penetrates through the upper
side of a frame-shaped **support** to
extend into the frame-
shaped **support**, a clamp disk is
installed on the lower middle
portion of the frame-
shaped **support**, and baffles are
arranged at positions where the
upper middle portion of the
frame-shaped **support** is
connected with the screw **pole**.
The tripping-and-closing coil
installation tool leads a coil to
penetrate into the screw **pole**

through the lower portion of the screw **pole**, a copper tube in the coil can be fixed on the screw **pole** conveniently by adjusting the fixed type adjustable clamp disk, and the positions of the baffles are then adjusted so as to enable the distance between the two baffles to be adjusted to be appropriate and enable the copper tube to just penetrate through the two adjustable baffles. The copper tube is driven to move by rotating the handle of the screw **pole**, and the coil cannot move under the action of the baffles, so that fast and reliable separation between the copper tube and the coil is achieved. The tripping-and-closing coil installation tool for the 35kV transformer **substation** is simple in **structure**, convenient to manufacture, economical and practical.

35/37 © EPODOC / EPO

- PN - [CN201975189U](#) U 20110914
- PR - CN2011298530U 20110407
- AP - CN2011298530U 20110407
- DT - I
- CCI - [H01C7/12](#)
- PA - GULIFA GROUP CO LTD; HEFEI
GULIFA ELECTRIC CO LTD
- TI - Multifunctional
transformer **substation** lightning
arrester
- AB - The utility model relates to a
multifunctional
transformer **substation** lightning
arrester on a power distribution
line transformer **substation** down
lead. The multifunctional
transformer **substation** lightning
arrester mainly comprises a
lightning arrester body, a gland,
a bolt, a nut, a **pole** electroscope
outer cover, an insulated
protective cover, an
insulated **support** frame, a
release and a ground wire. The
multifunctional
transformer **substation** lightning
arrester is characterized in that
puncture teeth are arranged in
the high-voltage hardware wire
groove of the lightning arrester
and the wire groove of the gland,
and under the effects of the bolt
and the torque nut, a conducting
wire insulating layer which can

be installed in the wire grooves in a penetrating way is electrically connected with a conducting wire; a **pole** electroscope is arranged at the external end of the gland, and a **pole** electroscope outer cover is U-shaped, is wrapped above the external part of the **pole** electroscope and can be opened upwards; the insulated protective hood covers all metal exposed parts except the **pole** electroscope at the upper end of the lightning arrester; and the lightning arrestor body is installed on the insulated **support** frame and is connected with the release and the ground wire. Compared with the prior art, the multifunctional transformer **substation** lightning arrester has a lightning arrester function, a conducting wire fixing function, an electroscope function and a grounding function, the lightning arrester steps out of service because the release acts when the lightning arrester is failed, and the multifunctional transformer **substation** lightning arrester has the advantages of compact **structure**, convenience in installation, high safety in use, reliable performance, easiness in finding faults and the like.

36/37 © EPODOC / EPO

PN - [RU2198456](#) C2 20030210
 PR - RU19990117375 19990810
 AP - RU19990117375 19990810
 DT - I
 PA - ARZHANNIKOV MIKHAIL
 BORISOVICH
 TI - **POLE-TYPE**
 TRANSFORMER **SUBSTATION**
 AB - FIELD: outdoor **pole**- mounted substations. SUBSTANCE: each phase of **pole**-type transformer **substation** incorporates electrically interconnected surge limiter, fuse, and power transformer connected to load. All these components are installed on metal frame secured on **pole**-type supporting **structure**. Control unit is inserted between transformer and load and fixed on **support** on metal frame. This unit provides for maintaining voltage across

load within desired limits,
protecting power transformer
secondary winding against
overloads and short-circuit
currents in load circuit,
disconnecting from the latter,
and automatically reclosing
power transformer, as well as
transmitting data on position of
power transformer secondary
winding tap changer, etc.. EFFECT:
enhanced operating reliability at
minimal maintenance charges. 1
dwg

37/37 © EPODOC / EPO

- PN - [KR100672239B](#) B1 20070129
- PR - KR20060111203 20061110
- AP - KR20060111203 20061110
- DT - I
- CT - || STSE (B1)
[KR970020027](#) A 00000000 []
- CNOI - [H02G3/088](#)
- CNOA - [H02G2200/30](#)
- PA - HERELD ENGINEERING CO LTD [KR]
- TI - **STRUCTURE** FOR CONNECTING
CABLE OF **SUBSTATION**
- AB - A **structure** for connecting a cable
of a **substation** is provided to
prevent an electricity failure
accident by preventing rain water
from penetrating into an
underground cable. In a **structure**
for connecting a cable of
a **substation**, an underground
cable is inserted into a tube. The
underground cable receives
power from the **substation** and is
composed of three-phase cables.
The underground cable is fixed
to an electric **pole** and an end
portion of the underground cable
is exposed from the tube. A
plurality of three-phase power
supplying cables(21,22,23) is
connected to a power supplying
device, respectively. The plurality
of three-phase power supplying
cables(21,22,23) receives the
power from the underground
cable by being connected to the
three-phase cable of the
underground cable. A connection
unit connects the three-phase
cable of the underground cable
and the three-phase power
supplying cable. A plurality of
connection units(31,32,33) is
formed in a corn shape. And,
each of the connection units
(31,32,33) has a straight line type

cylindrical portion and a tapered portion formed on a bottom of the straight line type cylindrical portion to **support** a flow of the rain water.

[SS 36]