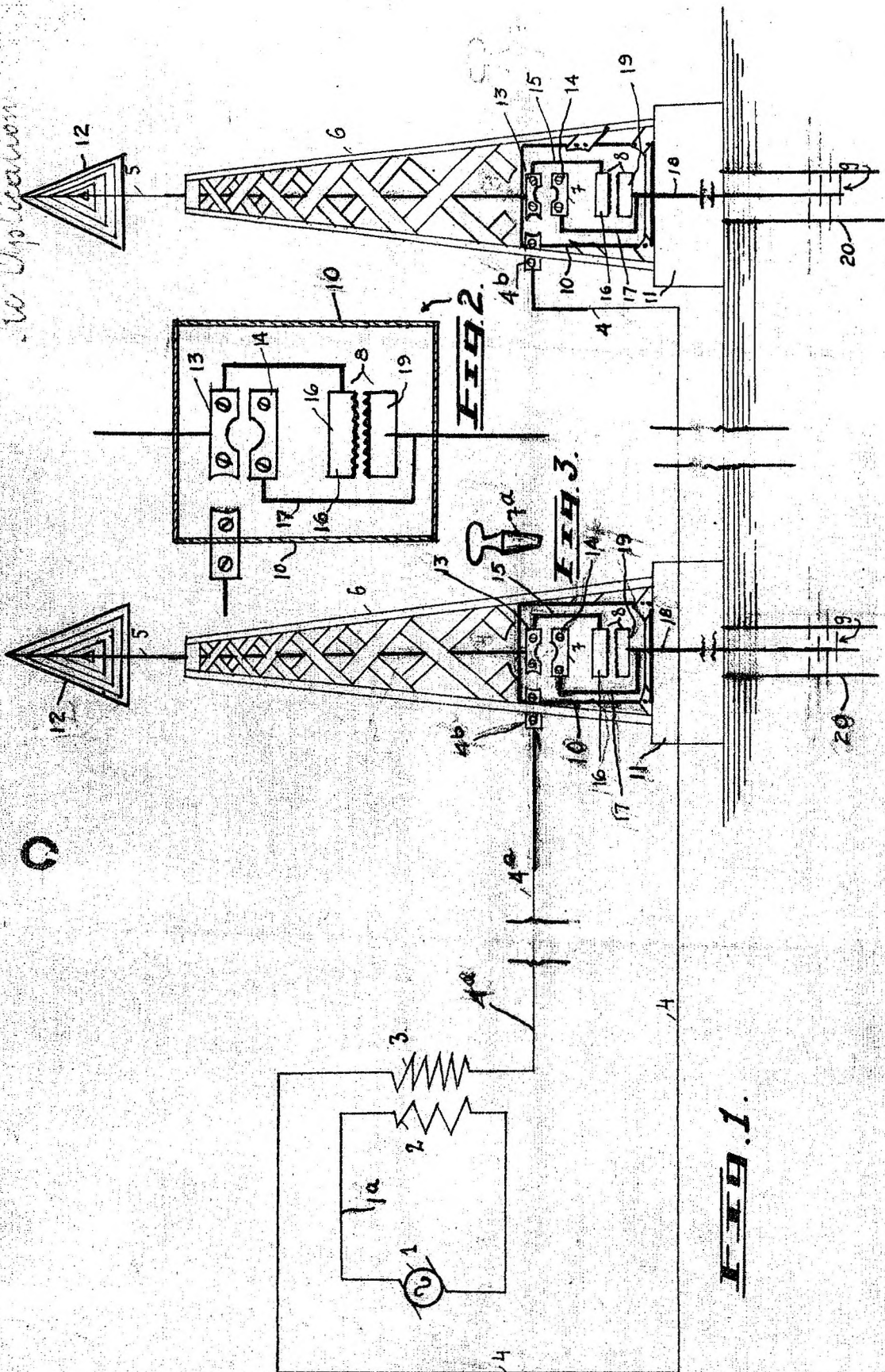


In Application



Certified to be the drawings referred to in the specifications herewith annexed
Ottawa, July 21st, 1925.

Inventor
EARL WALLACH
by *Wm. J. Fowler*
his attorney

Witnessed 10.5 March 1925

What is claimed is:

1. An electrical artificial rainmaking apparatus and regulating device including towers; a primary circuit including source of electrical energy; a secondary circuit; lightning rods carried by said towers and insulated therefrom; antennas carried on said lightning rod; grounding means; connections between said lightning and said grounding rod; said lightning rod and the grounding means for each tower being included in said second circuit; and removable means for breaking direct electrical connections between said lightning rod and the grounding means for each tower.

C 2. An electrical artificial rainmaking apparatus with regulating device including a main circuit and a secondary circuit; a source of electrical energy being included in said first mentioned circuit; a transformer between the first mentioned and second mentioned circuit; wires of the second mentioned circuit being extended oppositely from said transformer and adapted to carry respectively the negative and positive currents from said transformer; spaced towers; lightning rods carried by said towers and insulated therefrom; antennas carried by said lightning rods above said towers; one of the wires of said secondary circuit means connected with the lightning rod of one of said towers; the other wire of said secondary circuit means being connected electrically with the lightning rod of the other tower; a well provided beneath each of said towers; ground-

wires extending into each of said wells; electrical connections between the lightning rods and the grounding wires beneath each of said towers; the grounding wires being insulated from the towers; lightning protectors and switches included in the connections between said lightning rod and the grounding wire of each tower; and an enclosing casing for the lightning protectors and the switches in each tower; and removable switch plugs for said lightning protectors and switches.

3. An electrical artificial rainmaking apparatus with regulating device including a main circuit having a source of electrical energy; a secondary circuit; a transformer between said main circuit and said secondary circuit; the wires of the secondary circuit being extended oppositely from said transformer to carry respectively the negative and positive electric currents; a pair of lightning rods; supporting towers for said lightning rods; said lightning rods being insulated in said supporting towers; the wires of the secondary circuit being connected each to one of said lightning rods; switches in such connections; a removable switch plug for said switches; conical antennas carried on the upper ends of said lightning rods; a grounding wire for each of said lightning rods; each tower having a well provided therebeneath to receive the grounding wire for the lightning rod supported in said tower; a switch and a two-part lightning protector for the connections between each lightning rod and the grounding wire for the same; an insulating transparent casing within each tower to inclose the switches and lightning protector arranged therein for the lightning rod carried by said tower; and a removable key plug for the second-mentioned switch in each tower; the parts of the second-mentioned switch and the parts of the lightning protector in pairs within each of said towers; all the electrical parts being insulated from the tower.

This invention has relation to certain new and useful improvements in an electrical artificial rainmaking apparatus with regulating device and has for its primary object the provision of an apparatus of the character stated which may be readily employed in the time of drought to produce rain.

The invention has for another object the provision of an apparatus of the character stated with which artificial rain may be produced by the help of nature in midsummer or a temperature upward of 18° centigrade when the air pressure goes down and clouds are massing.

The invention has for a further object the provision of an apparatus of the character stated which may be employed to cause rain from clouds appearing over the towers of the apparatus in dry weather and at such times when rain is desirable.

A further object of the invention resides in the provision of an apparatus of the character stated including towers and lightning rods carried by said tower with an antenna carried on each lightning rod and means for charging the lightning rods and drawing the electricity from the clouds and thereby causing them to become condensed and cause a rainfall.

A still further object of the invention resides in the provision of an apparatus of the character stated by means of which discharges of the atmospheric electricity are brought about in consequence of the equalization of the electrical current and the clouds thereby forced to be discharged at the

same instance as the current from the transformer of the apparatus is transmitted by the wires to the conductors or antenna carried on the lightning rods supported in the spaced towers.

With the foregoing and other objects in view, as will appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of cooperating elements as hereinafter more specifically set forth claimed and shown in the accompanying drawings forming a part of the present application and in which:

Figure 1 is a diagrammatic view of the complete apparatus with regulating device.

Figure 2 is an enlarged detail view showing the electrical parts carried in a glass casing provided within each tower.

Figure 3 is a detail view of one of the switch plugs or keys provided for use in connection with the electrical parts carried in the glass casing of each tower.

Referring more in detail to the drawings in which similar reference characters designate corresponding parts throughout the several views, it is to be noted that there is a main or primary circuit 1a including an electrical power plant 1 or other suitable source of electrical energy and a coil 2 of a transformer. The coil 3 of the transformer is included in the main wire 4 of the secondary circuit. The wire leading to one end of the coil 3 may be termed 4a and this wire leads to a switch contact member 4b mounted in one

C

wall of the glass casing 10 within the lower portion of the tower 6 which may be constructed of metal or other appropriate material carried on the suitable base 11. This tower may be six hundred yards or more from the power plant 1. A second tower 6 may be positioned three hundred yards or more from the first mentioned tower 6 and the main portion of the wire 4 is shown as being connected with a switch contact member 4b corresponding to the first mentioned switch contact member 4b. The wires 3 and 4 are insulated at their ends connecting with contacting members 4b by the wrapping or coating or any other preferred manner, as indicated on the drawings. It will also be seen from the drawings that a lightning rod 5 is provided in each tower 6 and extended through the top thereof with a conical antenna 12 on its extended upper end. The lightning rod 5 is insulated for at least three parts of its length or the portion of the lightning rod 5 within the tower 6. On the lower end of the lightning rod is provided the upper member 13 of the switch 7 and which member 13 is in alignment with the switch member 4b and also above the opposed lower member 14 of the switch 7. A suitable switch key 7a is provided for movable engagement between the switch contact member 4b and the switch member 13 at a similar key or plug 7a is also employed for movable engagement between the switch members 13 and 14 of the switch 7. A two-part lightning protector 8 is also provided in the glass casing 10 below the switch 7 and a wire 15 connect the upper switch member 13 with the upper member 16 of the two-part lightning protector 8. A wire 17 is likewise provided for connecting the lower switch member 14 with the ground. wire 18 depending

from the spaced lower member 19 of the two-part lightning protector, as shown clearly in Fig. 1. The ground wire 18 depends through the glass casing 10 through the base 11 and into the water 9 in the well 20 beneath the base 11.

It is believed the complete construction, arrangement and functional operation of the various parts of the present invention may now be understood from the foregoing paragraphs taken in connection with the accompanying drawings without further detailed description. It may be briefly stated, however, that the towers 6 are preferably positioned about three hundred yards apart with the first tower 6 approximately six hundred yards from the power plant or some other source of electrical energy. Furthermore, the same parts are employed in each tower 6 and arranged in a similar manner. It is also to be understood that the electrical power plant should be a great power station any may be utilized for supplying current for the operation of this apparatus. The transformer composed of the coils 2 and 3 is charged by the main tower to the highest voltage and is to distribute the current to them a manner as to separate the positive from the negative currents when conducting the positive current in direction of one wiring 4-4a and the negative current in the counter direction of the other of said wiring 4-4a. The wirings 4-4a are to distribute the positive current from the lightning conductor and antenna on the one tower and to distribute the negative current to the lightning conductor (antenna 12) of the other tower. These conductor wires 4-4a should be capable to strong power. The insulated portions of the lightning rods or lightning conductor 5 and the wiring extending to and from and

located within the tower 6 should be placed on suitable insulators carried by the tower so as to protect the latter. The conical antennas 12 may be nickle or tin on order to prevent rust.

By means of this apparatus, artificial rain may be produced with the help of nature in midsummer as a temperature of 18° centigrade when the air pressure goes down and clouds are massing. The operation will be most effective when there is no wind or when there is only weak wind and when with dry weather the clouds are forced to be discharged.

When one or more clouds appear above the towers and the air pressure is going down, provided it is dry and a temperature of upwardly plus 20° centigrade, then the transformer should be charged by the main tower with current to the fullest capacity. The lightning rods should then be switched on and by the moving of the switch plugs or keys from between the switch members 13 and 14, the current is projected intermittently at short intervals such as seconds, from the transformer through the wiring and the lightning rod 5 and antenna 12 against the clouds (electric waves). This should be continued until it begins to rain, regardless of the discharge of the clouds by lightning and thunder storms. Should the cloud pass with a thunder storm or without a thunder storm giving no rain, the experiment should be repeated and tried at the next cloud until it begins to rain. When the current from the transformer through the two conductors or antennas 12 is projected against any cloud appearing above the towers the cloud is electrically discharged at the same instant. In the consequence of the lightning and the electrical vibration of the air the cloud become condensed and is pulled down by its weight, causing the rainfall from the cloud, if the air pressure is also

going down. The water drops produce moisture from the remaining vapour or fog of the cloud becomes heavier and is changed into water drops. Discharges of electricity are brought about in consequence of the equalization of the electrical current. As there is always more electricity in a cloud that could be produced by larger power plant, the electricity is drawn out of the clouds and the cloud is forced to be discharged at the same instant as the current from the transformer is transmitted by the wires to the conductors or antennas 12. It is possible to initiate artificial rain by means of this apparatus after the middle of May and until about the end of August, as a rule, provided the temperature is upward of 20° centigrade, when clouds are massing and the air pressure is going down and there is no wind or a very weak wind.

By installing several of these apparatuses at a distance of about sixty kilometers from each other a general rain may be produced and with the parts properly assembled and arranged as set forth and sufficient power employed for operating the apparatuses, there should be no difficulty experienced in the operation and affecting of the device. It is also apparent that owing to the arrangement of the well 20 of the ground wire 19 with the lightning protectors and switch arranged between the ground wire 19 and the lightning rod 5 and the wire 4 or 4a when excessive electric discharge will be carried to the ground and thereby protect the parts of the apparatuses from damage after being lightning charged.

While the preferred embodiment of the invention has been disclosed, it is to be understood that minor changes in the

(7)

details of construction, combination and arrangement of cooperating elements may be resorted to within the scope of what is claimed without departing from the spirit of the invention.

C