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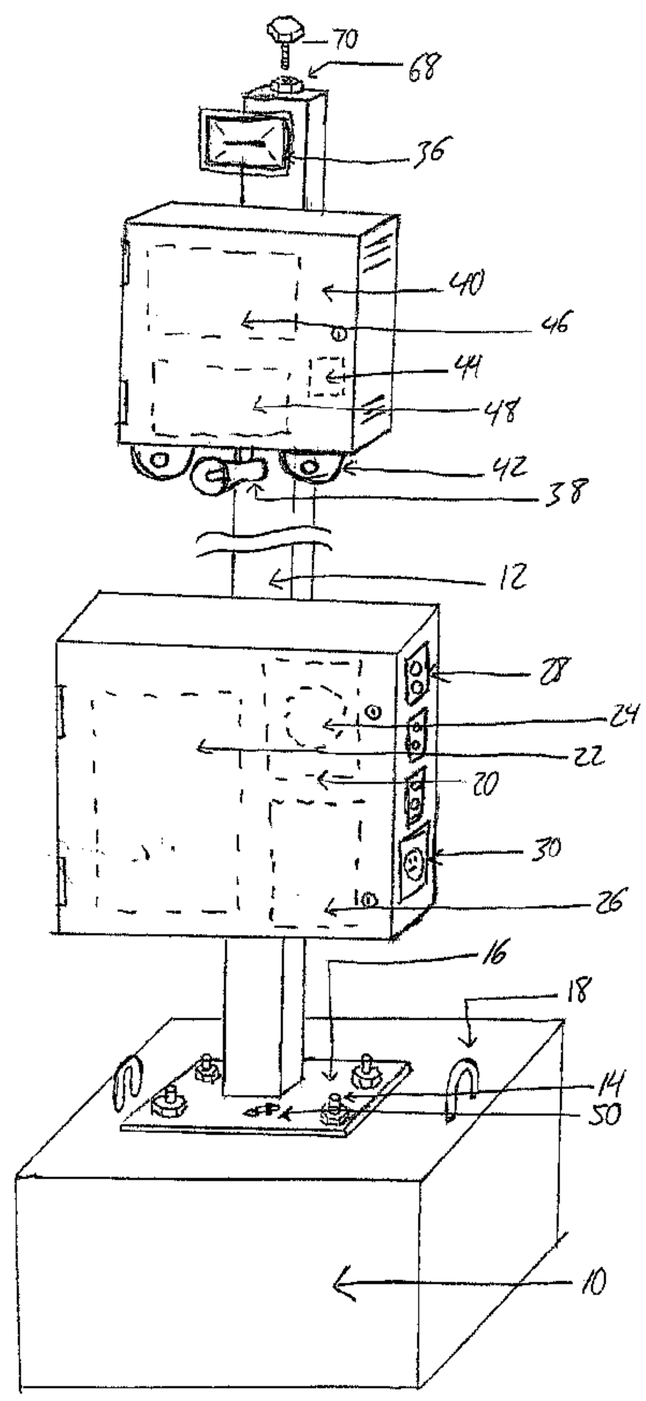
(54) **Titre : APPAREIL DE BORNE D'ALIMENTATION ELECTRIQUE MOBILE SERVANT A FOURNIR UNE ALIMENTATION ELECTRIQUE DOSEE ET DES MESURES DE SECURITE A UN CHANTIER DE CONSTRUCTION NON DESSERVI**

(54) **Title: MOBILE POWER POLE APPARATUS FOR PROVIDING METERED ELECTRICAL POWER AND SECURITY MEASURES TO AN UNSERVICED CONSTRUCTION SITE**

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ABSTRACT

A mobile power pole apparatus for providing metered electrical power to a site from overhead power lines of an electrical utility provider. A pole assembly of the apparatus features a transportable ballast block, and a pole standing upright therefrom. A service line has connection leads situated at or proximate a top end of the pole for selective coupling to the overhead power lines. A power meter base is carried on the pole assembly for receipt of a utility-provided power meter. At least one power receptacle is fed by said service line to enable metered powering of one or more electrical devices from the overhead lines. The weight of the ballast block stabilizes the upright pole without buried installation. Video recording and transmitting equipment is provided on the pole together with motion-activated lighting and an audible alarm to provide security measures to the site using mains power.

# MOBILE POWER POLE APPARATUS FOR PROVIDING METERED ELECTRICAL POWER AND SECURITY MEASURES TO AN UNSERVICED CONSTRUCTION SITE

## FIELD OF THE INVENTION

The present invention relates generally to the provision of power and security at constructions sites where a permanent metered power connection has not yet been established.

## BACKGROUND

In the field of construction and predominantly home construction, it is known to erect a wooden pole and attach plywood backing board to serve as a support structure for a temporary power hook up featuring a utility-provided meter and a breaker panel so that electrical tools and equipment can be powered at a construction site that as yet lacks a permanent meter installation, and thus has no main power service. However, the setup of such a temporary metered power hookup is inconvenient, as the pole must be partially buried in the ground in order to ensure adequate structural stability, also its susceptibility to being tampered with as it is exposed. If the structure is not erected to regulated standards, the electrical utility provider will refuse to make the connection to the utility power lines, thus causing further costs and delays to the project.

Another problem in the construction industry is the provision of security equipment at construction sites where trespassing, theft, trade damage and vandalism are commonly faced issues. Its also rather difficult to manage a security system when depending on an unsecured power source such as a wood power pole or a generator.

Accordingly, there remains room for improvement in the provision of providing secured and constant power along with security at construction sites.

## SUMMARY OF THE INVENTION

According to one aspect of the invention there is A mobile power pole apparatus for providing metered electrical power to a site from overhead power lines of an electrical utility provider, said apparatus comprising:

a pole assembly comprising:

a freely liftable, transportable, above-ground ballast block having an underside for unburied seating atop a ground surface at a selected placement location at said site, and a topside lying opposite said underside; and

a upright pole attached or attachable to said ballast block in a working position standing upwardly away from the topside thereof;

a service line comprising connection leads situated at or proximate a top end of the upright pole for selective coupling to the overhead power lines;

a power meter base carried on the pole assembly and in electrical communication with said service line for coupling of a power meter to said meter base in a manner operable to meter power conveyed through said service line from the overhead power lines;

a breaker panel carried on the pole assembly and connected to the service line via the power meter base to receive metered powered from the service line;

a selectively operable disconnect installed on the service line in series with the power meter and breaker panel at a location between the breaker panel and the connection leads;

at least one power receptacle fed by said service line via said meter base, disconnect and breaker panel to enable powering of one or more electrical devices by the overhead power lines;

wherein the ballast block is liftable onto and off of a road transport vehicle, and lowerable therefrom into a seated position atop the ground surface in non-buried relation thereto to stabilize the upright pole in upstanding relation to said ground surface in non-buried relation thereto at the selected placement location.

Preferably there are one or more security devices installed on the pole assembly.

Preferably at least one of said one or more security devices is mounted to the pole assembly at a greater elevation than the at least one power receptacle.

Preferably at least one of said security devices is mounted to the pole assembly at a greater elevation than said meter base.

Preferably at least one of said one or more security devices is motion-activated.

Preferably said one or more security devices comprises a light source.

Preferably said light source comprises a motion activated light source.

Preferably said light source comprises a flood light.

Preferably said one or more security devices comprises one or more cameras.

Preferably there is a recorder operably connected to said one or more cameras to record images captured thereby.

Preferably the service line is routed along a side of the upright pole opposite said one or more cameras outside a viewing range thereof.

Preferably at least one of said one or more security devices is overhung by a protective component.

Preferably said protective component comprises a weather-proof enclosure containing one or more internal security-related components operatively coupled to said one or more security devices.

Preferably said one or more internal security-related components comprise a wireless communications module for transmitting images captured by said one or more security devices to one or more authorized monitoring personnel.

Preferably said one or more internal security-related components comprise an image recorder for storing images captured by said one or more security devices.

Preferably there is a heater operable to heat an interior space of said weather-proof enclosure.

Preferably there are one or more interior power receptacles inside said weather-proof enclosure for powering of said one or more internal security-related components thereby.

Preferably said one or more security devices comprise an audible alarm.

Preferably at least one of the one or more security devices are wired for powering thereof via the service line, the disconnect, the meter base, and the breaker

panel.

Preferably lifting hooks are affixed to the ballast block for machine-driven lifting thereof.

Preferably the lifting hooks are embedded within said ballast block.

Preferably said lifting hooks have upper ends of inverted U-shape, and lower ends are embedded in the ballast block.

Preferably the ballast block is concrete.

Preferably there is a ladder stabilizer mounted or mountable to the upright pole at or proximate the top end thereof for use in positioning and stabilizing a ladder against the apparatus to access the connection leads during connection of the apparatus to the overhead power lines.

Preferably the ladder stabilizer is multi-sided to provide ladder support at multiple side of said upright pole.

Preferably there is a keyed connection between the upright pole and the ladder stabilizer to prevent relative movement therebetween.

Preferably said ladder stabilizer comprises at least one rung-hook for hooked engagement with a rung of said ladder.

Preferably said at least one rung-hook comprises multiple hooks spanning in different directions for use on different sides of the said upright pole.

Preferably said at least one rung-hook comprises multiple rung hooks having rung-accommodating cradles arranged in paired sets on different sides of the pole.

According to another aspect of the invention, there is provided a method of using the forgoing apparatus, including transporting the ballast block to the site on a transport vehicle, using a working machine to lift the ballast block from said transport vehicle onto the ground surface at the selected placement site, using said placed ballast block to support the upright pole in the working position standing upwardly away from the ballast block.

Preferably said site is a construction site, and after completion of a construction phase during which temporary power is required at said construction

phase, loading the ballast block onto the same or another transport vehicle using the same or another working machine, and transporting the apparatus from said construction site to another location.

Preferably the method includes lifting the ballast block from the transport vehicle onto the ground surface at the selected placement site with the upright pole detached from said ballast block, and subsequently attaching said upright pole to the ballast block in the working position thereon.

The method may include lifting the ballast block using a loader, which may be a skid steer loader.

Alternatively, the method may include lifting the ballast block using a forklift.

Preferably the method includes lifting the ballast block from above so as to suspend the ballast block from a lifting implement of the working machine during transfer of the ballast block from the transport vehicle to the ground surface.

## BRIEF DESCRIPTION OF THE DRAWINGS

One embodiment of the invention will now be described in conjunction with the accompanying drawings in which:

Figure 1 is a front perspective view of a mobile power pole apparatus for metered power connection from municipal overhead power lines at a construction site or other location as yet unserved by a permanent meter installation.

Figure 2 is a partial rear perspective view of the power pole apparatus of Figure 1.

Figure 3 is a perspective view of a ladder stabilizer mountable atop the power pole apparatus of Figures 1 and 2 to improve the stability of a ladder used during connection of the power pole apparatus to the overhead power lines.

In the drawings like characters of reference indicate corresponding parts in the different figures.

DETAILED DESCRIPTION

The drawings illustrate one embodiment of a mobile power pole apparatus for erection at a construction site or other location as yet unserved by a permanent metered connection to utility power lines.

Referring to Figure 1, the apparatus features two primary structural components, namely a ballast block 10 of concrete or other relatively dense solid-phase material, and an elongated pole 12 of aluminum or other sufficiently strong metal or non-metal material mounted atop the ballast block in a position standing vertically upright therefrom. The size, weight, shape and other characteristics of the ballast block are engineered to suitable specification to withstand designated wind and drag loads experienced by the apparatus during both transport and stationary use thereof. The weight of the ballast block is selected to not only be heavy enough to provide stability to the apparatus, but also to be light enough to be maneuvered by standard construction equipment such as skid steers and fork lifts, and for example may be approximately 2000lbs.

To enable mounting of the elongated pole to the ballast block, a set of threaded rods 14 have their lower ends permanently embedded within the ballast block, for example being hook doweled to the concrete engineered and capable of bearing the weight of the ballast block. The threaded rods 14 protrude vertically upward from the topside of the ballast block. A support plate 16, for example made of ½-inch thick aluminum plate is welded or otherwise affixed to the bottom end of the support pole. The pole may, for example, have a 4-inch by 4-inch square cross section and measure 16ft tall. The support plate has a set of mounting holes drilled or cored therethrough at spaced apart positions whose layout on the support plate matches the layout of threaded rods protruding from the topside of the ballast block. The illustrated embodiment employs a square support plate with four mounting holes situated proximate the corners of the plate to accommodate receipt of four threaded rods 14 standing upright from the ballast block, but it will be appreciated that the shape of the support plate and the quantity and layout of rods and mounting holes may vary. To removably fasten the support plate and attached pole to the ballast

block, four nuts are threaded onto the exposed upper ends of the threaded rods to bolt the support plate to the topside of the ballast block. A central drain hole may be cored through the support plate to enable drainage of rain water, melted snow, etc. from the hollow interior of the elongated pole standing vertically upright from the topside of the support plate.

The pole is centered on the support plate, which in turn is centered atop the ballast block, which as shown may have a simple square shape providing a flat horizontal topside and opposing flat horizontal underside for flush placement atop a suitable horizontal ground surface. At locations situated radially outwardly from the pole and support plate, a set of hooks 18 have their lower ends embedded within the ballast block, similar to the threaded rods 14, but with looped ends of the hooks 18 remaining exposed outside the ballast block above the topside thereof. The illustrated embodiment shows the exposed upper portions of the hooks as being of inverted U-shape opening downwardly toward the topside of the ballast block to cooperatively form a closed-loop therewith. Alternatively, each hook may have a closed eyelet at its top end. In either case, the closed loop of each hook above the topside of the ballast block creates an anchor point through which a chain can be tied between the ballast block and the bucket or other arm-carried implement of a skid steer loader, or the forks of a forklift, or the raiseable/lowerable implement or hoist of another suitable working machine in order to chain hoist the ballast block during relocation thereof from a transport vehicle (e.g. flat-bed truck, flat-bed trailer, or other truck/trailer of suitable weight bearing capacity) to the ground, or vice versa. The illustrated embodiment shows two hooks situated in alignment across the ballast block near opposing sides thereof, but the quantity and placement of hooks may vary, so long as they are collectively rated to fully bear the weight of the ballast block by such chain hoisted lifting technique.

At a spaced height above the topside of the ballast block, a weather proof, secured power box 20 is affixed to the pole 12 and features a hinge-pivoted and lockable door openable and closable about its hinge access to respectively enable and prevent access to an interior space of the box 20. The walls of the box

20, and the door thereof when closed, are sealed together in a weather-tight manner to protect the internal contents of the box from the elements. These internal components include a breaker panel 22, for example a 100 or 200 amp breaker panel with approximately twenty five breaker locations, fastened to a shield located inside the power box. One or more holes, for example four 2.5-inch holes, may be provided in a bottom wall of the power box that faces downwardly toward the topside of the ballast block to enable connection of one or more hard-wired external components or equipment to the breaker panel via the these bottom access holes of the power box, whereby the door can be left in a closed/locked condition by default at all times, regardless of whether the external components/equipment are in-use and thus requiring power from the breaker panel. The bottom access holes also enable use of one such hole as for access for an underground service feed port by which the apparatus can optionally be connected to underground power lines.

In addition to the breaker panel, the internal components of the power box include a meter base 24 to which a utility-provided meter is selectively attachable in a known manner by an authorized representative of the municipal power company or other electrical utility provider, and a local power disconnect or interrupt 26 that is manually operable to override the breaker panel. The breaker panel, meter base and disconnect may all be mounted to one or more shields that are held to an outer wall of the power box in spaced relation thereto, e.g. 1-inch, inwardly away from said outer wall, by stand offs. This will reduce the risk of any fasteners puncturing the electronic devices of the internal components if someone so happens to drill through the respective outer wall of the box. In the present embodiment, the component-carrying shield (not shown) is mounted to a rear wall of the power box, which in turns is fastened to the pole 12, as described further below. The breaker panel, meter base and manual disconnect are mounted to the shield using fasteners of lesser length than the offset space between the shield and the power box wall, for example using 3/8-inch or shorter stainless steel self-tapping screws with a 1-inch offset space, to ensure the screws don't puncture the outer wall of the power box.

In addition to the internal components contained entirely within the power box, semi-contained components of the power box include one or more standard voltage (e.g. 110V) weatherproof receptacles 28 flush mounted at a side wall of the power box facing laterally outward from the pole in a plane located ninety degrees from the plane of the power box's rear wall, and one or more high voltage (e.g. 220V) weatherproof receptacles 30 likewise flush mounted at the same, or another, side wall of the power box.

Turning to Figure 2, a power service line 32 of suitably gauged wire sized for 100 or 200 amp electrical service features connection leads that reside outside the pole 12 near the top end thereof for connection to the municipal overhead power lines maintained by the electrical utility provider. From these leads, the service line of the apparatus runs downwardly along a rear side of the pole 12 so as to reside opposite the power box 20 that is mounted to the opposing front side of the pole 12 by support brackets 34. These support brackets 34 may be defined by angle bar of aluminum or other metal welded perpendicularly across the front side of the pole for lateral support of the power box by bracing about top and bottom edges of the rear wall thereof. The service line 32 is protectively housed within a power mast 36, for example in the form of galvanised conduit located on the back side of the pole 12. A ninety degree knock-out fitting 38 attached to the bottom end of the power mast redirects the service line forwardly through a corresponding bore in the pole and into the power box via a knock-out opening in the rear wall thereof. Inside the power box, the service line connects to the breaker panel via the meter base and manual disconnect in order to deliver main power from the overhead power line to which the service line leads are connected. The utility-provided meter, once installed on the meter base, allows the power to be regulated, metered and billed to a specific address associated with the construction site at which the apparatus is used.

The forgoing components enable connection of the apparatus to municipal overhead power lines via the connection leads near the top of the pole, whereupon main power is delivered by the service line via the meter and the disconnect to the breaker panel, and further onward to the one or more standard

and/or high voltage receptacles 28, 30 wired thereto. Alternatively, an underground power line can be run to the breaker panel via the meter and the disconnect via the underground service feed port in the bottom of the power box. Any variety of plug-equipped tools and equipment can thus be powered via the receptacles from the utility power lines on a metered basis, while the heavy ballast block maintains the pole in a stable upright position atop a suitably level ground surface without requiring ground-penetration by the pole. No digging out of a post-hole is required, and installation requires only placement of the ballast block atop a selected stable ground surface using a skid steer, fork lift or other working machine that is typically already on site at early stages of construction where the initial placement of the apparatus would be desirable to enable setup of a temporary power hookup from which other tools and equipment can be run as the construction project continues. The same apparatus can be re-used at multiple different constructions sites, being easily transportable by the working machines and transport trucks of the type typically associated with construction projects. The apparatus is not dependent on roadway access to the particular ground area at which the ballast block is to be placed, as the final positioning of the ballast block is performed by a working machine capable of off-road conveyance from the roadway point to which the apparatus has been delivered by truck or trailer.

In addition to serving as a transportable, re-usable, unburied, metered power hookup station, the apparatus also includes equipment for improved construction site security, as described in further detail below with reference to Figure 1.

A security light, for example a motion activated LED flood light 36, is fastened to the pole, for example at the front side of the pole near the top end thereof. The light 36 is hardwired to the breaker panel, for example at a 15 amp breaker thereof, via the hollow interior of the pole 12 and through the rear wall of the power box. A siren or other audible alarm 38 is also carried on the pole, for example likewise being mounted to the front side thereof at a location nearer to the top end of the pole than to the block-mounted lower end thereof.

A heated weatherproof enclosure 40 is mounted to the pole, also at the front side thereof, at a greater elevation than the power box, and preferably nearer to the top end of the pole than to the block-mounted lower end thereof. In the illustrated embodiment, the heated enclosure 40 is mounted an elevation between those of the light 36 and the siren 38, the latter of which resides below the heated enclosure 40 in the illustrated embodiment. Externally mounted to an underside of the heated enclosure 40 on opposite sides of the siren is a pair (or more) of video security cameras 42, for example high-definition dome cameras with two-way audio capability. With cameras mounted to the front side of the pole by the heated enclosure, and with the service line routed down the rear of the pole in a rigid or semi-rigid power mast 36, the service line and the connection thereof to the overhead power supply lines are kept out of the viewing range of the cameras so as not to impede the camera captured images.

The heated enclosure 40 may be a powder coated steel box fastened to the pole using self-tapping stainless steel screws, featuring a hinged door with associated locking mechanism, and a set of interior electrical receptacles (e.g. two 2-gang 15-amp receptacles), which are fastened inside the enclosure 40 and hard wired to the breaker panel of the power box via the hollow interior of the pole. Within the enclosure 40, an electrical heater 44 is plugged into one receptacle socket and is operable to heat the interior space of the enclosure in cold weather conditions to ensure problem free operation of other electrical components within the same enclosure. These other internal components inside the heated enclosure are related to the other security components (light, cameras and sirens) that are located externally of the enclosure near the top end of the pole. The internal security-related components include a video recorder 46 (e.g. network video recorder) with wired or wireless connection to the cameras, and a wireless communications module 48 (e.g. GSM module) connected to the video recorder for transmission of video and audio data therefrom to remote monitoring personnel via a wireless communications network (e.g. cellular phone network) to enable 24 hour site monitoring. Each of these internal components is powered via a respective one of the internal receptacles

of the enclosure 40, any remaining one of which can be used to power any other auxiliary security devices.

The GSM module is operable to convey the video and audio captured and stored by the cameras and recorder to a remote internet server which is accessible by an authorized monitoring party via their mobile phone, tablet computer, laptop computer, desktop computer, etc. either via a web-based portal or dedicated application. The monitoring party may for example be a member of the construction company who owns or is responsible for the power pole apparatus. In the event that the cameras capture images of trespassers, would-be thieves, suspicious persons or other unauthorized parties at the construction site, the two way audio capability of the cameras enable the monitoring party to transmit an audible voice message to the apparatus, where the GSM module conveys the voice message through the NVR to the audio speakers of the cameras, which thus audibly playback the message to the unauthorized party at the construction site, for example to convey a warning message thereto. The 2-way audio functionality enables conversational exchange between the monitoring party and anyone present at the constructions site, whether authorized personnel or otherwise. While the present embodiment is described as incorporating the 2-way audio functionality into the cameras, separate audio equipment may alternatively be employed for such purpose. The siren, through the NVR is also connected to the GSM module to enable remote controlled operation of the siren via incoming commands received by the GSM module from the monitoring party's mobile phone, monitoring station or computer.

The apparatus thus not only provides power to construction site tools and equipment on a metered basis from the municipal power utility provider, but also provides improved security on the construction site to deter potential worksite trespass and theft (e.g. using the motion activated light, remote controllable siren, audible warning messages, video capture capability), and/or to enable investigation of such trespass or theft, should they nonetheless occur, based on the captured video images. Since the metered power from the overhead utility lines are used, none of these security functions require reliance on battery powered security devices that are

either prone to failure as battery levels are depleted, or rely on suitable placement and sunlight conditions for solar powered operation along with unstable or costly generators.

With the power box securely locked, and all security components placed higher up on the pole at elevations generally inaccessible to trespassers, thieves or vandals who might otherwise try to damage or disconnect such equipment, reliable operation of the security equipment is optimally maintained. Additionally, placement of the video cameras and siren at or adjacent the underside of the security equipment enclosure 40 allows the enclosure to serve as an overhanging weather shield that guards the cameras and siren from direct overhead exposure to rainfall and snow accumulation that might otherwise fall upon these components if mounted in more exposed positions.

For electrical protection, a ground wire connector clip 50 is attached to the support plate 16 in electrically conductive contact therewith for connection of a grounding wire thereto so that the grounding wire can be buried in the ground, e.g. at least 3ft deep, near the ballast block. This way, any electrical short causing electrification of the enclosure, power box, mast, pole and support plate can be safely conducted to ground. With reference to Figure 2, a cable tie hook 52 is provided at the rear of the pole near the top of the power mast to act as a support hook for the municipal power line tie cables that are used to connect the service line leads to the overhead power lines, thus helping keep the tie cables elevated out of the viewing range of the cameras situated further down the pole, and less susceptible to wind loads.

Figure 3 shows a ladder stabilizer 54 selectively attachable to the top end of the pole to provide stabilization to a straight ladder used by the power utility personnel to access the service line connection leads near the top of the pole during connection of the apparatus to the overhead power lines once the apparatus has been erected at the construction site. The device is generally referred to herein as a stabilizer, as it provides improved stability to the ladder relative to mere leaning of the ladder directly against a side of the pole itself, but the specifically illustrated

embodiment may also be referred to as a ladder hanger, as a straight ladder can be hung from the illustrated embodiment by one of the ladder's rungs.

The stabilizer/hanger 54 of the illustrated embodiment features a square central plate 56, for example of aluminum or other metal. On a topside of the central plate, a first pair of double ended hooks 58 are welded or otherwise affixed to the central plate in positions lying parallel to one another at two opposing edges of the central plate's square shape. At the underside the central plate, a second pair of double ended hooks 60 are welded or otherwise affixed to the central plate in positions lying parallel to one another at the other two edges of the central plate's square shape. Accordingly, the top hooks 58 and bottom hooks 60 lie perpendicularly cross-wise to one another. Each hook 58, 60 features a flat bar-like central span 62, with a U-shaped cradle 64 at each end of the bar. The cradles 64 are situated outwardly beyond the perimeter of the central plate, and due to the cross-wise relation between the two pairs of hooks 58, 60, two cradle's reside at each of the central plate's four sides. When the stabilizer/hanger is attached to the pole, the four cradles reside outwardly beyond the pole's periphery, with two cradles situated on each of the pole's four sides.

The central plate of the stabilizer/hanger features a hexagonal through hole 66 at the center thereof, which is sized to fit over a hexagonal lug nut 68 welded to the pole 12 at a centered position on the top end thereof. Accordingly, to install the stabilizer/hanger, the hexagonal hole in the central plate is slipped over the nut at the top of the pole, whereby the central plate is seated on the pole's top end while the matching non-circular shapes of the central plate's through-hole and the pole's lug nut prevent relative rotation of the hanger/stabilizer about the central axis of the pole. The nut has a threaded bore aligned over a matching bore in the otherwise closed upper end of the pole, so that once the stabilizer/hanger is seated on the closed upper end of the pole, a bolt 70 with a head diameter greater than the lug nut 66 and matching stabilizer through-hole 66 can be threaded into the nut into a lock-down position over the central plate of the stabilizer/hanger in order to prevent the stabilizer/hanger from being able to slide back up off the nut. The cooperating

straight-sided hexagonal shapes of the pole's lug nut and the stabilizer's through-hole formed a keyed connection between the pole and stabilizer that prevents rotation therebetween, and automatically aligns the stabilizer relative to the pole so that two of the hook cradles 64 reside on each of the pole's four sides.

With the cradles 64 of the double-ended hooks 58, 60 situated outward from the pole at the top end thereof, the two aligned hook cradles at a given side of the pole are available for seating of an upper ladder rung within them, whereby the remainder of the ladder can hang downwardly from the stabilizer/hanger at a sloped angle down to the ground level. With the upper rung seated in the two cradles, the upper end of the ladder ladder is preventing from tilting laterally or pulling outwardly away from the pole, thus providing the ladder with a firmly stable working position while the power utility worker connects the service line leads of the apparatus to the overhead power lines. While the illustrated embodiment conveniently uses a nut and hexagonal hole to provide the self-aligning, rotation-blocking keyed connection between the pole and the ladder stabilizer/hanger, it will be appreciated that other straight-sided or irregular shapes may similarly be used for the mating components of the pole and stabilizer to accomplish a keyed connection therebetween.

To temporarily provide main power and site security at a construction site that is as yet unserviced by a permanent power meter installation connected to municipal overhead or underground power lines of the power utility provider, a responsible party associated with the construction project delivers the apparatus to the construction site. For space efficiency, the apparatus may be stored and transported in a partially unassembled state, i.e. with the pole detached from the ballast block, but with the all the pole-carried components remaining pre-mounted on the pole. Accordingly, the responsible party uses a skid steer, fork lift or other working machine to raise the ballast block up using the lift hooks 18 and one or more hoisting chains. The working machine is used to lift the ballast block onto or into the truck, trailer or other road vehicle of sufficient weight capacity from at a storage location where the apparatus is kept when not required at a construction site.

The separate pole 12, optionally made of lightweight but sufficiently strong aluminum, and the attached power and security components are likewise lifted onto the truck, trailer or other road vehicle, whether manually by one or more workers or using the same or a different working machine or lifting equipment than that used to load the ballast block onto the road transport vehicle. The ballast block and pole are strapped down or otherwise secured in their loaded positions on the road transport vehicle, which is then driven to the destination construction site. Here, a working machine is used to unload the ballast block from the road transport vehicle, and convey the ballast block to the intended placement spot at the construction site, which may be an off-road area not directly accessible to the road transport vehicle. The road transport vehicle used to transport the ballast block and the pole may be a same road transport vehicle that is also used to simultaneously transport the working machine to the construction site, in which case the same working machine may be used for both the loading and unloading stages.

At the constructions site, with the ballast block now placed on a suitable horizontal ground surface at the selected placement location, the pole is then fastened in place to the topside of the ballast block. The stabilizer/hanger is preferably pre-attached to the top end of the pole before transport, and preferably has the same outer dimensions as the support plate 16 so that the outer ends of the rung cradles 64 lie in matching planes to the outer perimeter edges of the support plate 16. This way, placement of the pole rear-side down on the cargo bed of the road transport seats the rear edge of the support plate and the rear pair of rung-cradles on the cargo bed in order to carry the pole in a level orientation to the cargo bed at a short height thereabove. However, in the event that the stabilizer/hanger wasn't pre-assembled to the now-erected pole, an A-frame ladder may be used by the responsible party to gain safe access to the top of the pole due to the self-stabilizing structure of an A frame ladder that need not rely on a leaned position against the pole.

At this point, with the ballast block placed and the pole erected, the responsible party contacts the power utility company to request hook up of the apparatus to the overhead or underground power lines, if a scheduled hook up had

not already been previously arranged. The power utility worker arrives at the construction site, performs any necessary inspection of the erected apparatus, and installs the power meter to the meter base in the power box. If connecting to overhead power lines, the worker hooks a rung of their extension ladder, or non-extendable straight ladder, into the cradles of the ladder stabilizer/hanger at a selected side of the pole, and climbs the ladder to access the connection leads at the top end of the pole. Here, the power utility worker then connects these leads to the overhead lines using suitable tie cables, which can be secured to cable tie hook 52. The apparatus is then ready for use, with the power consumed thereby thus being metered through the power utility company's meter, and billed to the site owner accordingly.

Now hooked up to the utility power lines, the apparatus serves to provide both metered power and security features to the construction site until the construction project is completed, or at least partially completed to a stage at which a permanent meter installation is setup, thereby removing the need for temporary power. At such time, the apparatus is disconnected from the utility power lines and utility-provided meter is removed from the apparatus, at which point the pole can be disconnected from the ballast block, and the apparatus once again loaded onto a road transport vehicle in the same manner described above. From here, the apparatus is ready for transport to either another construction site at which temporary power is required, or to a storage location at which it is intended to be stored between uses.

Since various modifications can be made in my invention as herein above described, and many apparently widely different embodiments of same made, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

CLAIMS:

1. A mobile power pole apparatus for providing metered electrical power to a site from overhead power lines of an electrical utility provider, said apparatus comprising:

a pole assembly comprising:

a freely liftable, transportable, above-ground ballast block having an underside for unburied seating atop a ground surface at a selected placement location at said site, and a topside lying opposite said underside; and

a upright pole attached or attachable to said ballast block in a working position standing upwardly away from the topside thereof;

a service line comprising connection leads situated at or proximate a top end of the upright pole for selective coupling to the overhead power lines;

a power meter base carried on the pole assembly and in electrical communication with said service line for coupling of a power meter to said meter base in a manner operable to meter power conveyed through said service line from the overhead power lines;

a breaker panel carried on the pole assembly and connected to the service line via the power meter base to receive metered powered from the service line;

a selectively operable disconnect installed on the service line in series with the power meter and breaker panel at a location between the breaker panel and the connection leads;

at least one power receptacle fed by said service line via said meter base, disconnect and breaker panel to enable powering of one or more electrical devices by the overhead power lines;

wherein the ballast block is liftable onto and off of a road transport vehicle, and lowerable therefrom into a seated position atop the ground surface in non-buried relation thereto to stabilize the upright pole in upstanding relation to said ground surface in non-buried relation thereto at the selected placement location.

2. The apparatus of claim 1 further comprising one or more security

devices installed on the pole assembly.

3. The apparatus of claim 2 wherein at least one of said one or more security devices is mounted to the pole assembly at a greater elevation than the at least one power receptacle.

4. The apparatus of claim 2 or 3 wherein at least one of said security devices is mounted to the pole assembly at a greater elevation than said meter base.

5. The apparatus of any one of claims 2 to 4 wherein at least one of said one or more security devices is motion-activated.

6. The apparatus of any one of claims 2 to 4 wherein said one or more security devices comprises a light source.

7. The apparatus of claim 6 wherein said light source comprises a motion activated light source.

8. The apparatus of claim 6 or 7 wherein said light source comprises a flood light.

9. The apparatus of any one of claims 2 to 8 wherein said one or more security devices comprises one or more cameras.

10. The apparatus of claim 9 comprising a recorder operably connected to said one or more cameras to record images captured thereby.

11. The apparatus of claim 9 or 10 wherein the service line is routed along a side of the upright pole opposite said one or more cameras outside a viewing range thereof.

12. The apparatus of any one of claims 2 to 11 wherein at least one of said one or more security devices is overhung by a protective component.

13. The apparatus of claim 12 wherein said protective component comprises a weather-proof enclosure containing one or more internal security-related components operatively coupled to said one or more security devices.

14. The apparatus of any one of claims 2 to 13 comprising a weather-proof enclosure supported on the upright pole and containing internal security-related components operatively coupled to said one or more security devices.

15. The apparatus of claim 14 wherein said one or more internal security-related components comprise a wireless communications module for transmitting images captured by said one or more security devices to one or more authorized monitoring personnel.

16. The apparatus of claim 14 or 15 wherein said one or more internal security-related components comprise an image recorder for storing images captured by said one or more security devices.

17. The apparatus of any one of claims 12 to 16 comprising a heater operable to heat an interior space of said weather-proof enclosure.

18. The apparatus of any one of claims 12 to 17 comprising one or more interior power receptacles inside said weather-proof enclosure for powering of said one or more internal security-related components thereby.

19. The apparatus of any one of claims 2 to 18 wherein said one or more security devices comprise an audible alarm.

20. The apparatus of any one of claims 2 to 19 wherein at least one of the one or more security devices are wired for powering thereof via the service line, the disconnect, the meter base, and the breaker panel..

21. The apparatus of any one of claims 1 to 20 comprising lifting hooks affixed to the ballast block for machine-driven lifting thereof.

22. The apparatus of claim 21 wherein the lifting hooks are embedded within said ballast block.

23. The apparatus of claim 22 wherein said lifting hooks have upper ends of inverted U-shape, and lower ends which are embedded in the ballast block.

24. The apparatus of any one of claims 1 to 23 wherein the ballast block is concrete.

25. The apparatus any one of claims 1 to 24 comprising a ladder stabilizer mounted or mountable to the upright pole at or proximate the top end thereof for use in positioning and stabilizing a ladder against the apparatus to access the connection leads during connection of the apparatus to the overhead power lines.

26. The apparatus of claim 25 wherein the ladder stabilizer is multi-

sided to provide ladder support at multiple side of said upright pole.

27. The apparatus of claim 25 or 26 comprising a keyed connection between the upright pole and the ladder stabilizer to prevent relative movement therebetween.

28. The apparatus of any one of claims 25 to 26 wherein said ladder stabilizer comprises at least one rung-hook for hooked engagement with a rung of said ladder.

29. The apparatus of claim 28 wherein said at least one rung-hook comprises multiple hooks spanning in different directions for use on different sides of the said upright pole.

30. The apparatus of claim 28 or 29 wherein said at least one rung-hook comprises multiple rung hooks having rung-accommodating cradles arranged in paired sets on different sides of the pole.

31. A method of using the apparatus of any one of claims 1 to 30 comprising transporting the ballast block to the site on a transport vehicle, using a working machine to lift the ballast block from said transport vehicle onto the ground surface at the selected placement site, using said placed ballast block to support the upright pole in the working position standing upwardly away from the ballast block.

32. The method of claim 31 wherein said site is a construction site, and after completion of a construction phase during which temporary power is required at said construction phase, loading the ballast block onto the same or another transport vehicle using the same or another working machine, and transporting the apparatus from said construction site to another location.

33. The method of claim 31 or 32 comprising lifting the ballast block from the transport vehicle onto the ground surface at the selected placement site with the upright pole detached from said ballast block, and subsequently attaching said upright pole to the ballast block in the working position thereon.

34. The method of any one of claims 31 to 33 comprising lifting the ballast block using a loader.

35. The method of claim 34 wherein the loader is a skid steer loader.

36. The method of any one of claims 31 to 33 comprising lifting the ballast block using a forklift.

37. The method of any one of claims 31 to 36 comprising lifting the ballast block from above so as to suspend the ballast block from a lifting implement of the working machine during transfer of the ballast block from the transport vehicle to the ground surface.

38. The method of claim 37 comprising lifting the ballast block using embedded lifting hooks permanently affixed thereto.

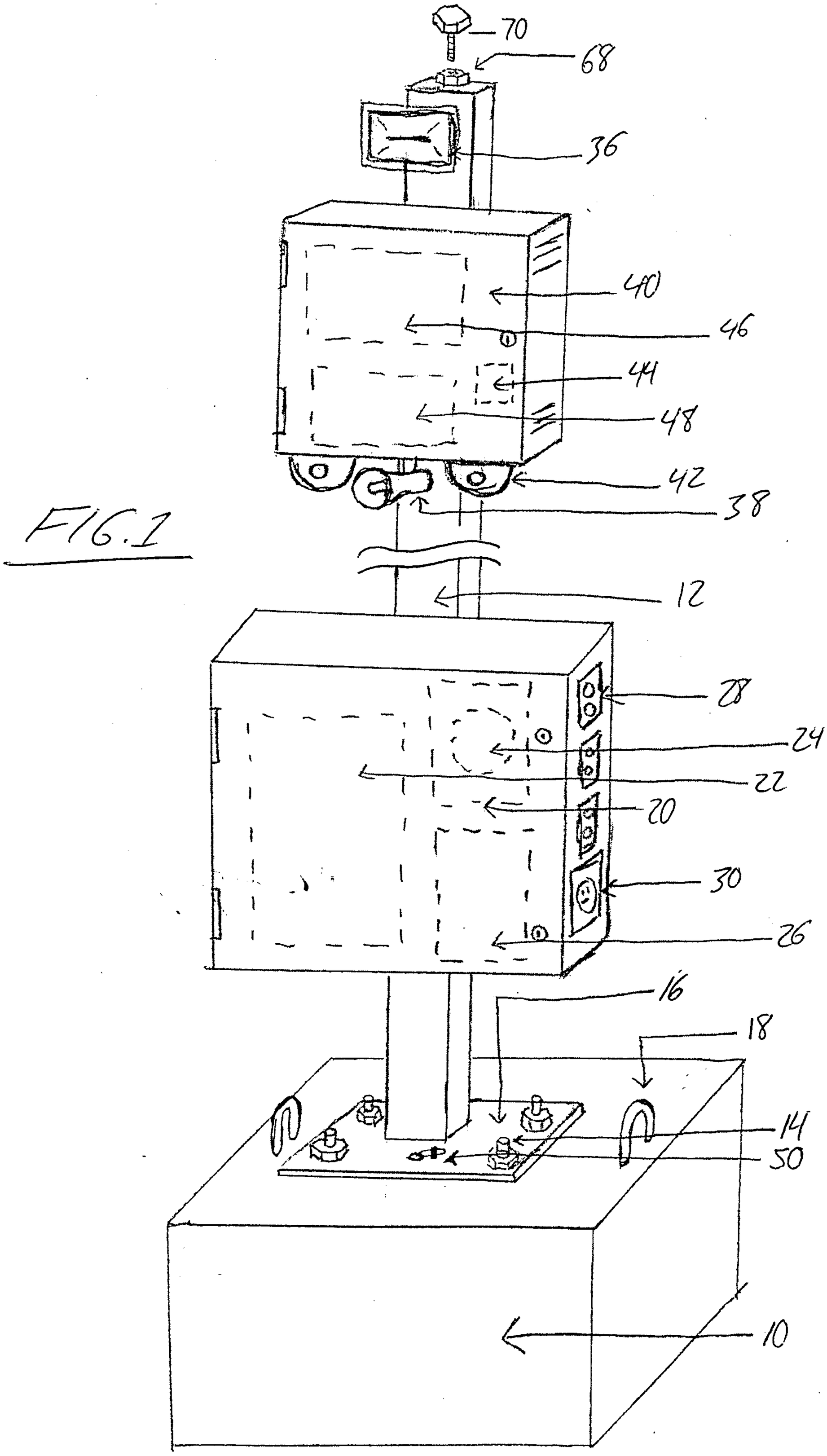



FIG. 1

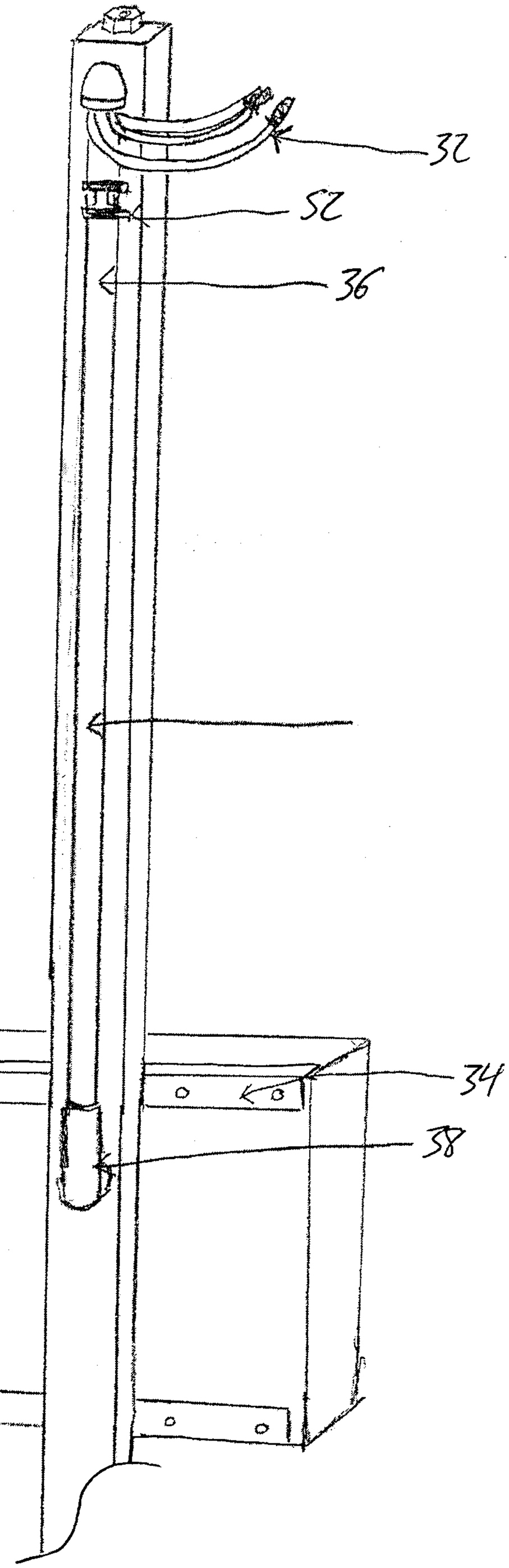
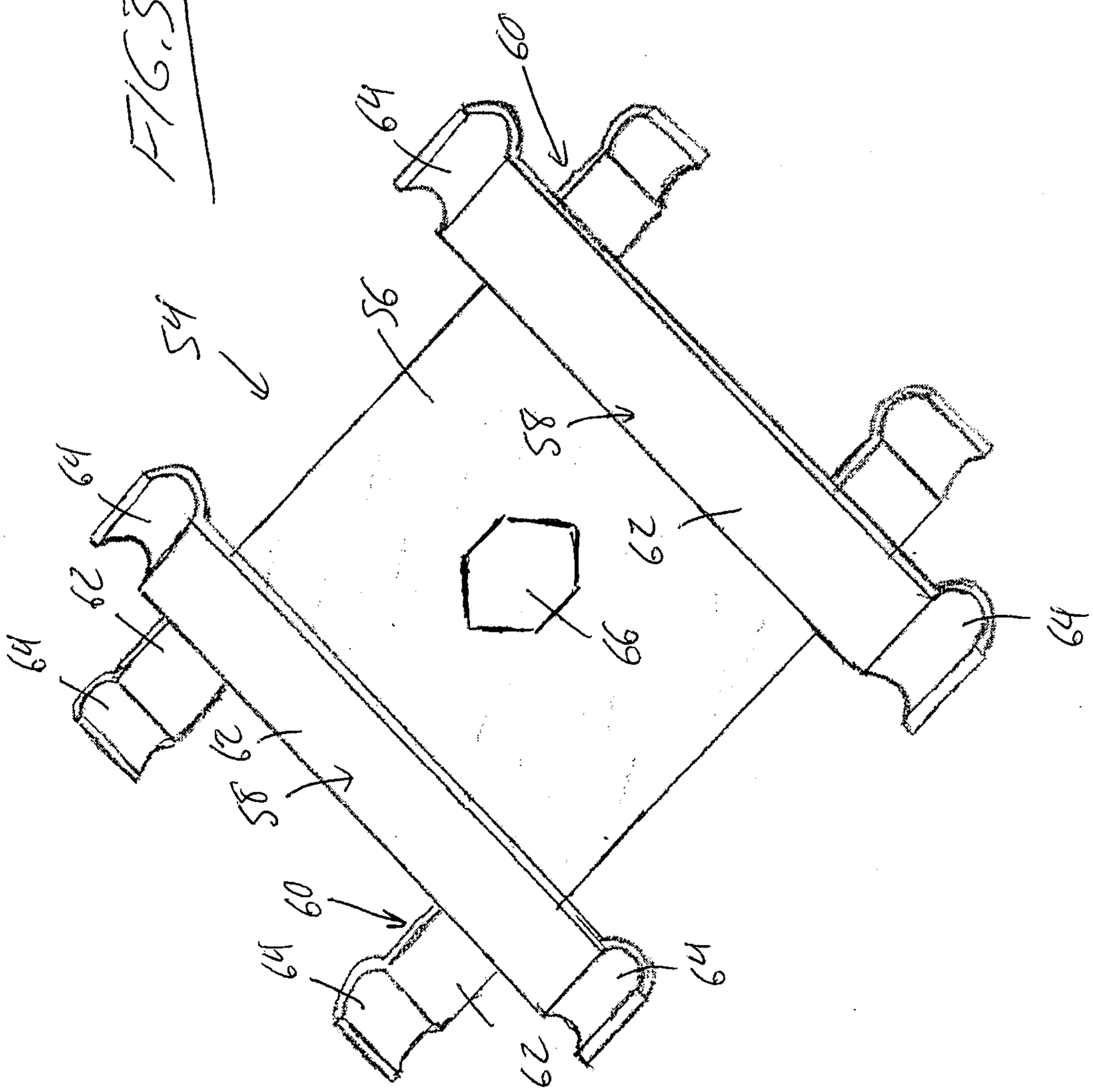
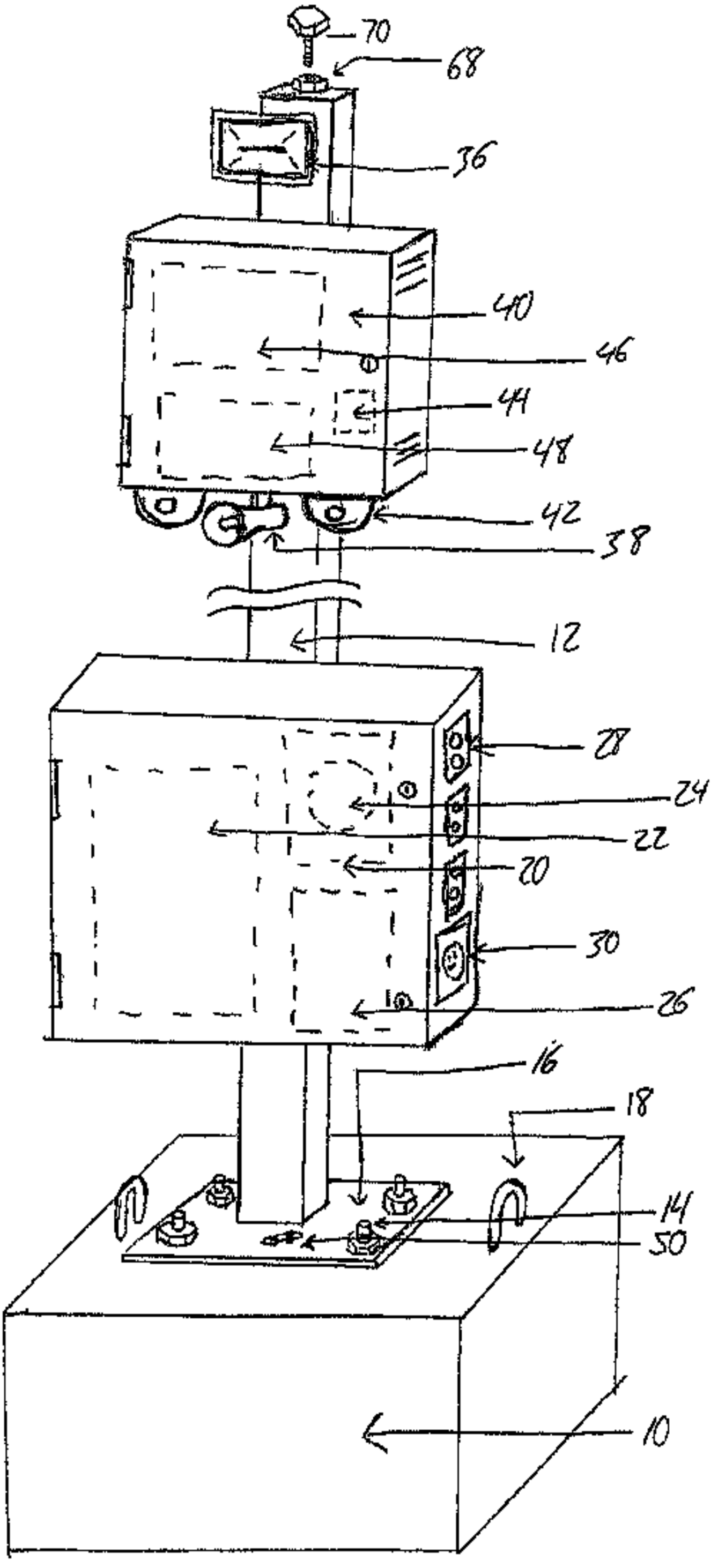



FIG.2

FIG. 3

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