

Instructions for Installing and Operating

# “Lightning”

The Aloe  
Electro-Therapeutic Cabinet

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*“So simple you can learn to  
use it in an hour.”*

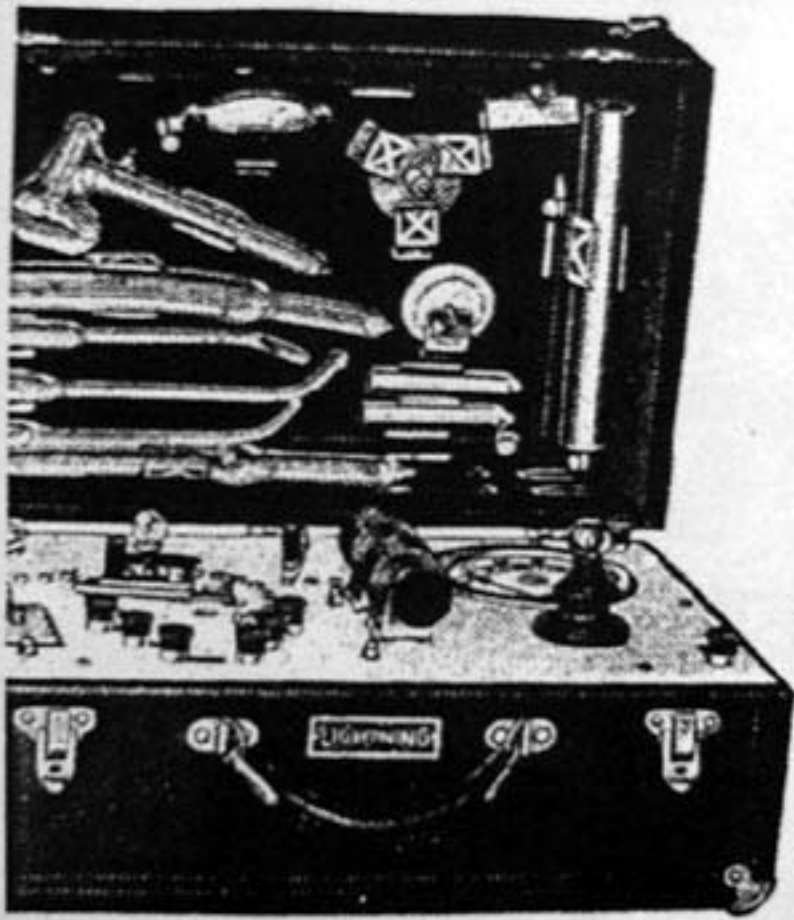
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**A. S. ALOE CO.**

**511-513 OLIVE STREET      ST. LOUIS, MO.**

A. S. ALOE CO.



*“Lightning”*

The Aloe Electro-Therapeutic  
Portable Outfit

## Foreword

Electro-Therapy is the treatment of disease by electricity, Nature's Great Vital Force, which exercises its potentiality upon the star and upon the atom.

This same great element which Franklin plucked from the sky—the very lightning—which as an unseen current lights our lamps, moves our motors, carries messages across the seas and voices across continents, is now harnessed to be therapeutically directed and measured by you for the benefit of mankind!

Right now, you are a better physician than the average. You have been energetic enough to equip yourself with an apparatus that will meet more indications in pathology than any one factor in medicine. The true physician is firm in his desire to augment his power of obtaining therapeutic results. Then what joy, what intense interests are his, as he observes, develops, increases this great modern remedial power!

Doctor, now that you are about to explore a field new to you, enter it with a new faith in yourself, in Electro-Therapy. Apply yourself enthusiastically and with persistence—and you will find that energizing interest that comes from intelligent study—you will take a new pride in your profession.

This wonderful healing force is now at your command and control through The "Lightning" Aloe Electro-Therapeutic Cabinet.

Let us explain the action of the High Frequency Currents by a comparison:—

We will compare the *voltage* of electricity with the *pressure* of water at the hydrant. When we increase the pressure we increase the amount of water we can draw, due to the increased speed with which the water flows. Then increase the pressure of the water at the hydrant 650 times—as the voltage of the "Lightning" Cabinet is increased over the average electric light globe—and the result would be a stream of water with sufficient hydraulic power to kill instantly. This same condition would prevail if 65,000 volts—the capacity of the "Lightning" Cabinet

—were permitted to enter the body direct. But let us suppose tremendous pressure of water were forced through an atomizer hundreds of thousands of tiny holes. The result would be a mist spray that would permeate the entire surrounding atmosphere.

In the generation of High Frequency Currents the electric condenser of the "Lightning" Cabinet acts as does the water atomizer in separating the flow into minute impulses of such rapid succession that no sensation affects the nervous centers. Likewise there is no muscular reaction.

As the *frequency increases the sensation decreases*. The nervous system can detect oscillation in an electric current up to 10,000 per second. The "Lightning" Cabinet has a frequency output of *one million* per second.

You, therefore, have at your command a powerful agent, yet you can *safely apply* to your patients.

The "Lightning" Cabinet is built to operate on any 110 Volt, 60-Cycle, Alternating Current, and should never be connected to any other source of supply unless especially made for a different current.



**Unpacking** Having removed the cover of the packing box containing the "Lightning" Outfit, you were confronted with a Caution Card—the object being to make you master of the wonderful Outfit that you are adding to your Office Equipment. Follow the directions and you will not be led astray.

After removing the excelsior from the top, you will find a package containing all of the Connecting Cords of the Outfit. Underneath this will be found another package containing the Auto-Condensation Pad; below this, the Cabinet, itself. Remove the paper wrapping and open the lid carefully.

In handling the Outfit during shipping, some of the Accessories may have jarred loose from their retaining clips, and as there are a number of parts of glass, open the lid carefully to prevent their sliding out and breaking. After removing the packing material found on the inside of the Cabinet, set the accessories back in place. (Refer to cut of machine on page 2 for positions.)

Now take the Packing List found inside this booklet and check off every item received. Should any items be missing, go over your tissue paper, carefully, and if not found, then go carefully through the excelsior. These shipments are all double-checked and should reach you complete. Check carefully before you report a shortage.

**Line Connections** See that the Black Button on switch "A" is down. The heavy twisted green cord with screw plug on one end and a small stage plug on the other, is for connecting the Cabinet to the line current. Set the stage plug end over the two split tips marked "Line", and screw the swivel end into any convenient lamp socket, which socket outlet has first been tested with a lamp bulb to make sure it is "live."

Observe that levers "C" and "G" are on points 1, and "K" on "Off" point. *Caution:* These levers must never be allowed to rest in such position as to connect two buttons; they must be set on one contact only. They must never be moved with the current on; make all adjustments with black button on switch "A" down.

Turn regulating screw "B" gently to the right (clockwise), until Spark Interrupted points are closed; then open about one-sixth of a turn. Make no further alterations or adjustments.

Press the *red button* on switch "A." Your Pilot Lamp will light up with a red glow and there will be also a slight hum from the transformer within the Cabinet, as well as a sparking between the interrupter points "B." These indications prove that your Machine is ready for operation. If the Pilot Lamp does not illuminate, make sure that it is tightly screwed into the small socket. Now turn off current by pressing the black button on Switch "A." *Caution:* Do not move any lever without first seeing that black button is down and pilot light out.

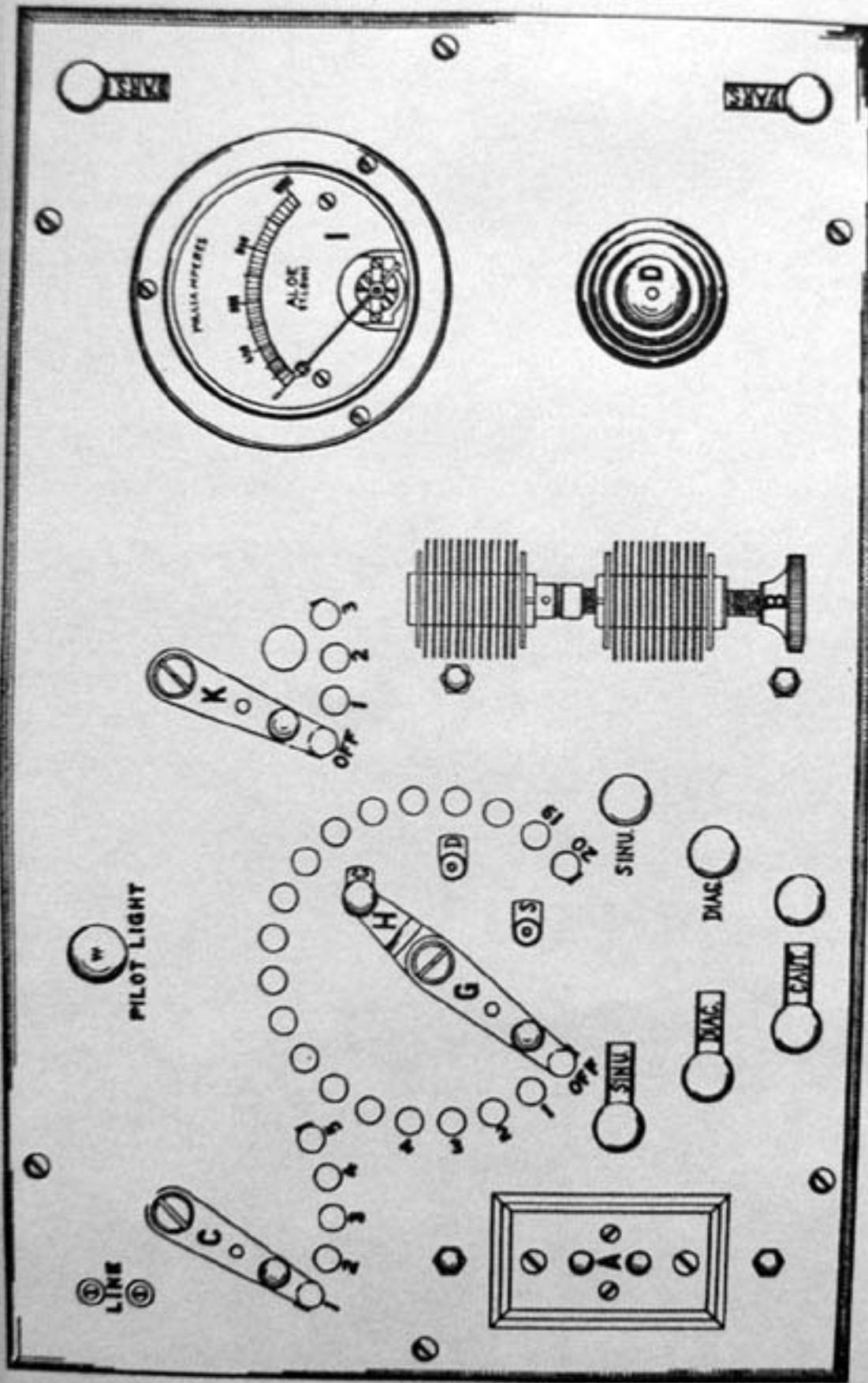


Diagram of "Lightning" Controls

**Explanation Of Control Levers** Lever "C" controls the rheostat; the volume of current entering the Machine. Point 1 is the weakest setting and the volume is gradually increased by advancing lever "C" to the right; point 5 being maximum.

Moving lever "C" affects *all* of the modalities of the Machine. Never move lever "C" unless *black* button on switch "A" is down.

Lever "K" governs by means of a specially designed and patented High Frequency Control. Lever "K" controls the length and oscillations of spark from pole "D," as well as the oscillations and milliamperage from the d'Arsonval terminals.

Lever "K" should remain on button marked "Off" at all times when using the Cautery, Diagnostic or Sinusoidal Circuits. With lever "K" on point 1 you have smallest output as measured in volume, but highest frequency. Use this setting for Fulguration, internal Treatments or wherever Mucous Membrane is encountered. For an output of medium frequency and medium spark length, for surface work, place lever "K" on point 2 and lever "C" on whichever point may be desired. Placing lever "K" on point 3 produces a heavy discharge of slower oscillations and such output is only to be used for heavy massage purposes. At this setting your patient will "feel" more of the electrical sensations.

Lever "G" controls the output of the Cautery, Diagnostic and Sinusoidal Circuits.

Lever "H" has but three settings, labeled "C," "D" and "S," which points in turn make connection inside the Cabinet to the Cautery, Diagnostic and Sinusoidal Circuits.

You will note that the movement of lever "G" is restricted at certain points by lever "H", that is, with lever "H" on point "C" you have eleven (11) points of control for Cautery; with lever "H" on point "D" you have fifteen (15) points of control for the Diagnostic Circuit, and with lever "H" on point "S" you have nineteen (19) points of control for Sinusoidal. Cautery current will not be obtained beyond the eleventh button, nor Diagnostic current beyond the fifteenth, nor any one of the three unless lever "H" is set on properly initialed point to correspond.

**Explanation Of Spark Interrupter Points "B"** The Spark Interrupter Points "B" are the most important regulating feature on the Cabinet. Their function is to regulate the discharge of the high tension current in connection with the control levers "C" and "K", and may be adjusted *with the current on*, regardless of the settings of these levers.

When these Spark Interrupter Points are closed there is a direct short circuit on the transformer and no discharge from the Tesla or



d'Arsonval outlets. As these points are gradually separated, the high tension current passing across the gap produces an oscillating or vibratory effect, which effect is increased up to that point where the voltage is insufficient and sparking ceases.

The highest rate of oscillations, that is, the *highest* frequency of discharge is obtained with Spark Interrupter Points "B" nearly closed. As they are slowly opened you will notice a perceptible increase not only from pole "D" but from the d'Arsonval outlets, as well (as indicated on the Milliampere Meter). These points should not be open so far as to cause an uneven, noisy sparking, and the more they are opened the slower will be the rate of oscillations and the greater the "electrical" sensations.

**High  
Frequency  
Treatments**

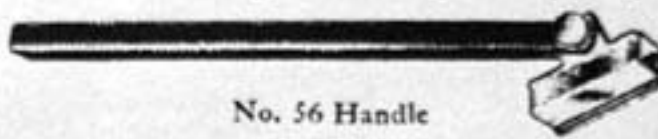
First see that the black button on switch "A" is down. Close Spark Interrupter Points "B" by turning regulating screw gently to the right (clockwise), and then open one-sixth of a turn.

Set levers "C" and "K" on points 1, and "G" on "Off" button. The setting of lever "H" is immaterial when using the High Frequency or d'Arsonval Currents, but extreme care must be exercised that lever "G" is never allowed to touch two buttons at the same time, when the current is on.



Application High Frequency to Limb

Place the tip on the heavy black insulated cord (No. 51) in the socket in ball "D" and slip hook on other end of cord into the ring on the High Frequency Handle (No. 56). Select the electrode



No. 56 Handle



No. 51 Cord

desired and clamp it firmly in the metal end of the handle. The electrodes Nos. 2, 4, 5, 13 and 23 are of a size to fit this handle, whereas the No. 9-D has its own handle and connection is made by simply hooking the cord, direct.



No. 9-D Electrode

Grasp the fiber insulated end of the handle as far from the metal as possible to avoid unnecessary sparking to the hand, and after observing that the black cord (No. 51) hangs free and does not lie on the Machine or make contact with the body of the patient, press *red* button on switch "A". If the current does not immediately pass through the electrode



Application High Frequency to Spine

producing the desired violet color, it is possible that the electrode is cold. Grip the electrode with the bare hand to warm it, and if there is then no response, open the Spark Interrupter Points "B" a bit wider.

When an electrode is what we might term unusually "stubborn" and will not produce the violet color when handled as above, shut off the Machine, leave all control levers untouched, remove the black cord from pole "D" and remove the electrode from the handle. Grasp the elec-





trode firmly in the bare hand, press red button on switch "A" to again start Machine, touch the electrode to ball "D" and unless the tube is punctured it will take the current, and you can shut off the Machine, again connect the cord, handle and electrode as above, and you will have no further trouble.

### Regulating The High Frequency Current

points "B".

The intensity of the discharge through the glass vacuum electrode may be regulated in three ways: (1) by moving lever "C" to the right, thereby increasing the current entering the transformer, (2) by advancing lever "K" to button 2 or 3, (3) by opening Spark Interrupter

Never advance levers "C", "K" or "G" with the current on, although Spark Interrupter Points "B" can be adjusted to obtain the desired volume with the current either on or off. The setting of lever "H" is immaterial as it has no bearing, whatever, on any of the High Frequency Modalities.

When Spark Interrupter Points "B" are adjusted very closely together, the frequency or oscillations of the discharge is the highest, although the current output is of lowest actual power. As you separate these points the oscillations of the discharge become slower and more powerful—up to a certain point where the patient will feel the sensation of the current. This unsteady, low frequency current has practically no therapeutic value and is not to be used unless the psychological effect, only, is desired.

Turning regulating screw "B" a little further to the left and opening the Spark Interrupter Points a bit more, will stop the discharge entirely. Should this happen, simply screw the points "B" closer together and the current will start again promptly.

Always bear in mind that the higher the rate of High Frequency Oscillations the greater will be the therapeutic effect, but the smaller will be the actual output of power.

We suggest always testing current from the glass electrodes on yourself, before applying to patient.

**Example Of  
High  
Frequency  
Application**

Let us go through the process of giving a High Frequency treatment over the nerve centers, along the spinal column. We will use a medium length of spark at a medium high rate of oscillations, and obtain it as follows:

Press black button on switch "A".

Set lever "C" on point 3.

Set lever "K" on point 2.

Have Spark Interrupter Points "B" open  $\frac{1}{2}$  turn, or separated sufficiently to allow double the thickness of this paper to pass between.

See that lever "G" is on "Off" point.

The setting of lever "H" is immaterial.

Insert the tip on the end of the heavy black cord (No. 51) into ball "D", and hook the other end into the small ring on the end of the No.



9-D electrode. Grip the insulated end of the handle, see that the black cord hangs free, that is, does not touch any part of the Machine, yourself or patient and press the *red* button on switch "A".

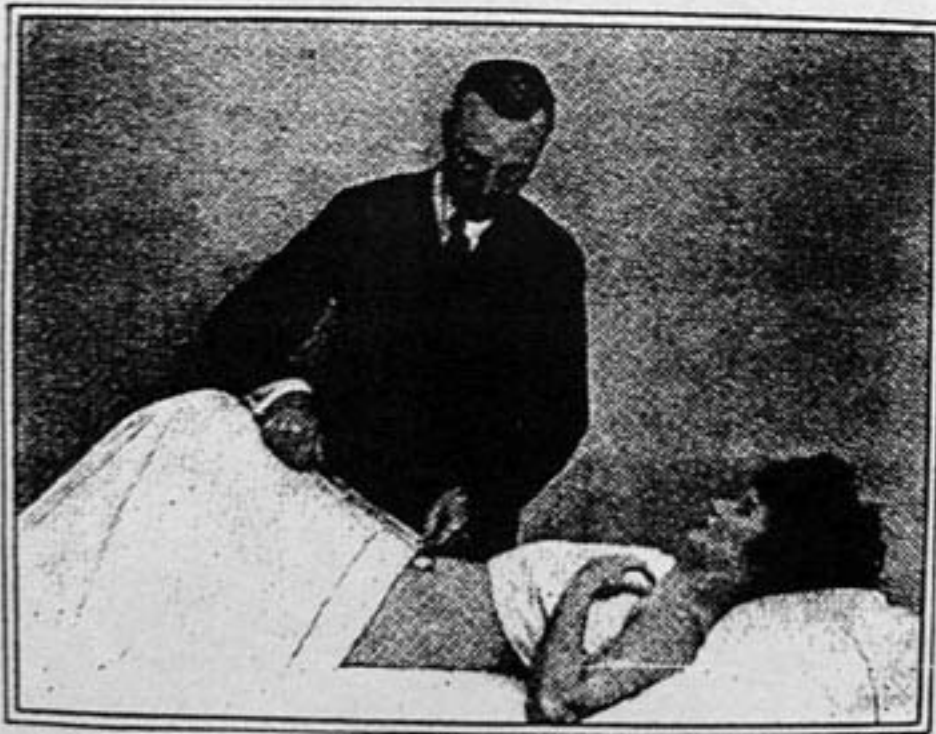


Application High Frequency to Colon

Place the fingers of your other hand over the back of the bulb of the electrode; place the flat surface of the electrode on the patient's spine; remove your fingers, and the entire discharge passes from the Machine to the patient. Keep the electrode moving—do not permit it to remain in the starting position. If it adheres to the skin enough to retard movement, sprinkle the surface under treatment with talcum powder, or cover the part with gauze or a thin towelling.

After sufficient treatment, and before removing the electrode from the skin, always shut off the current at switch "A".

The object of your touching the glass bulb when applying same to the skin at the start of a treatment, or on removing it when through, is mainly consideration of the patient's comfort. If the electrode is charged with a medium or fairly strong current and applied directly to the patient's skin, the first sparks will prove disagreeable, whereas if you absorb some of this discharge through your own hand, the application to the patient will be hardly perceptible. This also holds true when removing the electrode.



Application High Frequency to Abdomen

**High  
Frequency  
Treatment  
Indications**

High Frequency treatments are indicated generally in Infectious Skin Diseases, Superficial Conditions, as well as Infections in the Orifices that can be reached with electrodes. High Frequency currents as delivered through the glass electrodes:

- Dilate the Blood Vessels,
- Increase the Blood Supply to a given area,
- Increase Oxydization and Oxygenation,
- Promote Absorption of Exudates, and Liberate Ozone.



A few of the best known conditions which are successfully treated with this modality are: Abscesses, Acne, Eczema, Skin Ulcers, Eye Strain, Chilblains, Pyorrhea, Lumbago, Enlarged Tonsils, Blepharitis, Uterine Diseases and for the relief of pain in Neuritis and Rheumatism.

**Suggestions For High Frequency Treatments (Acne)** Open the nodules with a needle and express the pus. Set lever "C" on point 3, lever "K" on point 2, lever "G" on "off" point and have the spark points "B" open about one-half turn, or until sufficient discharge is produced from ball "D" (as mentioned under heading "Regulating Current" on page 8) that a half inch spark will pass from the No. 9-D electrode to the palm of your hand. Apply the electrode to the affected skin, press red button on switch "A" and keep the electrode moving. Avoid sparking. The length of treatment will vary with the case at hand, but an average of 7 to 9 minutes, to produce Hyperemia, about three times a week will be found sufficient.

*Skin Ulcers, Eczema, Superficial Abscesses, Lupus Vulgaris* and the like are successfully treated in a similar manner to Acne.

**Lumbago** Is best treated with a rather brisk rubbing of a fairly strong discharge.

Set lever "C" on point 4.

Set lever "K" on point 2.

See that lever "G" is on "Off" point.

Open Spark Interrupter points "B" about  $\frac{1}{2}$  turn of the adjusting screw.

**Blepharitis** And other ailments around the eyes require the application of a mild current.

Set lever "C" on point 1.

Set lever "K" on point 1.

See that lever "G" is on "Off" point.

Open Spark Interrupter points "B" about  $\frac{1}{6}$  turn of the adjusting screw, or until a fine spray of about one-eighth inch in length is obtained, as measured by placing the fingers that distance from the glass electrode.



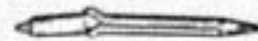
Placing Electrode on Eyelid

Place the fingers of your own hand on the back of the electrode, (after pressing red button on switch "A"), apply the glass surface to the area desired and then remove your fingers. This will prevent too much current reaching the tender spot too suddenly and will avoid possible discomfort to the patient. Four to five minutes' treatment, daily is recommended.

**Uterine Diseases** Require specially shaped and insulated tubes that only those sections affected may receive treatment. All inflammation of the Mucous Membrane, especially in the orifices, should be treated with mild currents; that is, with lever "C" on points 1 or 2, lever "K" on 1, lever "G" on "Off" point and the Spark Interrupter points open about  $1/6$  turn. Applications not to exceed 7 minutes each, either daily or three times a week depending on the urgency of the case, are usual.



No. 13 Electrode



No. 12 Electrode



No. 23 Electrode

**Enlarged Tonsils** Will yield readily to the High Frequency spray from a glass electrode.

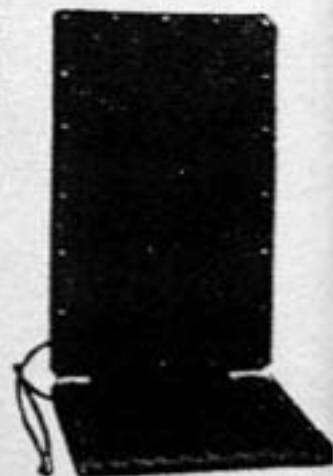


No. 410



306

The patient should be seated on the Chair Pad (No. 410), which pad is connected to pole "D" by means of one of the d'Arsonval cords (No. 306). Use a glass tongue depressor, over which slide the No. 4 or No. 23 Electrode, placing the tip directly in contact with the tonsil.



No. 410 Chair Pad

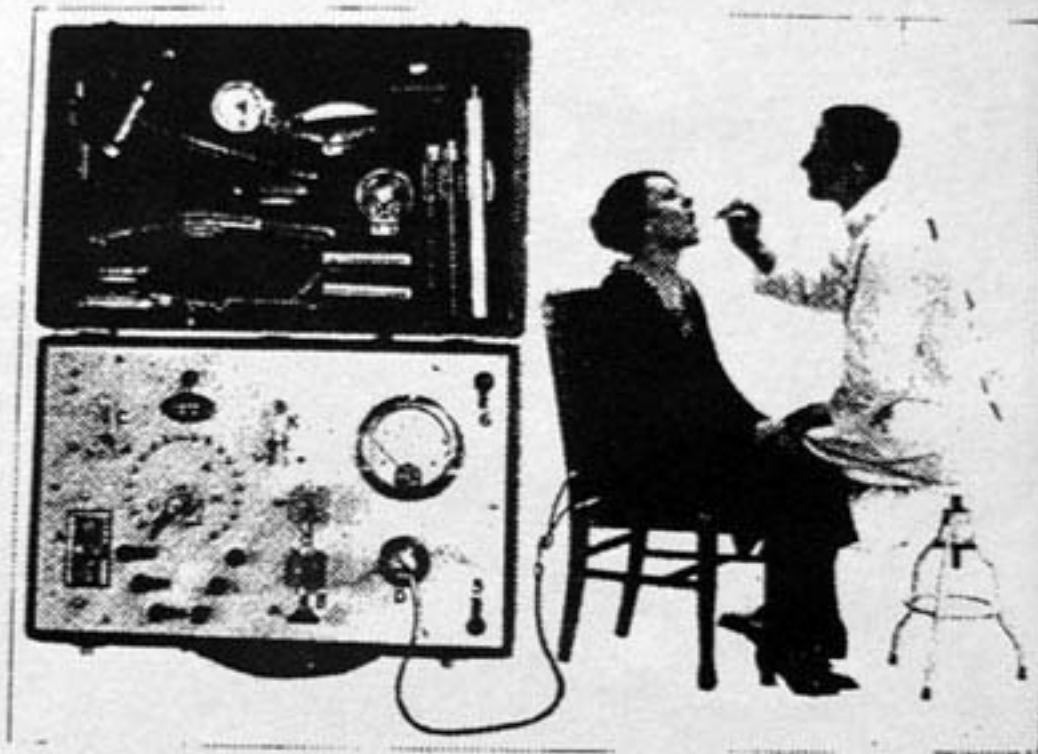
Set lever "C" on point 5.  
Set lever "K" on point 2.  
See that lever "G" is on point marked "Off".  
Open the Spark Interrupter points "B" about  $1/4$  turn of the adjusting screw.

The glass electrode employed is *not* to be connected to the Machine in any way, but instead, held in your own hand firmly. Now have a third party press the red button on switch "A" and pass this unusually heavy discharge *for an instant only*.

Move the electrode to another spot and repeat the operation, and continue until the entire area has been gone over. Do not permit any of the current to touch the lips or teeth or any part of the mouth except the tonsil. There will be marked shrinking almost immediately, but none of the objectionable sloughing which follows the average electrical application.



**Nasal Congestion** Is almost instantly relieved by inserting the No. 4 electrode in the nostril and giving a 5-minute Indirect treatment with a medium current. Seat the patient on the Chair Pad (No. 410), which pad is to be directly connected to pole "D".



Application of High Frequency to Tonsil

Set lever "C" on point 4.

Set lever "K" on point 2.

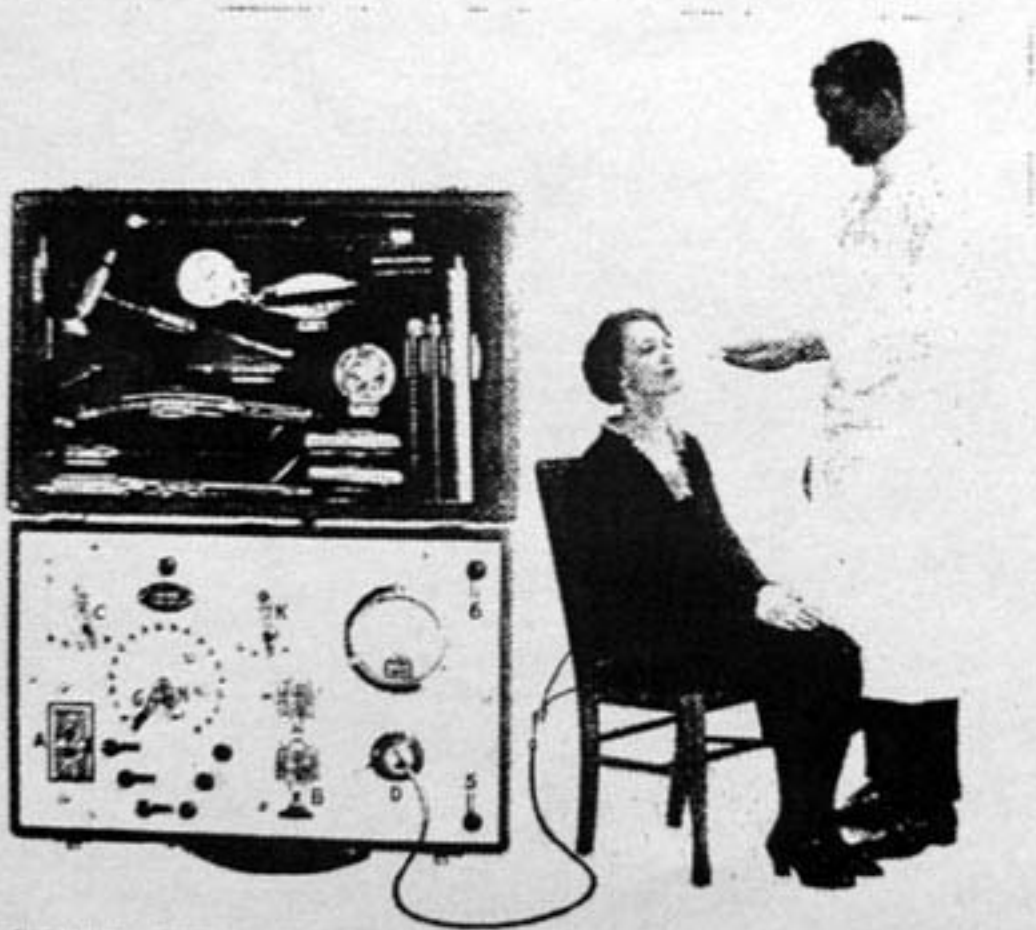
See that lever "G" is on "Off" point.

Open the Spark Interrupter points "B" about  $\frac{1}{2}$  turn of the adjusting screw, which will insure a fairly heavy discharge.

Have your patient insert the electrode (which tube is *not connected* in any way to the Machine) into the nostril and hold it there. Throw on the current by pressing red button on switch "A", place your own hand on the electrode, release the patient's fingers, and a considerable volume of current will come *from* the patient to yourself. This is an "indirect" method but permitting of large applications of High Frequency currents with no electrical sensations or inconvenience.

### Miscellaneous High Frequency Treatments

The foregoing are but a small portion of the many various ailments in which the High Frequency electrodes are indicated, and were selected because of their diversity. The "Indirect" method of application is, at the present time, finding great favor. A greater volume of current can be employed, there are practically no electrical sensations and the fingers will take the place of the glass electrode in many instances.



Electrode in Nostril

Place the patient on the Chair Pad (No. 410), which pad is directly connected to pole "D" on the Outfit.

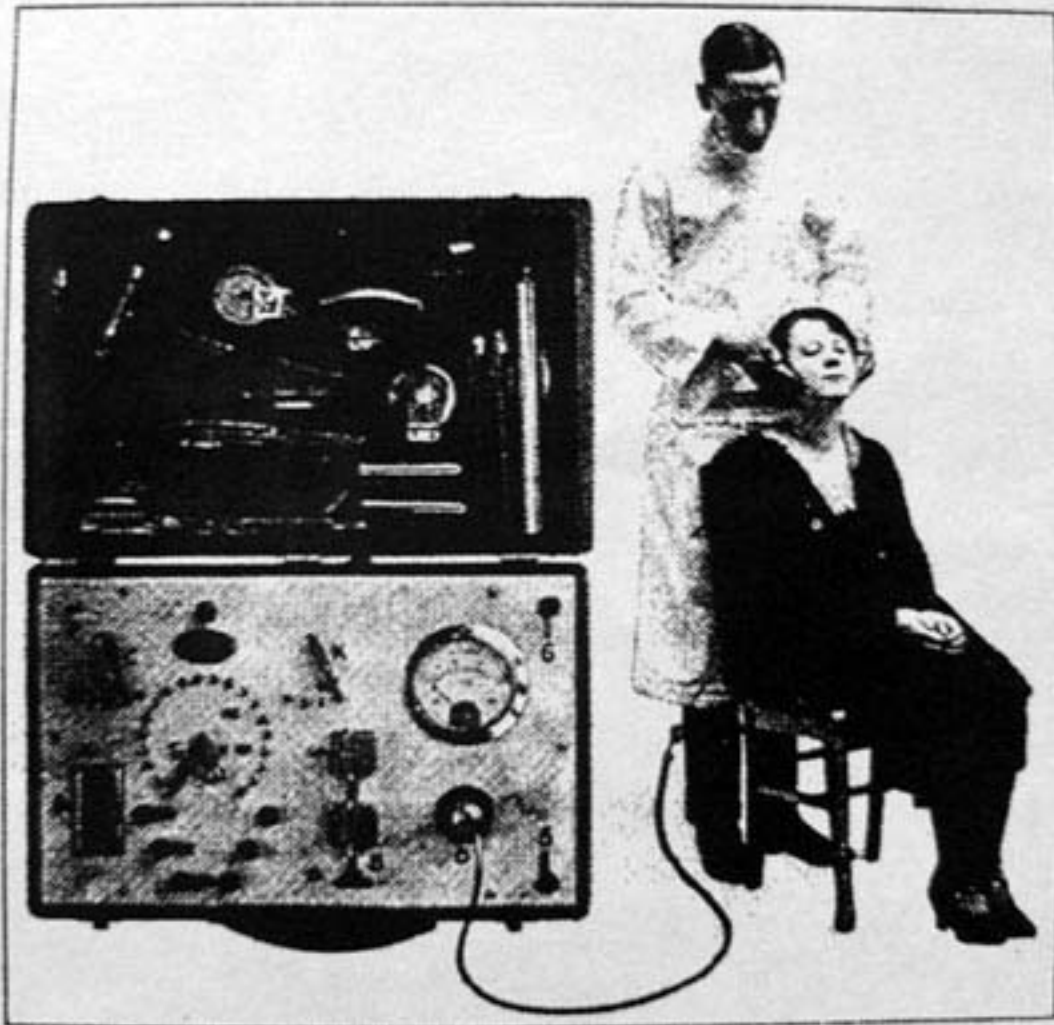
Set lever "C" on points 4 or 5.

Set lever "K" on points 2 or 3.

See that lever "G" is on "Off" point.

Open the Spark Interrupter points "B" about  $\frac{1}{4}$  turn of the adjusting screw.

Place all four fingers of both of your hands on the patient's neck, that is, under the ear, and have a third person close the circuit by pressing red button on switch "A". You will notice a decided warmth in the fingers, and the patient, too, will experience a pleasant warming sensation at the point of contact. Now release gradually one finger after the other until one or two are in contact on either side, and you will notice that as you lessen the surface covered the heating effect increases in exact inverse proportion.



Indirect High Frequency

Practically all applications of High Frequency Currents average 7 minutes' duration, although 5 minutes will be found adequate for some cases and as high as 10 minutes will be required for others.

**D'Arsonval  
Auto  
Condensation  
Current**

Is sedative in action,  
Reduces High Blood Pressure, and  
Increases Metabolism and Bodily Heat.  
This current is indicated and recommended for  
use in:

Neurasthenia,  
Arterio Sclerosis,  
Nervousness,  
Menopause, and  
Insomnia.

The necessary attachments for administering the d'Arsonval Auto-Condensation Current consist of the Chair Pad (No. 410) on which the patient sits during treatment, and which pad is connected by means of one of the No. 306 Cords to either of the two posts marked "d'Arsonval" on the Cabinet, and an Electrode for carrying energy from the opposite d'Arsonval post to the body.

The No. 410 Pad may be used on a table with the patient in a reclining position, if desired.



No. 410 Chair Pad (Reclining)

It is well to use a moderate current at the beginning of an Auto-Condensation treatment, as in all High Frequency applications.

Set lever "C" on point 5.

Set lever "K" on point 3.

See that lever "G" is on "Off" point.

Have Spark Interrupter points "B" open  $\frac{1}{4}$  turn.

See that black button on switch "A" is down.

Fasten tip on end of one of the No. 306 Cords under post marked "d'Arsonval" nearest meter, and tip on other end of cord into binding post on single end of Bifurcated Cord. The double ends of this Bifurcated Cord are to be inserted in the receptacles provided on the edge of the Chair Pad, as illustrated.

Connect tip of other No. 306 Cord under opposite d'Arsonval post, and into binding post on the d'Arsonval Handle (No. 52).

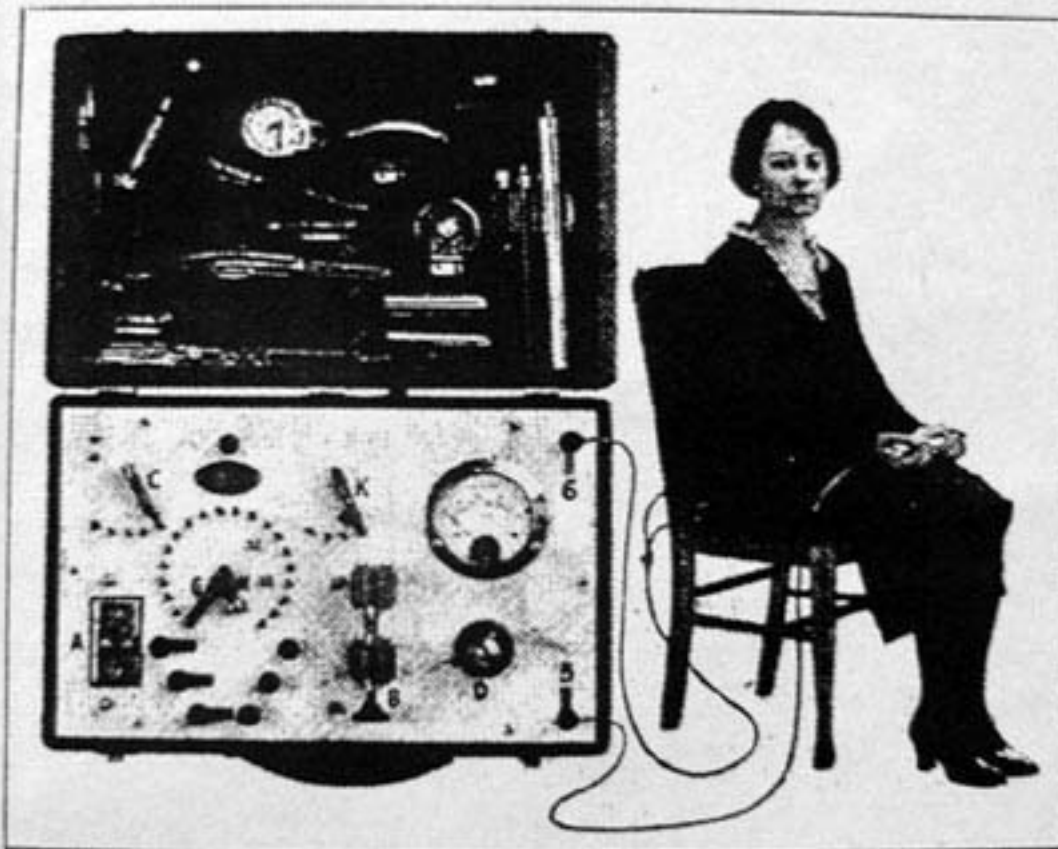


No. 52 Handle

Have patient sit comfortably on the pad and grasp the Metal Handle with *both hands*. Observe that the connecting cords are not touching one another, or any section of the cabinet.



Press red button on switch "A", and turn regulating screw "B" to the left or right until the current is running smoothly and a reading of about 300 milliamperes is obtained on the meter. The amount to be delivered to the patient should be gauged according to the case at hand. All the regulation necessary will be obtained with the Spark Interrupter Points "B", no changing of control levers being necessary. Do not open the spark points too wide as the current will fluctuate and the meter reading become inaccurate.



Auto Condensation

Most authorities agree that a low milliamperage should be used at the first sitting and that the current be increased at subsequent sittings to the desired maximum, and then to taper off gradually. As an example: We find that by breaking off too abruptly the effect will be lost in a short time; we may have reduced the Blood Pressure, nicely, but it returns almost to normal. On the other hand, by tapering off gradually, the effect is lasting and completely satisfactory. Hence, a number of treatments are required. As an aid during the period of Auto-Condensation treatments, always recommend that your patient drink a great deal of water.



The usual method of administering the Auto-Condensation Current has been to employ the Metal Handle (No. 52). A far more efficient application, however, is to strip the chest of the patient, and after thoroughly saturating the Felt Pad Electrode (No. 690) in warm salt water, place it directly over the Sternum and hold in place with either a sand bag or tapes.



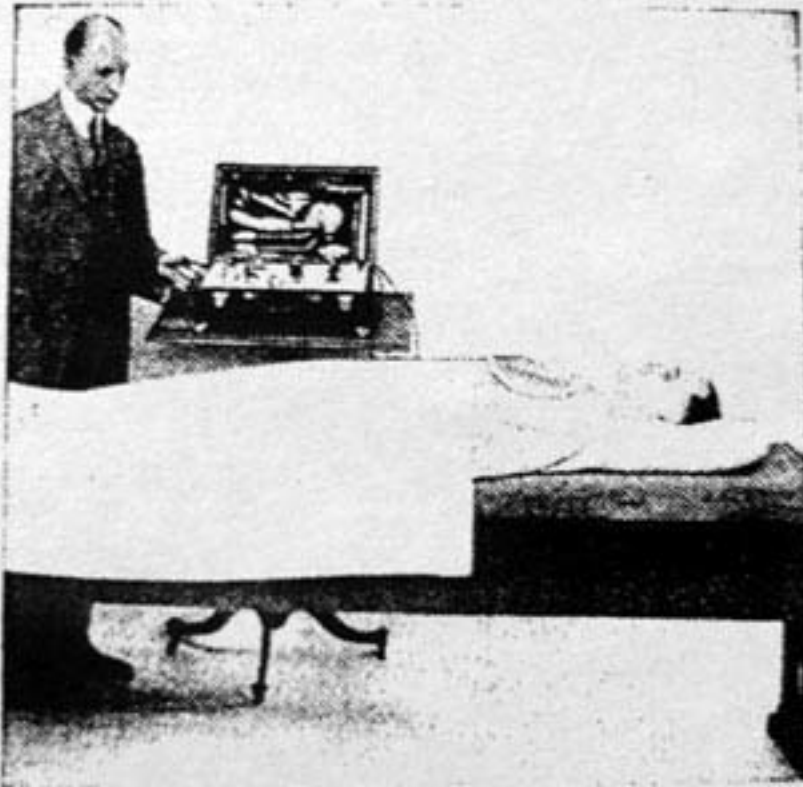
Auto Condensation with No. 613 Pad

The objection to sending the Auto-Condensation Current through the hands is simply that the wrists are very poor conductors of High Frequency Currents, on account of their construction and size, and a great deal of the available energy is lost at those points. With the No. 690 Pad on the chest, however, the path of the current is greatly shortened, less resistance encountered and a higher milliamperage may be passed with no discomfort to the patient.

If you experience any difficulty in obtaining the desired readings at fixed settings of control levers and by only manipulating spark points "B", levers "C" and "K" may be set on other points, although such procedure is rarely necessary. As an example: Having spark interrupter points "B" set so that the current is flowing smoothly, altering the settings of levers "C" and "K" will increase or decrease the readings about as follows:

Lever "C" on point 3 and lever "K" on point 1, reading—400 M. A.  
 Lever "C" on point 3 and lever "K" on point 2, reading—440 M. A.  
 Lever "C" on point 3 and lever "K" on point 3, reading—475 M. A.  
 Lever "C" on point 5 and lever "K" on point 1, reading—500 M. A.  
 Lever "C" on point 5 and lever "K" on point 2, reading—600 M. A.  
 Lever "C" on point 5 and lever "K" on point 3, reading—675 M. A.

d'Arsonval Auto-Condensation treatments will be found an invaluable aid in Insomnia and most all Nervous Conditions.



Auto Condensation

**Suggestions** When using over 500 milliamperes, do not touch the  
**Auto** patient as you might both receive rather disagreeable  
**Condensation** sparks.  
**Treatments** Never use a metal table or give treatments within 6  
 inches of a water pipe.

Do not treat with a greater volume of current than approximately 750 milliamperes.

Do not expect to pass the same high milliamperage through a thin patient as you would a stout one. In Diathermy, less milliamperage will pass through an obese patient at a given setting of the controls than a thin one; just the opposite is true in Auto-Condensation.

The Chair Pad (No. 410) may be used in the reclining position on a table, as well as in the upright position on a chair. Just bear in mind that to obtain the very best of results the patient should be fully relaxed and made as comfortable as possible.

**Figuring Amounts Of Dosage** There is essentially no danger in Auto-Condensation. There is very little harm in over-dosage, and if high milli-ampereage is found disagreeable on the part of the patient, use less current and lengthen the treatments in proportion.

Patients with exceedingly high Blood Pressure, or with a Slow Pulse should be carefully watched.

The treatment of Hardened Arteries, the walls lined with calcarious deposits, must be undertaken in a systematic way if lasting pronounced results are to be obtained (see foregoing paragraph under "Suggestions").

During the menses it is considered inadvisable to use any High Frequency modality, but, contrarily, in cases of Suppression, Auto-Condensation may be used as a stimulant.

**Cautions** When administering a d'Arsonval treatment the long metal handle must be grasped firmly with both hands, and care exercised that the cords do not touch one another or hang within 1 inch of the body, at any point. It is well to place the patient's hands on a pillow or large book, in this way keeping them away from the body so that there will be no danger of sparking. Sparks might only prove annoying, yet in some instances are apt to burn the patient, severely.

Never move control levers "C", "K" or "G" with the current on. Make all adjustments with black button on switch "A" down.

Never permit the patient to drop the No. 52 Handle with the current on, or to relax the hold, as the resulting sparks will be sufficient to severely burn the fingers.

**Results Of Auto Condensation Treatments** First: They have a more powerful action on all forms of germ life than any other electrical modality. Second: Judging from clinical experience, by means of molecular or atomic massage, the increased bodily resistance is lowered materially.

Third: The use of a Sphygmomanometer, before and after treatment, usually shows a fall of from 5 to 10 milliamperes. A Sphygmomanometer reading twenty-four hours after the treatment will show that there has been only a slight raise in the Blood Pressure since the last reading was taken. This fall is secured positively without producing heart depression.

Fourth: Numerous physiological laboratory tests have proved that with the High Frequency Current we can disintegrate a calcareous substance, and we have every reason to believe that the same action takes place in a case of calcareous deposits on the arterial walls.

Fifth: With the lowering of the Blood Pressure and the disintegration of the calcareous deposits, it is very natural to infer that the arteries will regain their normal diameter and elasticity.

Sixth: A High Frequency Current positively stimulates the elimination of carbondioxide.

Seventh: The immense amount of Ozone, or pure Oxygen, set free along the path of High Frequency currents, takes care of much of the waste products of the body by hastening their elimination through proper channels. Laboratory tests show this to be especially the case with uric acid.

Determine the size of your electrodes, carefully.

Never apply a dry electrode to a dry skin. Either cover the metal and skin with soap lather, or use moist padding, or wet with a saline solution.

Never permit an electrode to move out of position with the current on.

Treatments will average from 10 to 12 minutes.

**How Obtain** Set lever "C" on point 2.

**Diathermy**

Set lever "K" on point 1.

See that lever "G" is on "Off" point.

The setting of lever "H" is immaterial.

Have Spark Interrupter points "B" open not over 1/6 turn.

See that black button on switch "A" is down.

Use the No. 306 Cords to make connections from the Diathermy Electrodes to the posts marked "d'Arsonval" on the Cabinet. Be sure that the electrodes are placed directly on the bare skin and in perfect contact.

If the electrodes are of bare metal, that is, not covered with a padding, both the metal and the skin to which it is to be applied should be thoroughly moistened to overcome the usual resistance of the epidermis; either with plain salt water or the more improved method of coating thoroughly with a soap lather. If the electrodes are of the "Pad" variety, they should be thoroughly soaked in salt water, first.

See that the connecting cords are not crossed, touching one another or touching any part of the patient.



Turn on the current by pressing red button on switch "A". Watch the needle on the Milliampere Meter and increase or decrease the volume of output by turning the regulating screw "B" to the left or right.

Never move levers "C", "K" or "G" with the current on, and *never*, under any consideration, allow the pads to move from their original positions while giving a treatment. If sufficient milliamperage is not obtained with the control levers set on points as above, press black button on switch "A", advance lever "C" to points 3, 4 or 5, depending on how much more current is desired.

Lever "K" may also be advanced to points 2 or 3, but bear in mind that while lever "K" on point 1 delivers an output of *highest possible frequency and least possible electrical sensation* to the patient, and lever "K" on point 2 delivers a *medium frequency*, that when lever "K" is on point 3 and the *highest possible power* is obtainable this is also the setting of *lowest frequency or oscillations* and unless conditions are ideal, the patient will feel too much of the Sinusoidal "picking" sensation when using this latter setting.

It is very necessary that the spark points "B" meet one another squarely, that their faces are not carbonized from possible previous excessive d'Arsonval or High Frequency Treatments and that they have careful adjustment, when administering Diathermy.



Hearing the Inner Ear



**Heating The Inner Ear** A novel and exceedingly effective method of heating the Inner Ear is accomplished with Diathermy.

Have the patient hold one of the Handles (No. 311) snugly in the palm of each hand clamping them in place with the thumbs.



No. 311 Handles

Set lever "C" on point 5.

Set lever "K" on point 2.

See that lever "G" is on "Off" point.

Setting of lever "H" is immaterial.

Have Spark Interrupter points "B" open not over 1/5 turn.

See that black button on switch "A" is down.

Use the Cords (No. 312) and make connections from these Metal Handles to the posts marked "d'Arsonval" on the Cabinet. If the palms of the hands are dry, moisten them a bit first.



No. 312 Cords

Have the patient place her fingers on the sides of the head, two in front of the ear and two under the ear. Start the current by pressing the red button on switch "A" and open the spark interrupter points "B" until there is a decided feeling of warmth at the points of contact at the finger tips. Have patient remove one finger from each side, slowly, and the heating will become more marked under those fingers still in contact. Have patient remove a second finger and slowly slide the remaining two onto the ears *but keep them (the fingers) in good contact with the skin.*

Have patient insert the Index fingers into the ears, and after making sure that the volume is not too great, remove the third fingers from each side, leaving only the Index fingers in actual contact, with a concentration of current and resultant heating through the head, which heating cannot be obtained by any other method. This produces as much Internal Heating as Surface.

You may even set lever "C" on point 5 and lever "K" on point 2, if the patient can endure the warmth, or if the heating seems too great, set lever "C" back on point 3 and adjust the spark points "B" a trifle closer together.

There are two methods of applying this treatment to the patient—either as above, with you operating the Machine, or place the patient on a regular straight-backed chair (facing the Machine), hold the Handles (No. 311) in your own hands, and apply your fingers as contacts to the face.

### Application Diathermy to Limbs

A simple effective method of applying Diathermy to the lower limbs is to place the feet into trays filled with salt water, which fluid is connected to the Cabinet by means of the special Electrodes (No. 618) in the same manner as you would connect the Diathermy



No. 618 Connector

Electrodes. For applying this method to the arms and shoulders, place the hands in the trays.

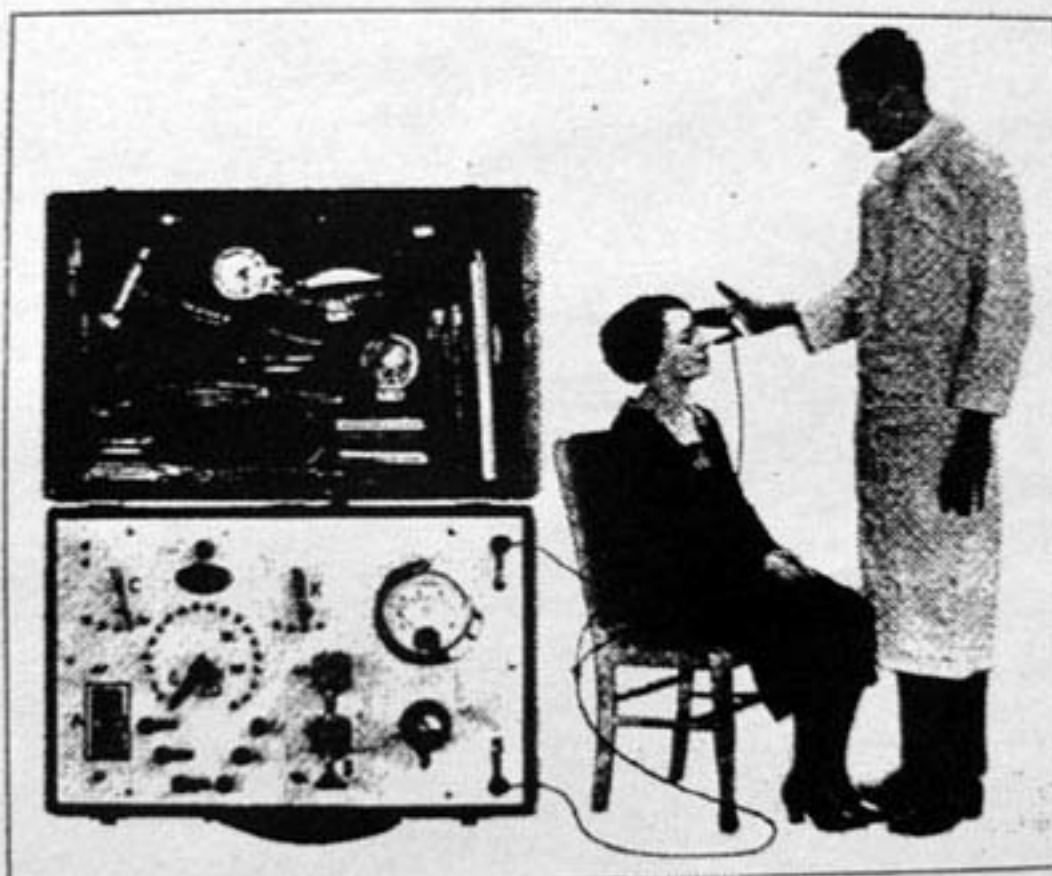
Placing the feet in the trays and with all control set as for "Heating the Inner Ear" as described above, with the exception that lever "K" should be placed on point 2, will produce a general warming throughout the legs, with the concentration at the smallest diameters. Placing the hands in the trays will send the warming current up the arms and over the back and chest.



### Indirect Application Of Diathermy

An indirect modified Diathermy is obtained by using the Chair Pad (No. 410) as one of the electrodes. The patient is placed on the pad, which is in turn connected to the d'Arsonval post nearest the meter on the Cabinet. The other connection is made from the opposite post (d'Arsonval) to the Hand Electrode (No. 614). Slip this electrode over your own hand, see that it makes good contact on the palm, be seated on the pad and try the treatment on yourself, first.

Set lever "C" on point 4.  
Set lever "K" on point 2.  
See that lever "G" is on "Off" point.  
Setting of lever "H" is immaterial.  
Close Spark Interrupter points "B" and then open about  $\frac{1}{4}$  turn.



Indirect Diathermy

Place your fingers in contact with the forehead and then have a third person press the red button on switch "A". Move your fingers around down over the nose, between the eyes, over the cheek, down under the chin and around the neck. Note the smooth heating effect obtained. Keep the fingers in positive contact with the skin at all times, but massage gently back and forth, and you will be convinced that congestion, from most any cause, must yield very readily.

**Fulguration (Electro-Coagulation)** *A Destructive Process* for coagulating tissues to any desired depth.  
Leaves sterilized wounds.  
Leaves normal cells intact.

The Blood and Lymph Channels are sealed, lessening the likelihood of Metastasis in cases of malignancy.

Recommended for use in:

Destroying Growths and Infective Granulomata of the Skin and Mucous Membrane of the Mouth, Nose, Pharynx, Tongue, Larynx and Oesophagus.

When it is desirable to concentrate a greater volume of heat on one side than the other, bear in mind that the heating effect will be obtained in exact inverse proportion to the square inch surface covered. As an example—should you use the 3x6" Pad (No. 690) on one side and the small round Disc (No. 606) on the other, you will have covered in the first instance, 18 square inches, and in the latter, approximately 3½ square inches, and the heat under the No. 606 Disc will be a little more than 5 times as great as under the larger pad.

The larger the electrode the greater the diffusion of energy, whereas, inversely, the smaller the electrode the greater will be the concentration, and it is possible, by placing a very large pad on one side (which pad we will call the indifferent electrode) and a very small applicator on the opposite side (which applicator we will call the active electrode) to generate sufficient heat under the latter to actually coagulate the tissues.

**Fulguration (Desiccation)** *A Dehydrating Process.* A successful treatment for all accessible benign neoplasms of the Skin and Mucous Membranes. It is curative in localized

Malignant Lesions.

Recommended for use in:

The removal of Bladder Papilloma, Lupus Vulgaris, Warts, Moles, etc., and the Desiccation of Tonsils.

Fulguration currents may be obtained from the "Lightning" Cabinet in two distinct forms: 1—the Tesla discharge from pole "D", which will be of high voltage and considerable spark length, or, 2—from the d'Arsonval windings, which deliver hot caustic sparks of low voltage but high milliamperage.

For the ordinary application of Fulguration as illustrated on page 30, for removal of simple Nevi, Papilloma, Warts, etc., proceed as follows:

See that black button on switch "A" is down.

See that lever "C" is on point 2.

See that lever "K" is on point 1.

See that lever "G" is on point marked "Off".

Setting of lever "H" is immaterial.

Close Spark Interrupter points "B" and open about ¼ turn.

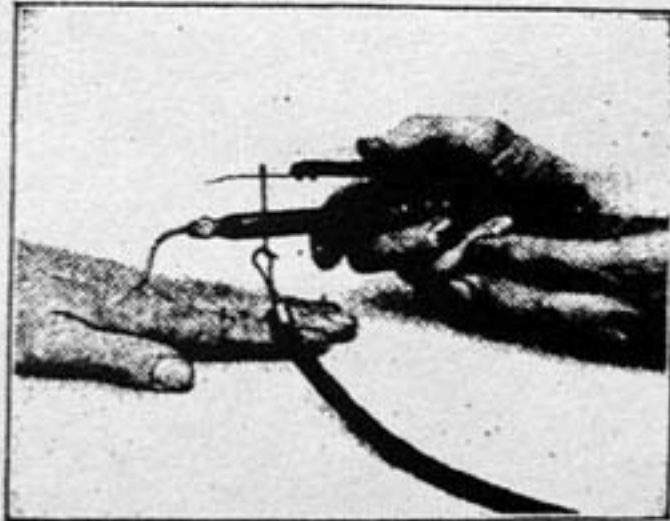


Make connection with the heavy black insulated High Frequency Cord from pole "D" to the small hook in the Fulguration Handle (No. 20). Insert one of the small aluminum points into the end of this handle. Grasp the Fulguration Handle in the manner illustrated on page 30, with the fingers well away from the metal.



Press the red button on switch "A" and gradually open Spark Interrupter points "B" until you are able to produce about  $\frac{1}{8}$  inch spark discharge from the Fulguration tip. To make this test, hold a piece of metal in the opposite hand and approach this with the Fulguration tip to ascertain the length of spark.

You may increase or decrease the length of spark by varying the adjustment of Spark Interrupter points "B".



Application Fulguration

There are two ways of applying the Fulguration point: 1—either holding it a short distance from the object under treatment and then pressing the spring lever on the handle to carry the spark across, or, 2—place the point directly on the spot, press the spring lever and then remove the electrode to beyond sparking distance. A few short applications of less than a second each, are generally sufficient for removing the smaller growths.

Never treat beyond the point at which the growth turns white. It is advisable to have your patient return to the Office after three days' time, during which period a scab should have formed. If not, repeat the Fulguration treatment. Usually the growth will have disappeared after one application.

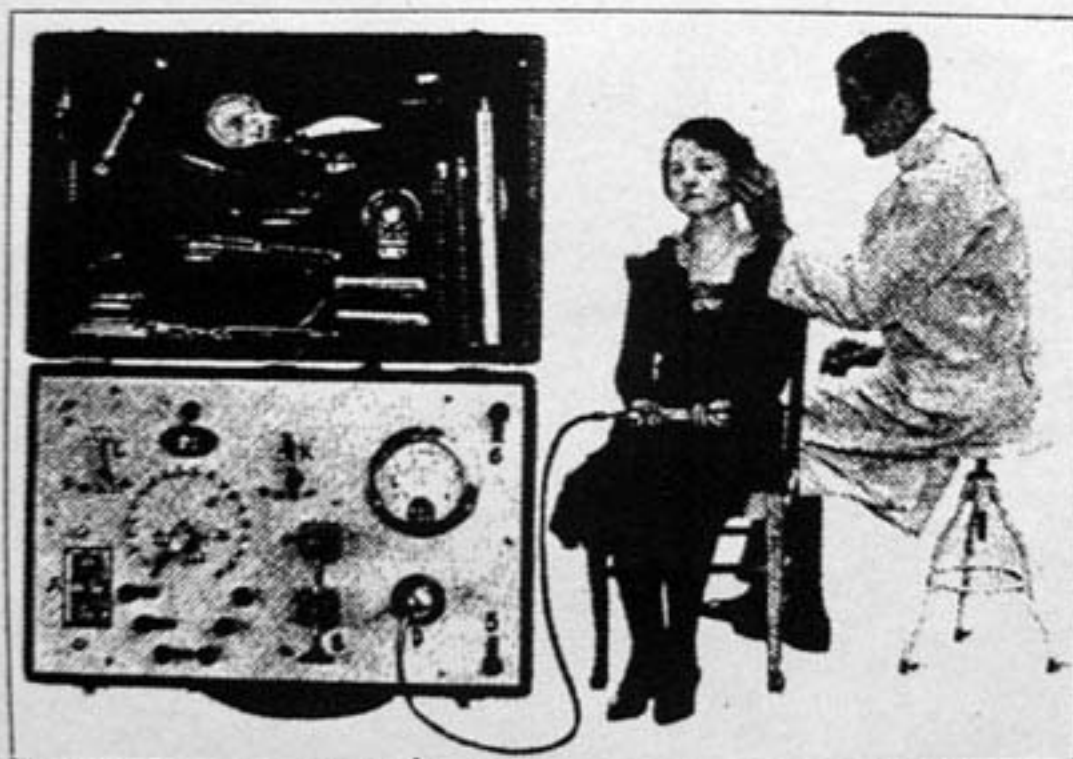
Fulguration is rather painful, and it is recommended to use a local anesthetic. A general anesthesia is sometimes necessary.

**Indirect Fulguration** Set lever "C" on point 4.  
Set lever "K" on point 2.  
See that lever "G" is on point marked "Off".

Setting of lever "H" is immaterial.

Have Spark Interrupter points "B" open about 1/6 turn.

Use the heavy High Frequency cord and make connection from Pole "D" to the Metal Handle (No. 52). Have patient hold the handle in both hands. Hold one of the pointed Fulguration tips in your own fingers; seat the patient comfortably; press red button on switch "A" and approaching the Mole, or whatever it is you wish to attack, with the metal point, you will note that the current comes



Indirect Fulguration

*from* the patient instead of from the point *to* the skin. This application is a great deal less painful than the direct method, the operator will feel no sensation, no ill effects will result, and a greater volume of current may be employed.

Another method, from the d'Arsonval windings, is almost an Indirect Diathermy application. Place the patient on the Chair Pad (No. 410) which pad is connected to one of the d'Arsonval posts on the Cabinet, and the wire from the opposite d'Arsonval post is connected to the Fulguration Electrode (No. 20). Application to the patient is made as under heading "Fulguration." The sparks delivered, will be shorter but a great deal hotter and more caustic in action. This method may be carried to a point where actual coagulation of the part is accomplished.

**Cautery** Set lever "C" on point 1.

Set lever "K" on point marked "Off".

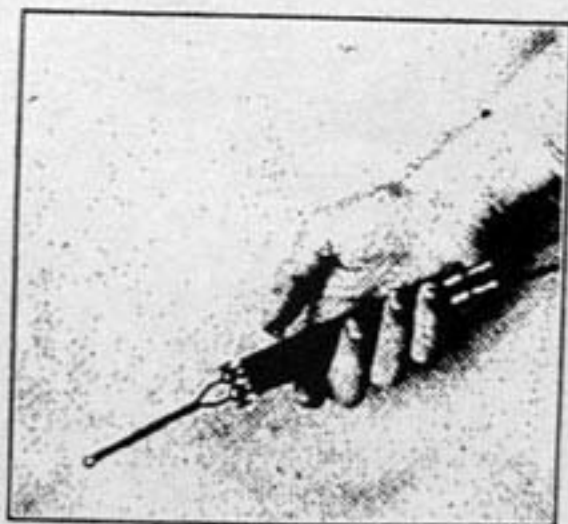
Set lever "G" on point marked "Off".

Place lever "H" on contact "C".

Open Spark Interrupter points "B" by turning regulating screw 2 full turns to left (counter clockwise). The left half of your Cabinet, only, is now in operation, that is, everything to the right of lever "K" is automatically cut off.

Use the heavy Maroon Cords (No. 306) and make connection from the two posts marked "Cautery" to the binding posts on the end of the Cautery Handle (No. 301), in the manner illustrated. You will note that there is a contact button on this handle, for the purpose of making and breaking the circuit to the Cautery Knife.

Select the Cautery Knife you wish to use and mount it at

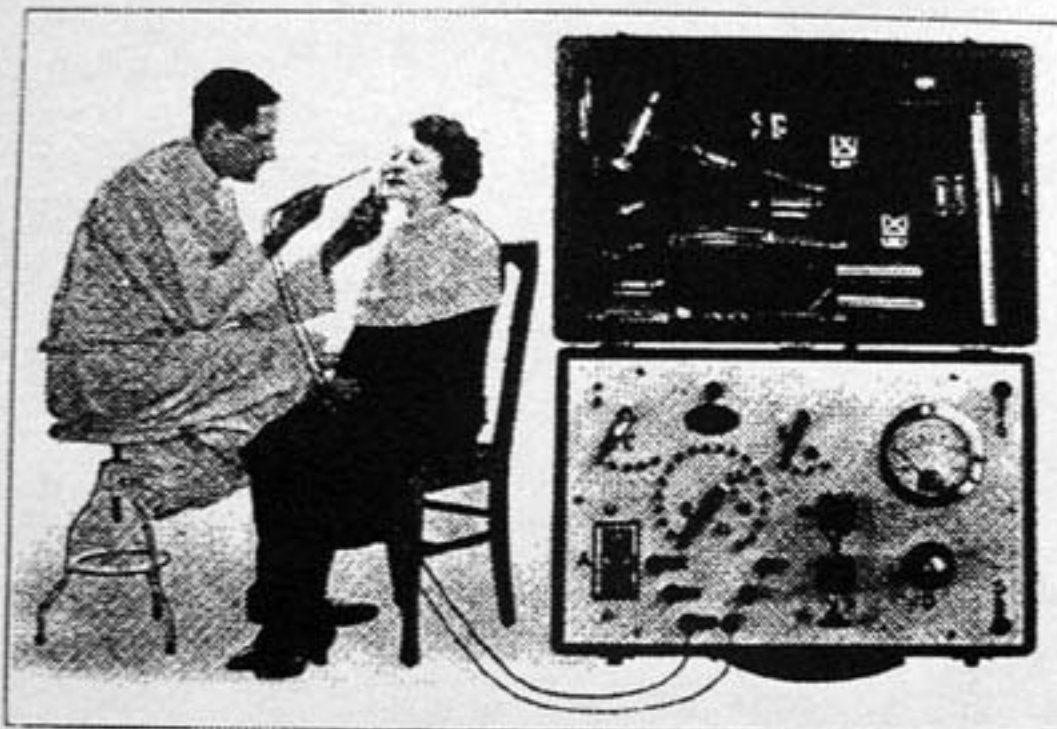


the desired angle in the opposite end of the Handle. Press the red button on switch "A" and gradually advance lever "G", one button at a time, pressing the small contact knob on the Cautery Handle for each step, until the tip of the knife becomes a cherry red.

If you employ a knife heavier than those received with the "Lightning" Outfit, and sufficient heat has not been obtained by the time lever "G" reaches the end of its movement, cut off the current at switch "A", advance lever "C" to point 3, again press red button on switch "A" and try as before. Further increase may be obtained by again cutting off the current and placing lever "C" on point 5.

Be careful that lever "G" is not advanced too far in making your test, and that you do not maintain the pressure on the contact knob in the handle too long, as there will be danger of burning out the Cautery Knife. A cherry red color is desirable.

Ordinarily when operating the Cabinet on the 110 Volt line, lever "G" need only be advanced to buttons 5 or 6 to properly heat the knives furnished. The use of the Cautery Knife is mainly for sealing purposes, Nasal Hemorrhages and opening Boils.



Application Cautery

**Helpful Hints (Cautery)** If at any time the Cautery Knife does not heat properly when connected and operated as above, first see that your pilot light is burning to make sure that you have current entering the Machine; then disconnect the Cautery attachments and try the High Frequency setting. Look closely at levers "C", "G" and "H" and make sure that they are in proper contact on the buttons. Look, also, to the Knife, itself, as the copper bars in which the tip is held might possibly have been jammed together in packing or shipping, causing a short circuit. This latter difficulty can be corrected with the aid of a knife blade, by simply spreading the bars.

**Diagnostic** Set lever "C" on point 1.

**Illuminator** Set lever "K" on point marked "off".

Set lever "G" on point marked "off".

Place lever "H" on contact "D".

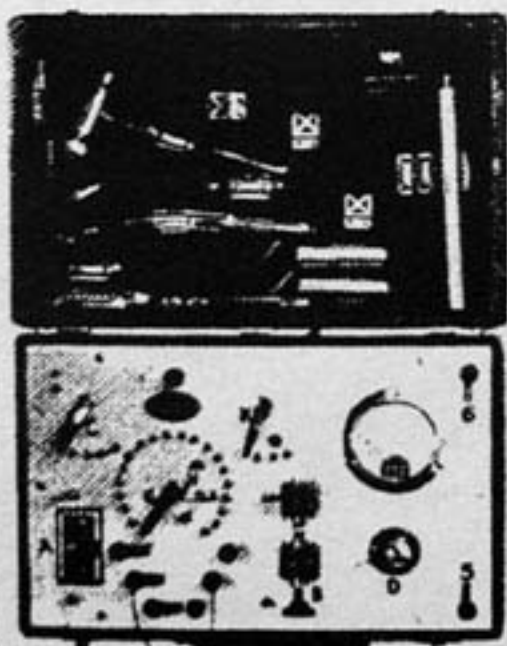
Open Spark Interrupter Points "B" by turning regulating screw 2 full turns to left (counter clockwise). The High Frequency section of your Cabinet is cut off entirely, as described under "Cautery".





Connect the tips on end of the Diagnostic Lamp Cord (No. 321) under the two posts marked "Diagnostic". See that the small lamp bulb is securely screwed into the small socket on the end of the nickel plated handle, press red button on switch "A" and cautiously advance lever "G" until a coloring shade just short of white, is reached.

Should you use a lamp other than furnished with your Outfit, with a greater voltage capacity, and greater current is required than is obtained by advancing lever "G" to its limit, shut off the current at switch "A" and advance lever "C" to point 3; repeat the test and if still insufficient, again cut off the current and advance lever "C" to point 5. The capacity of the transformer is ample to light any lamp used for Diagnostic purposes, the voltage capacity running from 2 to 12.



Using Diagnostic Illuminator

The Diagnostic Illuminator (No. 321) furnished with the "Lightning" Cabinet, has many uses. There is no danger of shocking while operating, and the lamp bulb, itself, does not heat up. This light may be used for trans-illumination of the Antra and Frontal Sinuses, and for examination of the Throat and Orifices.



No. 321

**Helpful Hints** Should your lamp not illuminate properly when trying as above, insert the Pilot Lamp into the holder and if this lights up, it is possible that the original Diagnostic No. 322 Bulb is either burnt out or cracked. Two of these bulbs are included with the Cabinet.

Should the Diagnostic Illuminator fail to work, regardless of tests or settings, and the Cabinet itself be functioning properly as evidenced by the Cautery and High Frequency operations, return the Illuminator at once, for replacement. If, on examination, we find the trouble due to faulty construction or material, replacement will be made gratis, but at no time will burnt out or damaged lamp bulbs be replaced except at the usual list price.

**Sinusoidal** The Sinusoidal Current is Sedative and Analgesic. It is a valuable aid in Muscular Atony, many forms of Paralysis, Congestion of the Viscera, Intestinal Stasis, Atrophied conditions of the Muscles and Nerves and Sluggish Circulation of the Venous Blood. Also can be used to good advantage as a means of exercising the muscles after the removal of the cast in fracture cases.

To obtain this modality from the "Lightning" Cabinet:

Set lever "C" on point 1.

Set lever "K" on point 1.

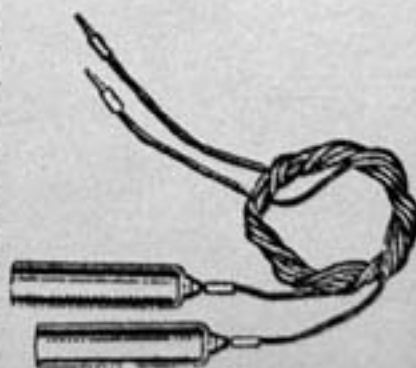
Set lever "G" on point marked "OFF".

Place lever "H" on contact "S".

Open Spark Interrupter Points "B" by turning regulating screw 2 full turns to left (counter clockwise). The High Frequency section of your Cabinet is now cut off entirely, as described under "Cautery", on page 32.

See that the black button on switch "A" is down.

Make connection with the light Maroon Cords (No. 312) from the two posts marked "Sinusoidal" and to the Nickel-Plated Handles (No. 311). Have the patient hold these handles, firmly, one in each hand. Press red button on switch "A" and then gradually increase the current supply by advancing lever "G" as desired, or up to the point of tolerance of the patient. Limit this treatment to 3 or 4 minutes as longer time will prove tiring to the parts affected.



Nos. 311 and 312 Cords and Handles

**Application Sinusoidal With Felt Pad** When using the Spongio Disc (No. 314) for applying Sinusoidal Current, saturate same thoroughly in warm salt water and use the same settings of control levers described above. Connect tapered tip end of one of the light maroon cords (No. 312) to one of the No. 311 Handles, and the other cord to the binding post on the Spongio Disc Handle



No. 314 Disc



No. 315 Handle

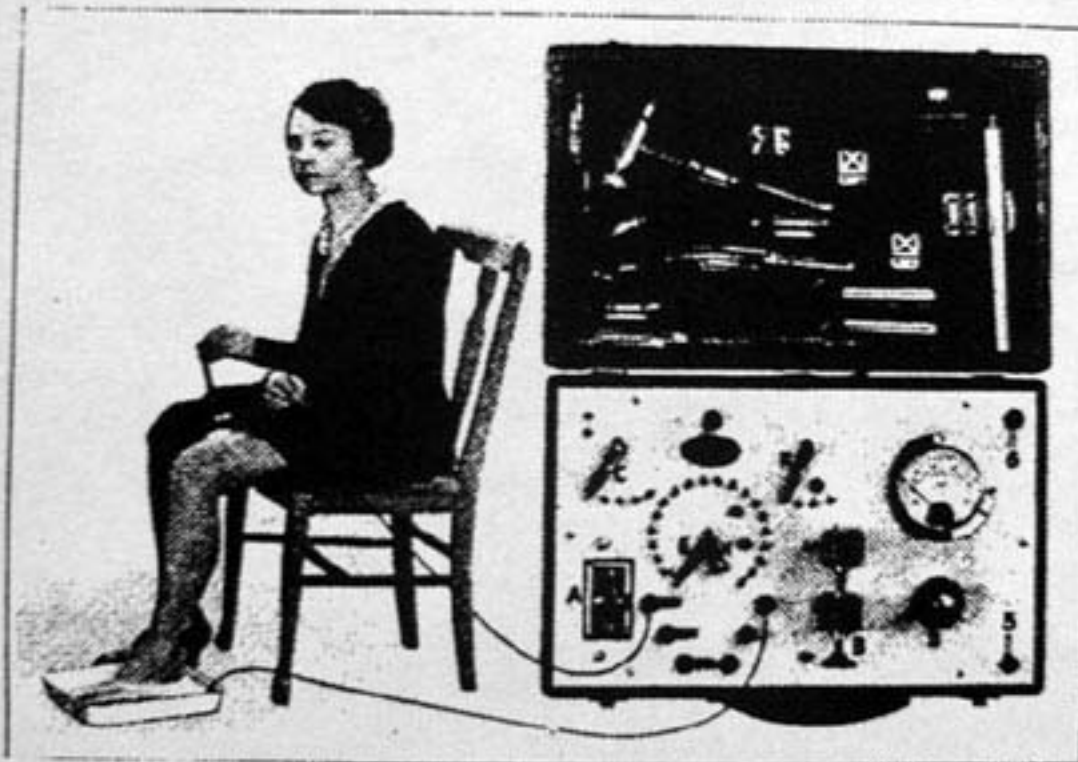
(No. 316). Have patient hold the metal handle in both hands, and place the Spongio Disc directly in contact with the part to be treated. Advance lever "G" slowly, until proper amount of current has been applied.



Application Sinusoidal with Felt Pad

**Application Sinusoidal (Water Contact)** To obtain best results in paralysis of the arms, or across the shoulders, immerse the hands in two pans or trays of water, connecting the water to the Sinusoidal Current outlets. Either permit the Handles (No. 311) to lay directly in the water or use the specially constructed Liquid Bath Connectors (No. 618) as illustrated.

The same technic applies to the lower limbs by placing the feet in the trays. If it is desirable to use greater current on one limb than the other, place a good handful of salt in the tray where the most current is wanted. The action of the salt reduces the electrical resistance of the skin and allows a more free passage of the current. Or, if you wish to obtain a concentrated action on a certain section of a limb, place the Spongio Disc (No. 316) up as high on that limb as is necessary to get



Application Sinusoidal

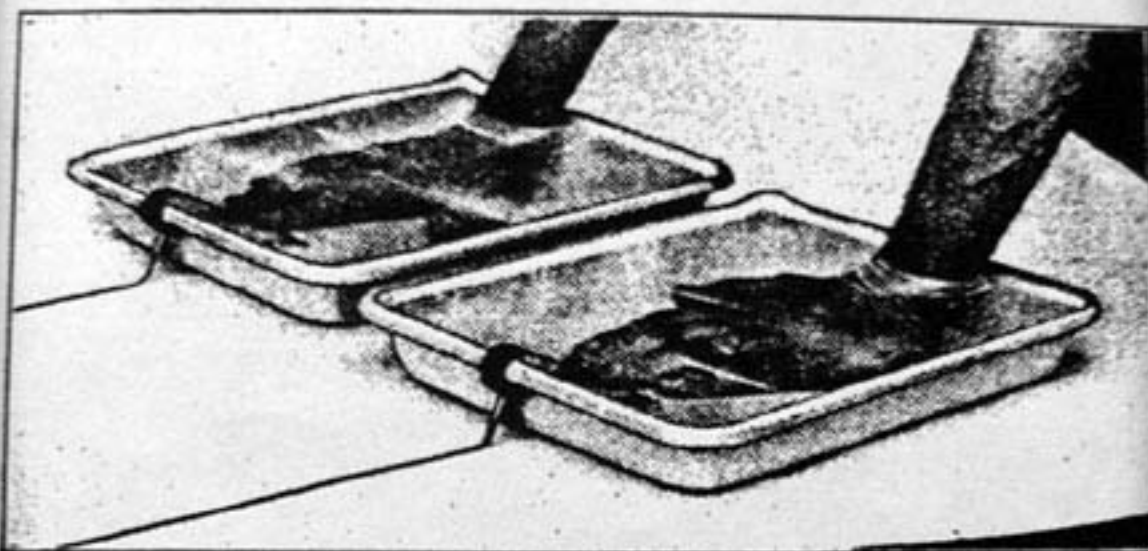
just beyond the affected area, with the hand or the foot in the tray, and in that way concentrating the muscular contracting action between those poles.

**Helpful Hints Sinusoidal** Sinusoidal Current is contra-indicated in cases of High Blood Pressure. If your patient has an abnormal blood pressure, use your d'Arsonval treatment, first.

Always bear in mind that the Sinusoidal discharge is of fairly low voltage and the skin at point of contact of the electrodes must always be thoroughly moistened with salt water or soap lather, to overcome the resistance of the skin at that point as much as possible.



The Sinusoidal Current as delivered by the "Lightning" Cabinet has but one rate of frequency discharge, and although the voltage can be varied at will, very often cases are encountered where "Interrupted" Current is necessary. You may interrupt the Sinusoidal Output by pressing the red and black buttons on switch "A" alternately and at the speed desired.



**Cautions For  
Cautery  
Diagnostic  
And  
Sinusoidal**

Never move levers "C", "K" or "G" with the red button on switch "A" down.

Never permit levers "C", "K" or "G" to stop between points—that is, these levers must always make contact on one button only.

Always see that Spark Interrupter Points "B" are open at least 1-32 inch when using the Cautery, Diagnostic and Sinusoidal Currents.

Never leave the Cabinet with the red button on switch "A" down, and the pilot lamp burning.

Do not expect to obtain Cautery with lever "H" on "D" or "S". This circuit is completed only when "H" is making contact on point "C", and the Diagnostic and Sinusoidal circuits are only completed when lever "H" is set on "D" and "S" respectively.

**Ozone** It is a well known fact that wherever there is an electric spark, or wherever a discharge of electrical current is interrupted from any cause, Ozone is liberated. The high voltage discharge of High Frequency Current as delivered by the "Lightning" Cabinet from pole "D", generates an unusually great amount of Ozone.

One of the most valuable uses of the High Frequency Current is as a blood energizer through this particular agent. Ozone is formed in great measure at the point of contact of High Frequency Electrodes, and seeks, quite naturally, the path of least resistance, which, in the body, is through the veins as they contain the conductable carbonates and impurities, which in turn are mostly in need of cleansing.

Ozone may be inhaled from the special Generators made for the purpose and used to good advantage after filtering through Oils of Eucalyptus and Pine Needles, for Catarrhal troubles. An Ozone generator is not furnished with the Cabinet but can be purchased as an extra and we recommend the all glass Ozone Generator (No. 22) which is connected to pole "D" on the Cabinet in the same manner as you would an ordinary High Frequency Electrode.



No. 22 Ozone Generator

**Cataphoresis** Cataphoresis is the introduction of medicine through the unbroken skin, by means of an electrical current. and the High Frequency Glass Electrodes can be used to advantage for this purpose.

**Pilot Light** The Pilot Lamp, illuminated, indicates a closed circuit in the Cabinet. Always make sure that the light is out after ending a treatment, and before closing the lid and leaving the Machine.

**Trouble Suggestions** Should your "Lightning" Cabinet fail to work properly at any time, that is, after trying various settings of the controls, and you are unable to obtain the desired current, first unscrew the connecting plug from the lamp socket where you obtain the 110 volt current and insert a lamp that you know is in good condition, in this socket, to test whether or not there is current at that point. If this lamp fails to illuminate, go to the fuse box where the current enters your office or building, and look for a burnt out fuse (these fuses should be of 10 ampere capacity).

When the lamp lights up and you know that you have current at the desired socket, again connect the Machine and set controls as for example for operating the Cautery Knife. Should the knife fail to heat, remove it from the handle, advance lever "G" to the 5th button and complete a short circuit with some piece of metal from one post on the Cautery Handle (No. 301) to the other—that is, short across the posts where the knife would ordinarily be connected, and when making or breaking the contact, watch for sparking.

If no sparks are visible, you know the trouble is not in the knife but probably in the handle or the connections thereto. Disconnect the cords from the handle but leaving them connected to the Cautery posts on the Machine, and with the current on, touch their tips together, again watching for sparking. Carry this procedure down until you come to the actual outlets on the Machine, in an endeavor to locate the trouble. If, after shorting across from one Cautery post to the other, or from one Diagnostic or Sinusoidal post to its mate on the top of the Machine, you still fail to see sparks or any indication that the Machine is working, the fact should be reported to us at once.

*Never turn the "Lightning" over to an ordinary electrician, unless on our specific instructions.*

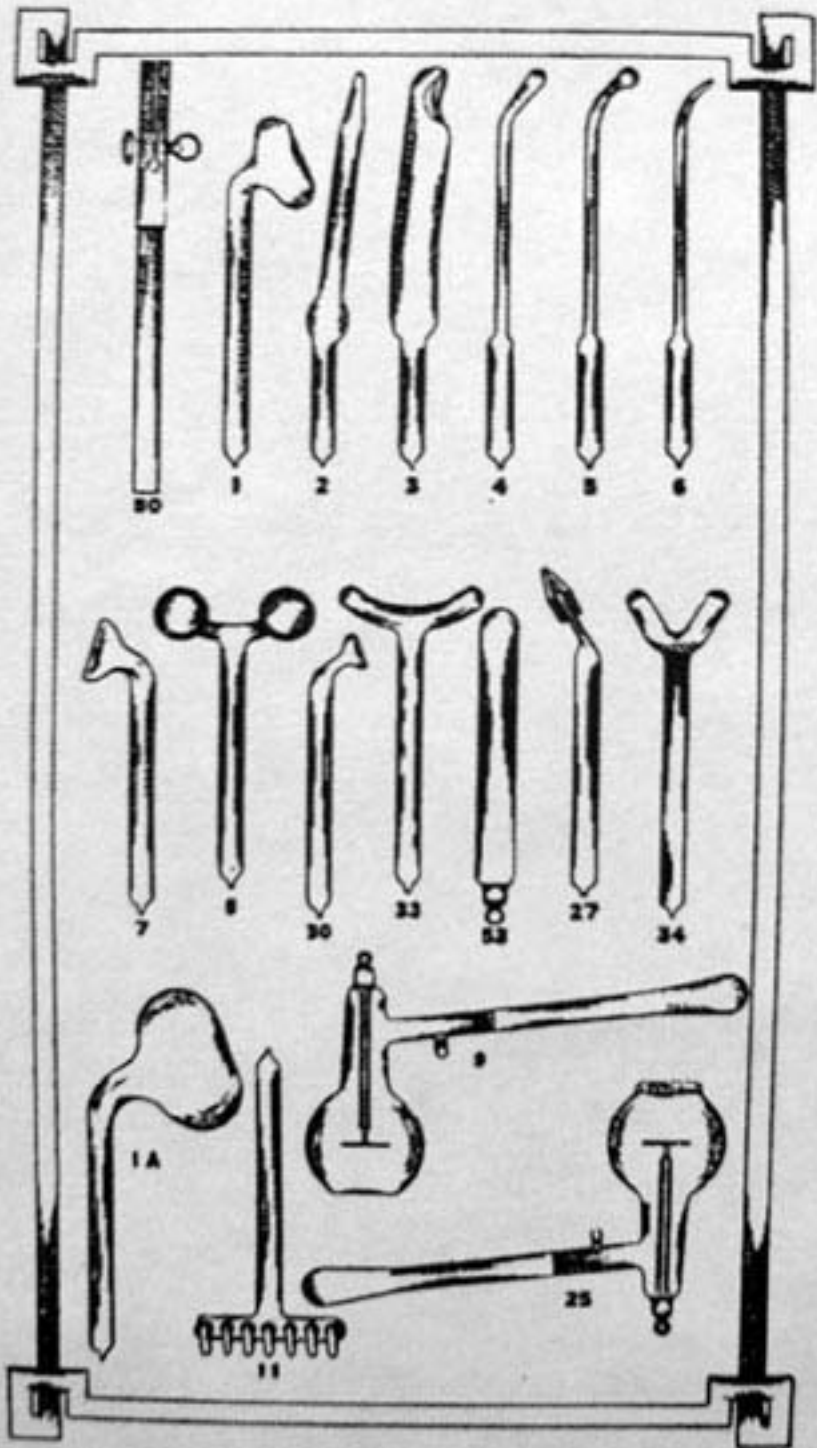
When making any tests, be sure that the control levers "C", "D", and "H" are making good contact on the buttons.

The same procedure as outlined above for "Cautery" may be followed for the Diagnostic and Sinusoidal Circuits with slight variations. When the little diagnostic lamp (No. 322) fails to illuminate, see that it is screwed firmly into the socket or disconnect the cords and short across from one diagnostic post to the other, etc.

Be sure to call our attention to any difficulty that you may experience.

On the following pages will be found various supplies and accessories which can be used to advantage with the "Lightning" portable.

### High Frequency Electrodes





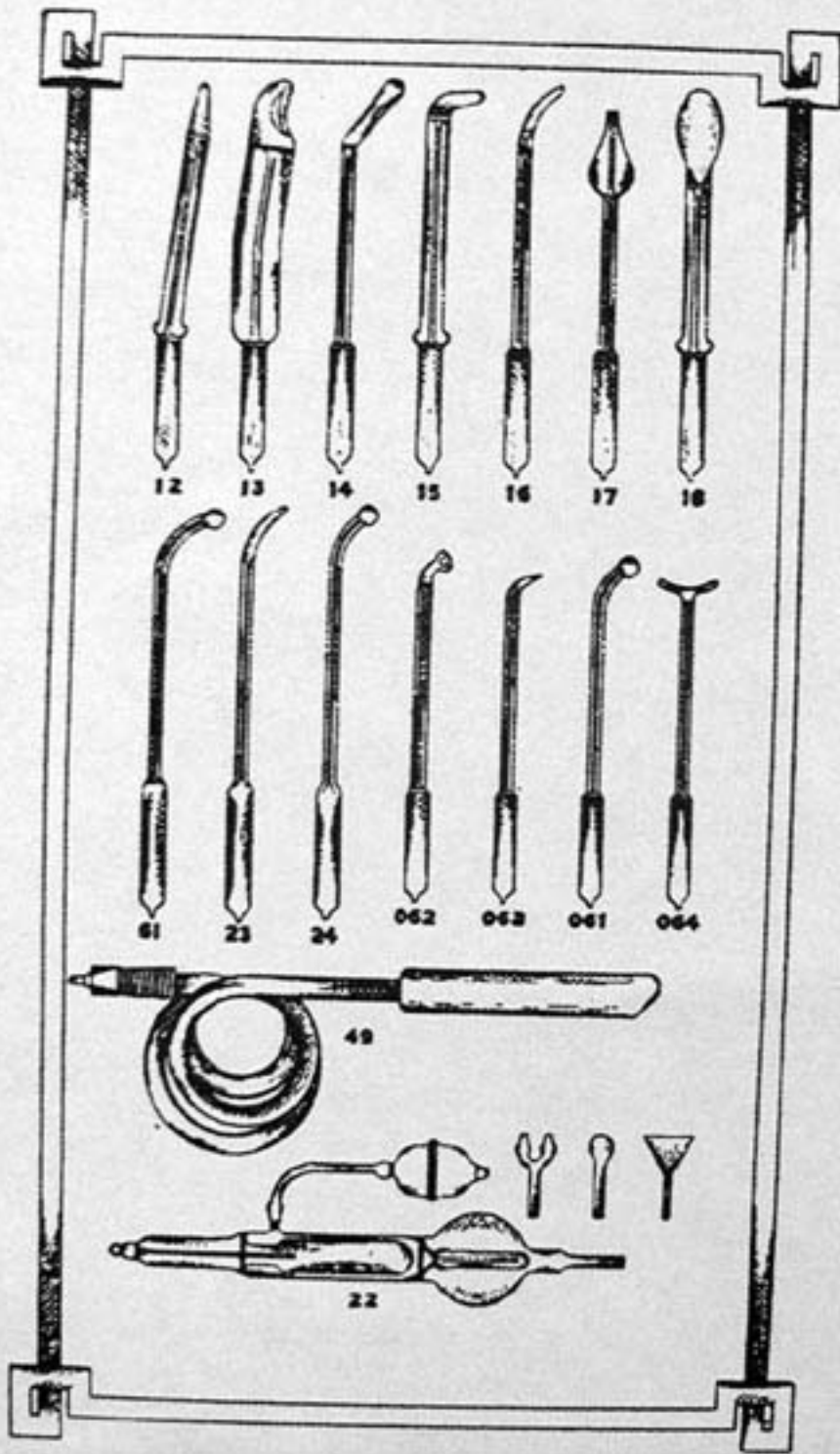
### High Frequency Electrodes

All our glass high frequency electrodes are made by us, of the very best glass obtainable; carefully annealed. All sizes and makes of holders can be fitted on request, but unless otherwise specified our standard  $\frac{5}{8}$ " size is furnished on all orders. While the plain electrodes suffice for all surface or superficial cavity work, the insulated electrodes are preferred where deep-seated areas are to be reached. The energy is confined to certain small areas only, and the section treated without leakage or waste of current.

All our electrodes are standard  $\frac{5}{8}$ " size, unless otherwise specified.

No.	Description	Code	Price
1	—Surface Glass High Frequency Electrode.....	<i>Bacca</i>	\$1.00
1A	—Surface Glass High Frequency Electrode.....	<i>Gram</i>	1.50
2	—Rectal Glass High Frequency Electrode.....	<i>Bagot</i>	1.00
3	—Vaginal Glass High Frequency Electrode.....	<i>Ballet</i>	1.00
4	—Nasal Glass High Frequency Electrode.....	<i>Balm</i>	1.00
5	—Throat Glass High Frequency Electrode.....	<i>Baric</i>	1.00
6	—Urethral Glass High Frequency Electrode.....	<i>Bark</i>	1.00
7	—Single Eye Glass High Frequency Electrode.....	<i>Barley</i>	1.00
8	—Double Eye Glass High Frequency Electrode.....	<i>Basal</i>	1.25
9	—Metal Disc Body Condenser Electrode.....	<i>Basic</i>	3.75
11	—Comb (Scalp) High Frequency Electrode.....	<i>Batia</i>	2.50
25	—Cataphoresis Electrode.....	<i>Binder</i>	4.50
27	—Glass Fulguration (Vacuum) Electrode.....	<i>Guad</i>	2.00
30	—Corn Glass High Frequency Electrode.....	<i>Biogen</i>	1.00
33	—Outer Throat High Frequency Electrode.....	<i>Biotic</i>	1.00
34	—Spinal High Frequency Electrode.....	<i>Bite</i>	1.00
50	—Universal Handle for $\frac{5}{8}$ " Electrodes.....	<i>Bolus</i>	1.00
53	—Glass Handle (Vacuum) for Indirect Treatments..	<i>Bismal</i>	1.25
54	—Similar to No. 53, except that it is arranged to fit the No. 49 Shock Proof Handle. For indirect treating.	<i>Banter</i>	1.00

### Insulated Glass High Frequency Electrodes



### Insulated Glass High Frequency Electrodes

No.	Description	Code	Price
12—Rectal	—Insulated.....	<i>Bazin</i>	\$2.00
13—Vaginal	—Insulated.....	<i>Beat</i>	2.25
14—Nasal	—Insulated.....	<i>Bed</i>	2.00
15—Post Nasal	—Insulated.....	<i>Beef</i>	2.00
16—Urethral	—Insulated.....	<i>Bela</i>	2.00
17—Inner Ear	—Insulated.....	<i>Belt</i>	2.00
18—Tongue	—Insulated.....	<i>Benzol</i>	2.00
22—Ozone Generator, complete.....		<i>Bidway</i>	10.00
23—Special Heavy Glass Urethral.....		<i>Gull</i>	1.25
24—Special Heavy Glass Throat.....		<i>Gum</i>	1.25
36—Insulated Prostatic Electrode.....		<i>Inpros</i>	1.75
37—Adenoid Electrode—Insulated (Murray).....		<i>Maner</i>	1.50
49—Insulated Rubber Handle and Cord. $\frac{5}{8}$ ".....		<i>Block</i>	3.75
61—Throat	—Insulated.....	<i>Breath</i>	2.00

### Insulated Shock Proof Handle for High Frequency Electrodes

Many operators complain of the danger of shocking either themselves or their patients with our regular No. 56 Handle, on account of the exposed metal connection. We therefore designed this special Insulated Handle, which has no exposed contacts and is absolutely shock proof. Made entirely of one piece of hard rubber, with the heavy insulated connecting cord fastened securely to the spring brass clamp inside.

No.	Code	Price
49—For $\frac{5}{8}$ " Electrodes.....	<i>Block</i>	\$3.75



No. 80

80—Extra Long Protected Handle.....	<i>Blesp</i>	6.50
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### Non-Vacuum High Frequency Electrodes

The Silvered "Non-Vacuum" Tubes are made in the same sizes and designs as the regular cataloged Vacuum Electrodes described in the foregoing. Plain or Insulated will be furnished, as ordered.

No.	Description	Code
2001	—Surface —Plain—2 inch face.....	<i>Rabat</i>
2002	—Rectal —Plain.....	<i>Rabid</i>
2003	—Vaginal —Plain.....	<i>Racer</i>
2004	—Nasal —Plain.....	<i>Raket</i>
2005	—Throat —Plain.....	<i>Radle</i>
2006	—Urethral —Plain.....	<i>Radio</i>
2007	—Eye —Single.....	<i>Radex</i>
2008	—Eye —Double.....	<i>Raffo</i>
2009	—Surface —Condenser Type, Medium.....	<i>Raged</i>
2010	—Surface —Condenser Type, Large.....	<i>Rally</i>
2011	—Comb —Scalp.....	<i>Ramic</i>
2012	—Rectal —Insulated.....	<i>Ranch</i>
2013	—Vaginal —Insulated.....	<i>Randy</i>
2014	—Nasal —Insulated.....	<i>Range</i>
2015	—Post Nasal —Insulated.....	<i>Rapid</i>
2016	—Urethral —Insulated.....	<i>Rasal</i>
2017	—Inner Ear —Insulated.....	<i>Ratan</i>
2018	—Tongue —Insulated.....	<i>Razel</i>
2023	—Urethral —Special Heavy Glass.....	<i>Razee</i>
2024	—Throat —Special Heavy Glass.....	<i>Razor</i>
2025	—Cataphoresis.....	<i>Reach</i>
2027	—Fulguration.....	<i>Ready</i>
2029	—Fulguration —Platinum Tipped.....	<i>Realm</i>
2030	—Corn —Small depression.....	<i>Rebec</i>
2033	—Outer Throat.....	<i>Rebus</i>
2034	—Spinal.....	<i>Recal</i>
2036	—Prostatic —Insulated.....	<i>Recto</i>
2052	—d'Arsonval Handle.....	<i>Redan</i>
2053	—Handle for Indirect Treating.....	<i>Reduc</i>
2058	—d'Arsonval Handle—Extra Large.....	<i>Reefy</i>
2061	—Dental Pyorrhea —Insulated.....	<i>Refit</i>
2062	—Dental Cocain —Insulated.....	<i>Reign</i>
2063	—Dental Cavity —Insulated.....	<i>Reims</i>
2064	—Dental Outer Gum—Insulated.....	<i>Relax</i>

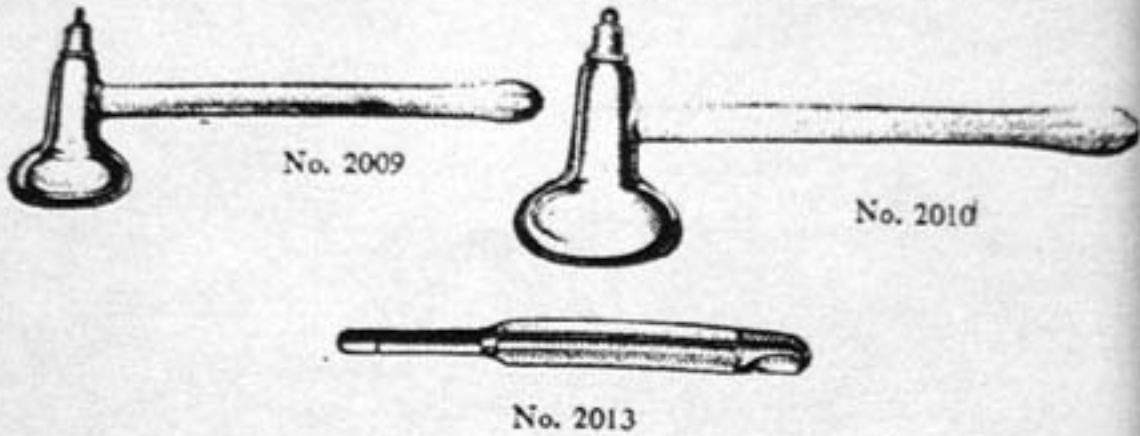
These Electrodes, with exception of Nos. 2009, 2010, and 2025 have our regular  $\frac{5}{8}$ " shanks.

Nos. 2009, 2010, and 2025 have Insulated Handles blown on the Electrodes themselves.

Price each.....\$7.50



### Non-Vacuum High Frequency Electrodes



### Universal Handle for High Frequency Electrodes

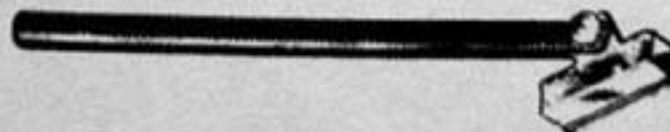
Insulated section made of hard pressed fiber, having nickel plated brass spring clamp on end, for holding Electrodes firmly in position. Large swivel ring connector to which is hooked the insulated cord, permits of perfect freedom of movement.



No.	Code	Price
50—For 5/8" Electrodes.....	<i>Bolus</i>	\$1.00

### Adjustable High Frequency Handle

Nickel plated clamp on end of long fiber insulated handle is arranged to swivel freely as desired to any angle. A very convenient arrangement especially for orificial work.



No.	Code	Price
56—.....	<i>Boman</i>	\$1.50

### Heavy Insulated High Frequency Cord

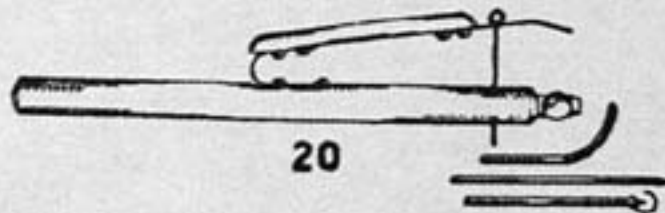
This cord is made of a stranded Copper conductor, covered with several layers of pure Gum Rubber. It is perfectly safe to touch any part of this cord even when passing considerable current, as the Rubber covering is heavy enough to afford ample protection. Cord is very flexible. At one end is mounted our standard cord tip, which will fit any of our machines. On the other end is fastened a swivel clasp.



No.		Code	Price
51	—Heavy Cord, 4' long.....	<i>Gait</i>	\$1.25
51-5	—Heavy Cord, 5' long.....	<i>Hirtz</i>	1.50
51-6	—Heavy Cord, 6' long.....	<i>Hoche</i>	1.75
51-7	—Heavy Cord, 7' long.....	<i>Hodge</i>	2.00
83	—Extra Heavy Protected High. Freq. Cord, 5' long.	<i>Malle</i>	2.50

### Fulguration Electrode

Fulguration is the best known method of applying the High Frequency Current for the removal of Warts, Moles and similar growths. When used in connection with a properly constructed machine, most excellent results can be obtained in removal of Neoplasms of the Urinary Bladder, and for the destruction of Cancerous Masses. Our No. 20

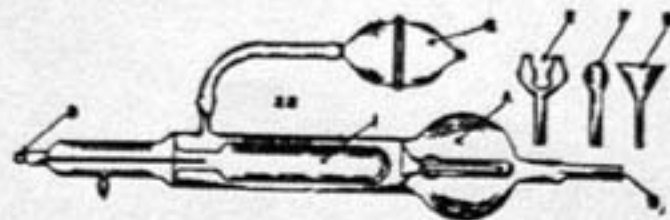


Electrode is supplied with three tips of different shapes for all surface work, and Rubber covered Steel Wire for introduction through Urethral Catheters or Cystoscopes will be furnished if desired.

No.		Code	Price
20	—Fulguration Electrode and Three Tips.....	<i>Gadol</i>	\$2.00
40	—Fulguration Wire, per foot.....	<i>Gag</i>	.12

### Ozone Generator

An ALL GLASS Ozonizer, made in one piece. Has two compartments, one for holding the purifying oils, and a vacuum chamber to which is connected the wire from any high frequency source.



No.	Code	Price
22—Ozone Generator, complete as illustrated.....	<i>Bidwy</i>	\$10.00
75—1 oz. Bottle Pine Needle Oil.....	<i>Malmo</i>	.40
76—1 oz. Bottle Eucalyptus Oil.....	<i>Malto</i>	.75

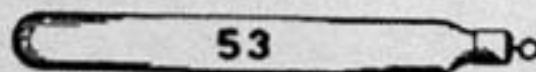
### Special Tonsil Fulguration Electrode



No.	Code	Price
29—Special Throat Fulguration Electrode similar to our No. 23, with Platinum wire tip mounted in end....	<i>Gerdy</i>	\$1.75

### Glass Vacuum Handles

For indirect treating with the high frequency current.

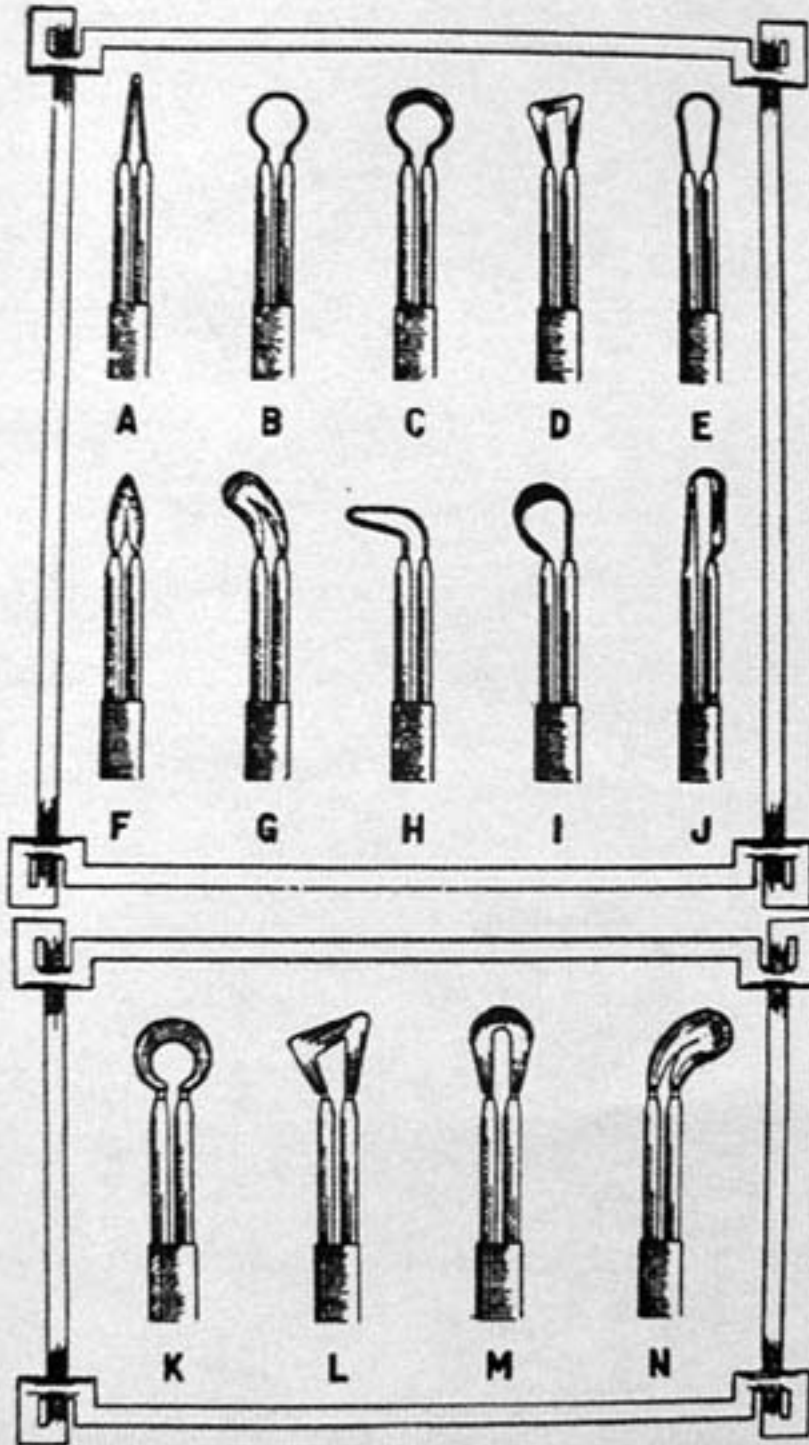


No.	Code	Price
53—Glass Handle.....	<i>Bismal</i>	\$1.25

### Indirect Treatment Handles

No.	Code	Price
54—Similar to No. 53, except that it is arranged to fit the No. 49 Shock Proof Handle. For Indirect Treating	<i>Banter</i>	\$1.00

### Cautery Electrodes



No.  
 305A to 305J—.....  
 305K to 305N—Heavy.....  
 Codes *Acmea, Acmeb, Acmeec, etc.*

Price  
 \$1.00  
 1.25



### Cautery Knives

The carefully shaped knives are securely mounted into the copper bars. These knives are shaped to conform with most any requirements for all purposes. The copper bars are enameled to withstand heating and handling indefinitely. Knives are made of a special alloy, of high electrical resistance.

### Cautery Handle

Arranged to hold the platinum tipped knives in any one of five positions. Has contact switch for convenience in operating.



No. 301

No.	Code	Price
301—Cautery Handle.....	<i>Acetyl</i>	\$2.50

### Cautery Cords

Heavy copper conducting cords, constructed of many fine stranded wires, which are capable of carrying a very heavy amperage of current, and yet are very flexible and easy to handle. Covered with a woven, mercerized cotton sheeting, maroon colored.

Regular stock lengths, 6 feet. Special lengths to order.



No.	Code	Price
306—Cautery Cords.....	<i>Achor</i>	\$1.00

### Auto Condensation Handle

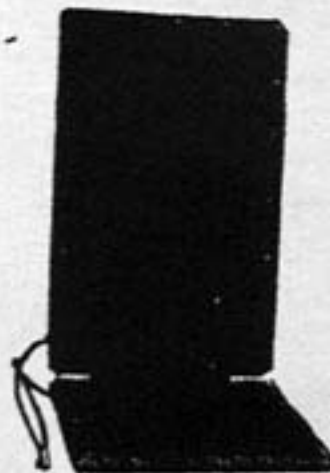
Made of brass tubing, heavy nickel plated; long enough and of sufficient diameter to enable the patient to grasp firmly and make contact. Arranged with binding post on end for fastening connecting wire.



No.		Code	Price
52	—Handle 1" Diameter by 9" long.....	<i>Carota</i>	\$1.00
58	—Handle 1½" Diameter by 16" long.....	<i>Authan</i>	1.80

### Auto Condensation Chair Pad

Frame made of five-ply veneered oak. On one side is mounted a layer of conducting metal covered with a Di-Electric of one-eighth inch black sheet fiber. Pad is made in two sections to conform to the shape of an ordinary chair. Parts are hinged together to be used on a table should the operator prefer that position.



No. 410

No.		Code	Price
410	—Chair Pad.....	<i>Cado</i>	\$10.00

### Spongio Discs and Handles

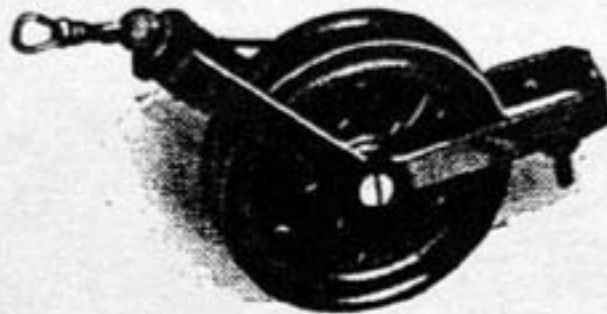
Universal Handle, hard rubber, with Felt covered disc.



No.		Code	Price
316	—Felt Pad Disc and Handle.....	<i>Carmin</i>	\$1.00

### Fischer Cord Reel

For use where the High Frequency Electrode is to be applied at a greater distance from the cabinet than is possible with the regular Rubber Covered Cord. Takes up all the slack wire, at any distance, yet permits operator to move the electrode around at will. Length of connecting cord, 8 feet.



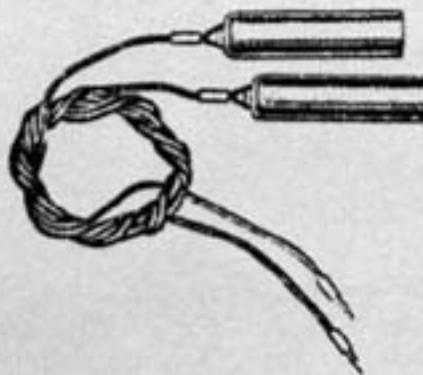
No. 528

No.	Code	Price
528—.....	<i>Fagin</i>	\$2.75

### Metal Treatment Handles

Nickel plated handles, for Sinusoidal, Galvanic and Faradic treatments.

No.	Code	Price
311—Handles, per pair.....	<i>Caries</i>	\$0.75



Nos. 311 and 312

### Treatment Cords

Made of very flexible Copper stranded wire, covered with a mercerized sheathing, maroon colored. Have metal tips on both ends.

No.	Code	Price
312—Cords.....	<i>Carol</i>	\$0.60

### Liquid Bath Connector

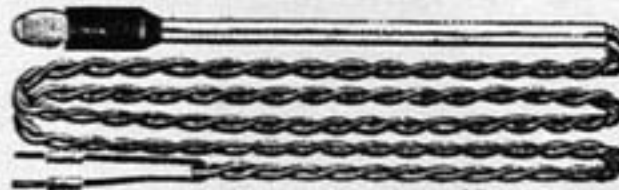
For carrying the Sinusoidal or Diathermic Currents to water in trays, for treating the limbs. Connector lays flat in the fluid, and wire connection is made to binding post.



No.		Code	Price
618	Liquid Bath Connector.....	<i>Gleam</i>	\$0.60

### Diagnostic Illuminator and Shield

Consisting of a long metal holder, with a green silk covered connecting cord, and a specially designed opal bulb with a lens blown in the end. This focuses an intense light to the area desired.



No. 321

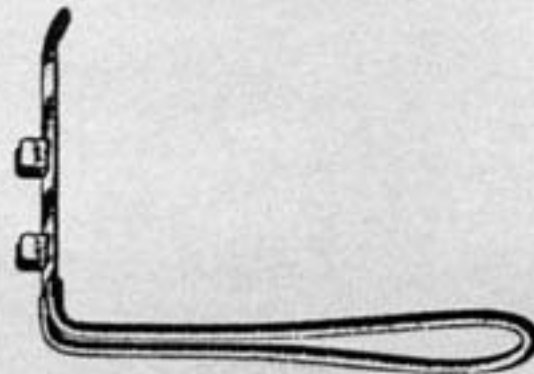


No. 324



No. 322

No.		Code	Price
321	Illuminator, complete with Tungsten Lamp.....	<i>Analog</i>	\$2.50
322	Extra Tungsten bulb.....	<i>Acid</i>	.75
324	Polished Nickel Plated Shield for No. 321.....	<i>Anashi</i>	.40



No. 330

No.		Code	Price
330	Tongue Depressor.....	<i>Tongue</i>	\$1.00



### Block Tin

Block Tin .027 inches thick and 12 inches wide, can be purchased in any quantity, by the pound, a length of 6½ inches weighing approximately 1 pound.

Excellent for making Diathermy Electrodes of odd sizes, as the material is readily cut, and because of its flexibility can be bent to conform to any desired shape.

No.	Code	Price
692—(Per pound).....	<i>Ingage</i>	\$0.65

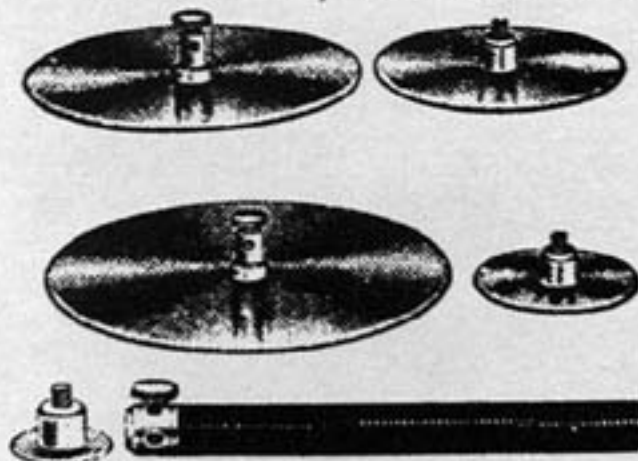
### Clip for Block Tin Electrodes



No.	Code	Price
688—Includes binding post, insulating shank and spring clip as illustrated.....	<i>Infuse</i>	\$0.75

### Diathermy Electrodes

For the application of the Diathermy High Frequency Current. Discs are made of 1-16 inch sheet brass, heavily Nickel Plated. Discs Nos. 606, 607 and 609 are interchangeable on the same set of rubber handles. No handles are necessary with Nos. 610 and 611.



No.	Code	Price
607—Diathermy Disc—1" diameter.....	<i>Goose</i>	\$0.60
606—Diathermy Disc—2" diameter.....	<i>Jawz</i>	.75
609—Diathermy Disc—3" diameter.....	<i>Graft</i>	1.00
610—Diathermy Disc—4" diameter.....	<i>Grain</i>	1.00
611—Diathermy Disc—5" diameter.....	<i>Gurgl</i>	1.25

Rubber Handle for Nos. 606, 607 and 609 Diathermy Discs, with post attachment on end for making connection from machine.

No.	Code	Price
606R—Rubber Handle.....	<i>Jecur</i>	\$1.00

### Diathermy Hand Electrode

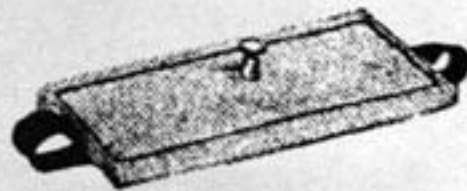
A most convenient method of applying the Diathermic Current by the hand, for local treatments. The rubber band holds the plate in close contact with the palm of the hand, and allows a free movement of the fingers for massage purposes. Carefully designed; all edges smoothly rounded and polished, making it an ideal and extremely convenient appliance.



No.	Code	Price
614—Hand Electrode.....	<i>Grace</i>	\$1.40

### Diathermy Flexible Pad Electrode

A flexible, Felt Pad, backed with pure Block Tin. Can be adapted to most any shape. Has connection on back for fastening wire from machine.



No.	Code	Price
613—Felt Pad Electrode—8", Round.....	<i>Giddy</i>	\$2.00
690—Felt Pad Electrode—3"x6".....	<i>Lasher</i>	2.00

Pad electrodes of odd sizes and shapes, made to order. Write us your requirements.

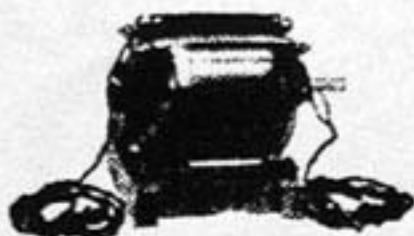
### Pilot Lamp

An indicating lamp bulb used on most of our Portable and Cabinet Apparati.

No.	Code	Price
325—Plain Bulb.....	<i>Larrup</i>	\$0.30
326—Ruby Bulb.....	<i>Lodge</i>	.35

### Rotary Converters

When Direct Current only is available it is necessary to install a rotary converter to operate any efficient high frequency machine.



No. 950X

Our 110 Volt rotary has a special booster winding which insures a full 110 Volt A. C. when operated on 110 Volts D. C.

Our 220 Volt rotary is tapped at the proper point to give 110 Volts A. C. when operated on 220 Volts D. C. This eliminates the use of separate Step-up or Step-down transformers and the loss of efficiency attending their use.

No.	Code	Price
950X—300 Watt capacity—operating on 110 Volts D. C., and delivering 110 Volts 60 Cy. A. C. Designed for the "Lightning" Cabinet.....	<i>Emolo</i>	\$60.00
955X—300 Watt capacity—operating on 220 Volts D. C. and delivering 110 Volts 60 Cy. A. C. (See No. 950X).....	<i>Epul</i>	60.00

### Porcelain Foot Pans



No.	Code	Price
1605— 8" x 10".....	<i>Adler</i>	\$1.75
1606—10" x 12".....	<i>Agaric</i>	2.25