PLEASE UNDERSTAND CLEARLY THAT THIS PRESENTATION MUST NOT BE THOUGHT OF AS ENCOURAGEMENT THAT YOU SHOULD ATTEMPT TO CONSTRUCT ANYTHING SHOWN OR DISCUSSED HERE, AS THIS PRESENTATION IS FOR INFORMATION PURPOSES ONLY.

WE LIVE SURROUNDED BY AN ENERGY FIELD OF EFFECTIVELY UNLIMITED POWER. WE CAN ACCESS THAT POWER FOR OUR OWN USE IN TWENTY DIFFERENT WAYS. A COPY OF THIS BRIEF INTRODUCTION CAN BE DOWNLOADED FREE FROM:

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AS HAS ALREADY BEEN DISCUSSED, IT IS PERFECTLY POSSIBLE TO DRAW ENERGY FROM AN AERIAL / EARTH COMBINATION. YOU DON'T WANT TO HAVE A TUNED CIRCUIT LIKE A RADIO RECEIVER AS THAT RESTRICTS THE POWER TO LESS THAN THAT OF A RADIO STATION. INSTEAD, YOU WANT A WIDEBAND RECEPTION WHICH PULLS IN POWER FROM THE SUN-CHARGED IONOSPHERE AND FROM THE 200 LIGHTNING STRIKES PER SECOND AROUND THE WORLD. THERE ARE MANY EXCELLENT DESIGNS FROM DEVELOPERS SUCH AS JES ASCANIUS, ALEXKOR AND DRAGAN KLJAJIC. A BASIC RECEPTION MODULE CAN BE :



JES ASCANIUS USES A SHINY, INSULATED METAL PLATE ACTS AS A GOOD RECEIVER ANTENNA:



THIS ALUMINIUM PLATE IS 800 x 600 x 2 mm AND IS SUSPENDED INSIDE THE ATTIC WHERE JES LIVES. HE BUILT HIS RECTIFIER MODULES USING SALVAGED PARTS WHICH IS WHY HIS CAPACITORS ARE SO VERY LARGE.

THE RECEPTION MODULES "M" ARE IDEALLY CONNECTED HALF WAY BETWEEN THE AERIAL AND THE EARTH AND THEY CAN BE ADDED LIKE THIS :



GERMANIUM DIODES ARE NORMALLY USED AND THE BASIC RECEPTION MODULE CAN BE IMPROVED LIKE THIS :



THIS ARRANGEMENT DOUBLES THE OUTPUT FOR EACH MODULE. DRAGAN PUT 100 OF THE ORIGINAL MODULES TOGETHER ON TWO BOARDS LIKE THIS AND GOT 100 WATTS OUTPUT FROM THEM :



THE ALEXKOR AERIAL SYSTEM

ALEXKOR ALSO USES AN AERIAL TO CHARGE BATTERIES IN THE 1.5-VOLT TO 6-VOLT RANGE. HIS AERIAL IS MAINLY HORIZONTAL :



THE LONGER THE AERIAL OR THE GREATER THE NUMBER OF AERIALS USED, THE GREATER THE RATE OF CHARGING. IT IS SUGGESTED THAT THE AERIAL IS CONNECTED BETWEEN THE EAVES OF A HOUSE AND A NEARBY TREE. THE AERIAL WIRE SHOULD BE 0,5 mm DIAMETER OR THICKER AND IT NEEDS TO BE INSULATED FROM ITS SUPPORTS – PLASTIC CORD CAN BE USED FOR THAT.

A MORE POWERFUL VERSION OF HIS CIRCUIT WHICH CAN CHARGE 12-VOLT BATTERIES IS :



WITH A GOOD AERIAL, THE VOLTAGE ON CAPACITOR "C1" BUILDS UP UNTIL THE VOLTAGE AT POINT "B" GETS SO HIGH THAT THE NEON FIRES, DUMPING THE CHARGE ON CAPACITOR "C1" INTO THE BATTERY, CHARGING IT.

HOWEVER, LAWRENCE RAYBURN OF CANADA DEVELOPED A MUCH MORE POWERFUL AERIAL SYSTEM WHICH HE CALLS THE "TREC". IT GATHERS 10 KILOWATTS OF POWER AND WITH THAT LEVEL OF POWER FLOWING IN THE CIRCUIT, IT IS POTENTIALLY DANGEROUS FOR PEOPLE WHO ARE NOT FAMILIAR WITH WORKING WITH HIGH-POWER HIGH-VOLTAGE CIRCUITS.

THIS AERIAL SYSTEM HAS TWO FOUR-FOOT (1220 mm) DIAMETER ARCHAMEDIAN SPIRALS MADE FROM 0.75 INCH DIAMETER SOFT COPPER PIPE. EACH SPIRAL IS SANDWICHED BETWEEN TWO SHEETS OF "LEXAN" PLASTIC AND THEY ARE MOUNTED THIRTY FEET APART VERTICALLY.

THE OBJECTIVE IS TO CREATE A TUNED PATH TO THE IONOSPHERE AND SO DRAW DOWN SOME OF THE MASSIVE AMOUNT OF EXCESS POWER THERE. THERE IS A SPARK GAP AND MULTIPLE TUNING COILS AND VOLTAGES OF 600 VOLTS GET GENERATED IN THE CIRCUIT BEFORE THE OUTPUT IS ADJUSTED TO WHAT IS CONVENIENT.

A SUBSTANTIAL EARTHING PLATE OF AT LEAST SIXTEEN SQUARE FEET IS NEEDED AND WIRE WHICH IS ABLE TO CARRY SERIOUS LOADS HAS TO BE USED. A SIGNAL GENERATOR IS USED TO MODULATE THE POWER AND GIVE THE DESIRED MAINS FREQUENCY. THE CIRCUIT IS LIKE THIS :



THIS CIRCUIT IS HIGH POWER AND IT COULD KILL YOU, JUST AS YOUR MAINS WALL SOCKET CAN KILL YOU. THIS IS NOT A RECOMMENDATION THAT YOU SHOULD TRY TO BUILD ANY SUCH DEVICE.

HOWEVER, THIS INFORMATION, USEFUL AS IT IS, IS A VERY LONG WAY FROM EVERYTHING WHICH CAN BE KNOWN ABOUT THE SUBJECT OF A LOW POWER HIGH VOLTAGE SOURCE. FOR EXAMPLE, THE "THESTATICA" MACHINE DESIGNED BY PAUL BAUMANN OF SWITZERLAND IS A SELF-POWERED 3 KILOWATT OUTPUT GENERATOR WHICH USES THE ELECTROSTATIC OUTPUT OF A WIMSHURST MACHINE AS ITS INPUT.



THE IMPORTANT POINT TO NOTE IS THAT THE WIMSHURST MACHINE USED BY PAUL BAUMANN IS SELF ROTATING DUE TO THE MOTOR STRIPS ANGLED AT 45 DEGREES. THE ROTATION IS APPROXIMATELY 60 RPM OR ONCE PER SECOND. IN 1991, DON KELLY STATED THE "SWISS M-L CONVERTER" IS A FULLY SYMMETRICAL, INFLUENCE-TYPE ENERGY CONVERTER WHICH IS BASED ON THE WIMSHURST ELECTROSTATIC GENERATOR WITH ITS TWIN COUNTER-ROTATING DISCS WHERE METALLIC FOIL SECTORS GENERATE AND CARRY SMALL CHARGES OF ELECTRICITY TO BE STORED IN MATCHING CAPACITORS. IN WIMSHURST UNITS, DIAGONAL NEUTRALISING BRUSHES ON EACH OPPOSITE DISC DISTRIBUTE THE CORRECT CHARGES TO THE SECTORS AS THEY REVOLVE, BUT IN THE M-L CONVERTER THIS IS CARRIED OUT BY A CRYSTAL DIODE WHICH HAS A HIGHER EFFICIENCY. THE TWO DISCS ARE MADE OF ACRYLIC AND THE METALLIC SEGMENTS ARE STEEL AND THE ELECTROMAGNETIC CONVERSION IS MADE AT THE RIM THROUGH PASSIVE ELECTROMAGNETS.

THE SELF-PROPULSION AFTER HAND STARTING THE DISCS IS ACHIEVED THROUGH THE POGGENDORFF PRINCIPLE IN WHICH SLANTED CONDUCTIVE BRUSHES PRODUCE SELF-ROTATION IN ELECTROSTATIC MOTORS (BUT NOT GENERATORS).

ANOTHER GERMAN, HERMANN PLAUSON, PRESENTS A GREAT DEAL OF PRACTICAL INFORMATION IN HIS 1925 PATENT US1,540,998 "CONVERSION OF ATMOSPHERIC ELECTRIC ENERGY". HERMANN DESCRIBES A SYSTEM WITH 100 KILOWATTS OF OUTPUT AS A "SMALL" SYSTEM, BUT A SYSTEM OF THAT SIZE WILL ALMOST CERTAINLY HAVE MANY AERIALS PROVIDING THE INPUT. HE SAYS: "THE STATIC ELECTRICITY WHICH RUNS TO EARTH THROUGH AERIAL CONDUCTORS IN THE FORM OF DIRECT CURRENT OF VERY HIGH VOLTAGE AND LOW CURRENT STRENGTH IS CONVERTED INTO ELECTRO-DYNAMIC ENERGY IN THE FORM OF HIGH FREQUENCY VIBRATIONS".



Fig.1 SHOWS A SIMPLE METHOD FOR CONVERTING STATIC ELECTRICITY INTO DYNAMIC ENERGY OF A HIGH NUMBER OF OSCILLATIONS. FOR THE SAKE OF CLARITY, A WIMSHURST MACHINE IS SHOWN AS THE INPUT RATHER THAN AN AERIAL ANTENNA.

ITEMS 13 AND 14 COLLECT THE STATIC ELECTRICITY, 7 AND 8 ARE SPARK-DISCHARGING ELECTRODES, 5 AND 6 ARE CAPACITORS AND 9 IS THE PRIMARY WINDING OF A STEP-DOWN TRANSFORMER. EACH SPARK GENERATES A LOWER VOLTAGE HIGHER CURRENT OUTPUT THROUGH 10, THE OUTPUT TRANSFORMER SECONDARY WINDING.

IN 1925 THERE WILL HAVE BEEN VERY FEW AIRCRAFT AND SO, TALL AERIALS WOULD NOT HAVE BEEN CONSIDERED A HAZARD. HERMANN CLEARLY HAD TALL AERIALS IN HIS INSTALLATIONS.



Fig.2 SHOWS AERIAL INPUT AND TWO SPARK GAPS IN PARALLEL ARE USED – THE WORKING GAP 7 AND THE MULTIPLE SPARK GAP SHOWN IN BLUE WHICH IS A SAFETY DEVICE AGAINST EXCESSIVE VOLTAGE. WITHOUT THIS SECOND SPARK GAP IT IS IMPOSSIBLE TO GATHER LARGE QUANTITIES OF ELECTRICAL ENERGY. SPECIAL MOTORS ADAPTED FOR WORKING WITH STATIC ELECTRICITY OR HIGH FREQUENCY OSCILLATIONS CAN BE CONNECTED AS AT POSITION 2 – 3.

THERE IS, OF COURSE, ALWAYS THE POSSIBILITY OF DIRECT OR NEARBY LIGHTNING STRIKES, AND SO CHOKING COILS IN THE AERIAL CONNECTION ARE USED:



THESE ARE SHOWN AS "S" IN Fig.3 AND THE CORE IS MADE WITH THE THINNEST POSSIBLE SEPARATE LAMINATIONS. IN PLACES WHERE THUNDERSTORMS ARE FREQUENT, SEVERAL SUCH CHOKE COILS MAY BE CONNECTED IN SERIES OR IN SERIES PARALLEL. IDEALLY, THE CHOKE WINDING SHOULD BE MADE UP USING SEVERAL THIN PARALLEL WIRES WHICH TOGETHER MAKE UP THE NECESSARY CROSS-SECTIONAL AREA OF WIRE.

Fig.3 SHOWS THE MOST SIMPLE WAY OF CONVERTING ATMOSPHERIC ELECTRICITY INTO ELECTROMAGNETIC WAVE ENERGY BY THE USE OF STATIC-ELECTRICITY MOTORS :



THE POSITIVE ATMOSPHERIC ELECTRIC CHARGE COLLECTED BY THE AERIAL TENDS TO COMBINE WITH THE NEGATIVE ELECTRICITY CONNECTED VIA THE EARTH WIRE. IT TRAVELS THROUGH THE AERIAL AND CHOKE "S", FLOWING IN THE SAME DIRECTION AS THE DIRECT CURRENT. THE MOTOR "M" PROVIDES THE CAPACITANCE, INDUCTANCE AND RESISTANCE WHICH ARE NECESSARY FOR CONVERTING STATIC ELECTRICITY INTO ELECTROMAGNETIC WAVE ENERGY.



IN Fig.4, SPARK GAP 7 IS SHUNTED ACROSS CAPACITORS 5 AND 6 FROM THE MOTOR "M" AND THIS PROVIDES IMPROVED OVER-VOLTAGE PROTECTION FOR THE MOTOR AND UNIFORM EXCITATION THROUGH SPARK GAP 7.



Fig.5 SHOWS AN ARRANGEMENT FOR PRODUCING LARGE CURRENTS WHICH CAN BE USED DIRECT WITHOUT MOTORS, TO PROVIDE HEATING AND LIGHTING. THE MAIN DIFFERENCE HERE IS THAT THE SPARK GAP CONSISTS OF A STAR-SHAPED DISC 7 WHICH CAN ROTATE ON ITS OWN AXIS AND WHICH IS ROTATED BY A MOTOR 7A (NOT SHOWN) INSIDE SIMILARLY SHAPED OUTER ELECTRODES. WHEN THE STAR POINTS FACE EACH OTHER, DISCHARGES TAKE PLACE, FORMING AN OSCILLATION CIRCUIT WITH THE CAPACITORS 5 AND 6. THE LOAD IS CONNECTED ACROSS INDUCTOR 9.



Fig.6 SHOWS HOW THE OSCILLATION CIRCUIT MAY HAVE A MOTOR CONNECTED VIA A VARIABLE INDUCTOR ("REHOSTAT") TO IT. THE MOTOR OPPOSES ANY EXCESS VOLTAGES WHICH MIGHT BE APPLIED TO THE MOTOR. BY ADJUSTING THE REHOSTAT, OPTIMUM MOTOR PERFORMANCE CAN BE ACHIEVED FOR ANY PARTICULAR AERIAL.



Fig.10 SHOWS A MOTOR CIRCUIT WITH PURELY INDUCTIVE COUPLING. THE MOTOR IS CONNECTED TO THE SECONDARY 10 OF THE TRANSFORMER AS CAN BE SEEN IN Fig.11 IN A SOMEWHAT MODIFIED CIRCUIT. THE SAME APPLIES TO THE CIRCUIT OF Fig.12.

THE CIRCUIT DIAGRAMS SHOWN SO FAR ALLOW MOTORS OF LOW TO MEDIUM STRENGTH TO BE OPERATED. FOR LARGE SYSTEMS, HOWEVER, THEY ARE TOO INCONVENIENT AS THE CONSTRUCTION OF TWO OR MORE OSCILLATION CIRCUITS FOR LARGE AMOUNTS OF ENERGY IS DIFFICULT, THE GOVERNING IS STILL MORE DIFFICULT AND THE DANGER IN SWITCHING ON OR OFF IS GREATER.



Fig.13 SHOWS A MEANS FOR OVERCOMING SUCH DIFFICULTIES. THE OSCILLATION CIRCUIT SHOWN HERE RUNS FROM POINT "x" OVER CAPACITOR 5, VARIABLE INDUCTOR 9, SPARK GAP 7 AND THE TWO SEGMENTS 3a AND 4a FORMING THE ARMS OF A WHEATSTONE BRIDGE, BACK TO x. IF THE MOTOR IS CONNECTED BY BRUSHES 3 AND 4 TRANSVERSELY TO THE TWO ARMS OF THE BRIDGE AS SHOWN IN Fig.13, ELECTROMAGNETIC OSCILLATIONS OF EQUAL SIGN ARE INDUCED IN THE STATOR SURFACES 1 AND 2 AND THE MOTOR DOES NOT REVOLVE. IF HOWEVER, THE BRUSHES 3 AND 4 ARE MOVED IN COMMON WITH THE CONDUCTING WIRES 1 AND 2 WHICH CONNECT THE BRUSHES TO THE STATOR POLES, A CERTAIN ALTERATION OR DISPLACEMENT OF THE POLARITY IS ACHIEVED AND THE MOTOR STARTS TO REVOLVE.

THE MAXIMUM ACTION WILL RESULT IF ONE BRUSH 3 COMES ON THE CENTRAL SPARKING CONTACT 7 AND THE OTHER BRUSH 4 ON THE PART x. IN PRACTICE HOWEVER, THEY ARE USUALLY BROUGHT ON TO THE CENTRAL CONTACT 7 BUT ONLY HELD IN THE PATH OF THE BRIDGE SEGMENTS 4a AND 3a IN ORDER TO AVOID CONNECTING THE SPARK GAPS WITH THE MOTOR OSCILLATION CIRCUIT.



AS THIS PREVENTS THE WHOLE OF THE OSCILLATION ENERGY ACTING ON THE MOTOR, IT IS BETTER TO ADOPT THE MODIFICATION SHOWN IN Fig.14 WHERE THE MOTOR IS NOT DIRECTLY WIRED TO THE SEGMENTS OF THE COMMUTER, BUT INSTEAD IT IS WIRED TO SECONDARY COIL 10 WHICH RECEIVES INDUCED FROM PRIMARY COIL 9. THIS ARRANGEMENT PROVIDES A GOOD TRANSFORMING ACTION, A LOOSE COUPLING AND AN OSCILLATION CIRCUIT WITHOUT A SPARK GAP.



IN Fig.15, THE MOTOR IS WIRED DIRECTLY TO THE PRIMARY COIL AT x AND x1 AFTER THE PRINCIPLE OF THE AUTO-TRANSFORMER.



IN Fig.16, INSTEAD OF AN INDUCTOR, CAPACITOR 6 REPLACES THE INDUCTANCE AND IS INSERTED BETWEEN SEGMENTS 3a AND 4a. THIS HAS THE ADVANTAGE THAT THE SEGMENTS 3a AND 4a NEED NOT BE MADE OF SOLID METAL BUT MAY CONSIST OF SPIRAL COILS WHICH ALLOW A MORE EXACT REGULATION, AND HIGH INDUCTACE MOTORS MAY BE USED.



THE CIRCUITS SHOWN IN Fig.17, Fig.18 AND Fig.19 MAY BE USED WITH RESONANCE AND PARTICULARLY WITH INDUCTION CAPACITOR MOTORS; BETWEEN THE LARGE STATOR INDUCTION CAPACITOR SURFACES, SMALL REVERSING POLE CAPACITORS ARE CONNECTED AND THEY ARE CONNECTED TO EARTH. SUCH REVERSING POLES HAVE THE ADVANTAGE THAT, WITH LARGE QUANTITIES OF ELECTRICAL ENERGY, THE SPARK FORMATION BETWEEN THE SEPARATE OSCILLATION CIRCUITS CEASES.

Fig.19 SHOWS ANOTHER METHOD WHICH PREVENTS HIGH FREQUENCY ELECTROMAGNETIC OSCILLATIONS FORMED IN THE OSCILLATION CIRCUIT, FEEDING BACK TO THE AERIAL. IT IS BASED ON THE WELL-KNOWN PRINCIPLE THAT A MERCURY LAMP, ONE ELECTRODE OF WHICH IS FORMED OF MERCURY, THE OTHER OF SOLID METAL SUCH AS STEEL, ALLOWS AN ELECTRIC CHARGE TO PASS IN ONLY ONE DIRECTION: FROM THE MERCURY TO THE STEEL AND NOT VICE VERSA. THE MERCURY ELECTRODE OF THE VACUUM TUBE N IS THEREFORE CONNECTED TO THE AERIAL AND THE STEEL ELECTRODE IS CONNECTED TO THE OSCILLATOR CIRCUIT. CHARGES CAN THEN ONLY FLOW FROM THE AERIAL THROUGH THE VACUUM TUBE TO THE OSCILLATION CIRCUIT AND NO FLOW OCCURS IN THE OPPOSITE DIRECTION. IN PRACTICE, THESE VACUUM TUBES MUST BE CONNECTED BEHIND AN AERIAL CHOKE AS ON THIER OWN THEY DO NOT PROTECT AGAINST THE DANGER OF LIGHTNING.

AS REGARDS THE USE OF SPARK GAPS, ALL ARRANGEMENTS AS USED FOR WIRELESS TELEGRAPHY MAY BE USED. OF COURSE, THE SPARK GAPS IN LARGE MACHINES MUST HAVE A SUFFICIENTLY LARGE SURFACE. IN VERY LARGE STATIONS THEY ARE COOLED IN LIQUID CARBONIC ACID, OR BETTER STILL, IN LIQUID NITROGEN OR LIQUID HYDROGEN. THE SPARK GAP CASING MUST ALSO BE INSULATED AND BE OF SUFFICIENT STRENGTH TO BE ABLE TO RESIST ANY PRESSURE WHICH MAY ARISE. ANY UNDESIRABLE EXCESS SUPER-PRESSURE WHICH MAY BE FORMED MUST BE LET OFF AUTOMATICALLY. I HAVE EMPLOYED WITH VERY GOOD RESULTS, MERCURY ELECTRODES WHICH WERE FROZEN IN LIQUID CARBONIC ACID, THE COOLING BEING MAINTAINED DURING THE OPERATION FROM THE OUTSIDE THROUGH THE WALLS.



Fig.20 SHOWS ONE OF THE MOST SIMPLE FORMS OF CONSTRUCTION OF AN AERIAL NETWORK IN COMBINATION WITH COLLECTORS, TRANSFORMERS AND THE LIKE. E IS THE EARTH WIRE, 8 THE SAFETY SPARK GAP, 7 THE WORKING SPARK GAP, 1 AND 2 THE THE STATOR SURFACES OF THE

MOTOR, 5 A CAPACITOR BATTERY, S THE PROTECTIVE AERIAL CHOKE WHICH IS CONNECTED WITH THE COIL IN THE AERIAL CONDUCTOR, A¹ TO A¹⁰ AERIAL ANTENNAE WITH COLLECTING BALOONS, N HORIZONTAL CONNECTING WIRES MANY OF WHICH CONNECT TO THE CENTRE.

THE ACTUAL COLLECTORS CONSIST OF METAL SHEATHS, PREFERABLY MADE OF AN ALUMINIUM/MAGNESIUM ALLOY AND ARE FILLED WITH HYDROGEN OR HELIUM AND ATTACHED TO COPPER-PLATED STEEL WIRES. THE SIZE OF THE BALOON IS SELECTED SO THAT THE ACTUAL WEIGHT OF THE BALOON AND ITS SUPPORTING WIRE IS SUPPORTED BY IT. ALUMINIUM SPIKES, MADE AND GILDED, ARE ARRANGED ON TOP OF THE BALOONS IN ORDER TO PRODUCE A CONDUCTOR ACTION. SMALL QUANTITIES OF RADIUM PREPARATIONS, MORE PARTICULARLY POLONIUM-IONIUM OR MESOTHORIUM PREPARATIONS CONSIDERABLY INCREASE THE IONISATION AND SO THE PERFORMANCE OF THESE COLLECTORS. IN ADDITION TO METAL BALOONS, FABRIC BALOONS WHICH ARE SPRAYED WITH A METALLIC COATING MAY ALSO BE USED.

INSTEAD OF THE ORDINARY ROUND BALOONS, ELONGATED CIGAR-SHAPED ONES MAY BE EMPLOYED. IN ORDER ALSO TO UTILISE THE FRICTIONAL ENERGY OF THE WIND, PATCHES OR STRIPS OF NON-CONDUCTING SUBSTANCES WHICH PRODUCE ELECTRICITY BY FRICTION, MAY BE ATTACHED TO THE METALLISED BALOON SURFACES. THE WIND WILL IMPART A PORTION OF ITS ENERGY IN THE FORM OF FRICTIONAL ELECTRICITY, TO THE BALOON CASING, THUS SUBSTANTIALLY INCREASING THE COLLECTION EFFECT.

IN PRACTICE HOWEVER, VERY HIGH TOWERS OF UP TO 300 METRES MAY BE EMPLOYED AS ANTENNAE. IN THESE TOWERS, COPPER TUBES RISE FREELY FURTHER ABOVE THE TOP OF THE TOWER. A GAS LAMP SECURED AGAINST THE WIND IS THEN LIT AT THE POINT OF THE COPPER TUBE AND NETTING IS SECURED TO THE COPPER TUBE OVER THE FLAME OF THIS LAMP TO FORM A COLLECTOR. THE GAS IS CONVEYED THROUGH THE INTERIOR OF THE TUBE, UP TO THE SUMMIT. THE COPPER TUBE MUST BE ABSOLUTELY PROTECTED FROM MOISTURE AT THE PLACE WHERE IT ENTERS THE TOWER, AND RAIN MUST BE PREVENTED FROM RUNNING DOWN THE WALLS OF THE TOWER, WHICH MIGHT LEAD TO A BAD CASTROPHE. THIS IS DONE BY BELL-SHAPED ENLARGEMENTS WHICH EXPAND DOWNWARDS, BEING ARRANGED IN THE TOWER IN THE FORM OF HIGH VOLTAGE INSULATORS OF SIAMESE PAGODAS.



IN ORDER TO COLLECT LARGE QUANTITIES OF ELECTRICITY WITH FEW AERIALS, IT IS AS WELL TO PROVIDE THE AERIAL CONDUCTOR WITH SETS OF CAPACITORS AS SHOWN IN THE TWO METHODS OF CONSTRUCTION SHOWN IN Fig.21 AND Fig.22. IN Fig.21, THE SET OF CAPACITORS 5 IS CONNECTED BETWEEN THE AERIALS Z VIA LEAD A AND A RING CONNECTOR TO POINT C.

IF TWO SUCH AERIAL ARRAYS HAVE A LARGE VOLTAGE DIFFERENCE, THAT CAN BE DEALT WITH BY CONNECTING SUFFICIENTLY LARGE CAPACITOR SETS (5, 5a, 5b) BY MEANS OF STAR CONDUCTORS D AND D¹. Fig.23, SHOWS A CONNECTION OF THREE SUCH RINGS OF COLLECTORS POSITIONED IN A TRIANGLE WITH A CENTRAL SET OF CAPACITORS.



THE CAPACITOR SETS OF SUCH LARGE INSTALLATIONS MUST BE EMBEDDED IN LIQUEFIED GASSES. IN SUCH CASES, A PORTION OF THE ATMOSPHERIC ENERGY MUST BE EMPLOYED FOR LIQUIFYING THESE GASSES. IT IS ALSO PREFERABLE TO EMPLOY PRESSURE. BY THIS MEANS, THE CAPACITOR SURFACES MAY BE REDUCED IN AREA AND STILL ALLOW THE STORAGE OF LARGE QUANTITIES OF ENERGY TO BE STORED SECURE AGAINST BREAKDOWN. FOR THE SMALLER INSTALLATIONS, THE IMMERSING OF THE CAPACITORS IN WELL INSULATED OIL OR THE LIKE, IS SUFFICIENT. SOLID SUBSTANCES CANNOT BE EMPLOYED AS INSULATORS.

THE ARRANGEMENT IN THE DIAGRAMS SHOWN EARLIER HAS ALWAYS SHOWN BOTH POLES OF THE CAPACITORS CONNECTED TO THE AERIAL CONDUCTORS. AN IMPROVED METHOD OF CONNECTION HAS BEEN FOUND TO BE VERY ADVANTAGEOUS. IN THIS METHOD, ONLY ONE POLE OF EACH CAPACITOR IS CONNECTED TO THE COLLECTING NETWORK. SUCH A METHOD OF CONNECTION IS VERY IMPORTANT, AS BY MEANS OF IT, A CONSTANCT CURRENT AND AN INCREASE IN THE NORMAL WORKING VOLTAGE IS OBTAINED.

IF, FOR EXAMPLE, A COLLECTING BALOON AERIAL WHICH IS ALLOWED TO RISE TO A HEIGHT OF 300 METRES, SHOWS 40,000 VOLTS ABOVE EARTH VOLTAGE, IN PRACTICE IT HAS BEEN FOUND THAT THE WORKING VOLTAGE (WITH A WITHDRAWAL OF THE POWER AS DESCRIBED EARLIER BY MEANS OF OSCILLATING SPARK GAPS AND THE LIKE) IS ONLY ABOUT 400 VOLTS. IF, HOWEVER, THE CAPACITY OF THE CAPACITOR SURFACES BE INCREASED, WHICH CAPACITY IN THE ABOVE MENTIONED CASE WAS EQUAL TO THAT OF THE COLLECTING SURFACE OF THE BALOON AERIALS, TO DOUBLE THE AMOUNT, BY CONNECTING THE CAPACITORS WITH ONLY ONE POLE, THE VOLTAGE RISES, WITH AN EQUAL WITHDRAWAL OF CURRENT, UP TO AND BEYOND 500 VOLTS. THIS CAN ONLY BE ASCRIBED TO THE FAVOURABLE ACTION OF THE METHOD OF CONNECTION.

IN ADDITION TO THIS SUBSTANTIAL IMPROVEMENT. IT HAS ALSO BEEN FOUND TO BE PREFERABLE TO INSERT DOUBLE INDUCTANCES WITH CHOKES AND TO PLACE THE CAPACITORS PREFERABLY BETWEEN TWO SUCH CHOKES. IT HAS ALSO BEEN FOUND THAT THE USEFUL ACTION OF SUCH CAPACITORS CAN BE FURTHER INCREASED IF AN INDUCTION COIL IS CONNECTED AS AN INDUCTIVE RESISTANCE TO THE UNCONNECTED POLE OF THE CAPACITOR, OR STILL BETTER, IF THE CAPACITOR ITSELF BE MADE AS AN INDUCTION CAPACITOR. SUCH A CAPACITOR MAY BE COMPARED TO A SPRING, WHICH WHEN COMPRESSED, CARRIES IN ITSELF ACCUMULATED FORCE, WHICH IT GIVES OFF AGAIN WHEN RELEASED. IN CHARGING, A CHARGE WITH REVERSED SIGN IS FORMED AT THE OTHER FREE CAPACITOR POLE, AND IF A SHORT-CIRCUIT OCCURS THROUGH THE SPARK GAP, THE ACCUMULATED ENERGY IS AGAIN GIVEN BACK SINCE NOW, NEW QUANTITIES OF ENERGY ARE INDUCED AT THE CAPACITOR POLE CONNECTED TO THE CONDUCTOR NETWORK, WHICH IN FACT, CHARGES WITH OPPOSITE SIGN TO THAT AT THE FREE CAPACITOR POLE. THE NEW INDUCED CHARGES HAVE, OF COURSE, THE SAME SIGN AS THE COLLECTOR NETWORK. THE WHOLE VOLTAGE ENERGY IN THE AERIAL IS THEREBY INCREASED. IN THE SAME TIME INTERVAL, LARGER QUANTITIES OF ENERGY ARE ACCUMULATED THAN WOULD BE THE CASE IF SUCH CAPACITOR SETS WERE OMITTED.

THERE IS SUBSTANTIALY MORE ADVANCED INFORMATION IN THIS PATENT WHICH SEEMS TO BE MORE OF A TUTORIAL BASED ON EXTENSIVE EXPERIENCE RATHER THAN A CONVENTIONAL PATENT.

VIDEO : <u>https://youtu.be/elogl7gbFSI</u>