

The Authority on Radio Construction

RADIO FLASH

CONTENTS

Crystal Hook-Ups

- No. 1 Crystal Vario Coupler Hook-Up
- No. 2 Crystal Vario Coupler Variometer Hook-Up

Peanut Tube Hook-Ups (W. D. 11)

- No. 3 Single Circuit Regenerative Hook-Up
- No. 4 Single Circuit Regenerative Plate Variometer Hook-Up
- No. 5 Single Circuit Regenerative Grid Variometer Hook-Up
- No. 6 Short Wave Regenerative Hook-Up
- No. 7 Tuned Grid Feedback Circuit Hook-Up

Amplification Hook-Ups

- No. 8 One Step Audio Frequency Amplifier Unit
- No. 9 Two Step Audio Frequency Amplifier Unit
- No. 10 One Step Radio Frequency Amplifier Unit
- No. 11 Two Step Radio Frequency Amplifier Unit
- No. 12 One Step Radio Frequency and One Step Audio Frequency Amplifier Unit
- No. 13 One Step Radio Frequency and Two Step Audio Frequency Amplifier Unit
- No. 14 Two Step Radio Frequency and One Step Audio Frequency Amplifier Unit

Copyright, 1923, by Hubbs Radio Exchange

THE BEST PLACE TO BUY RADIO

Philadelphia Radio Co., Inc.

MARKET STREET

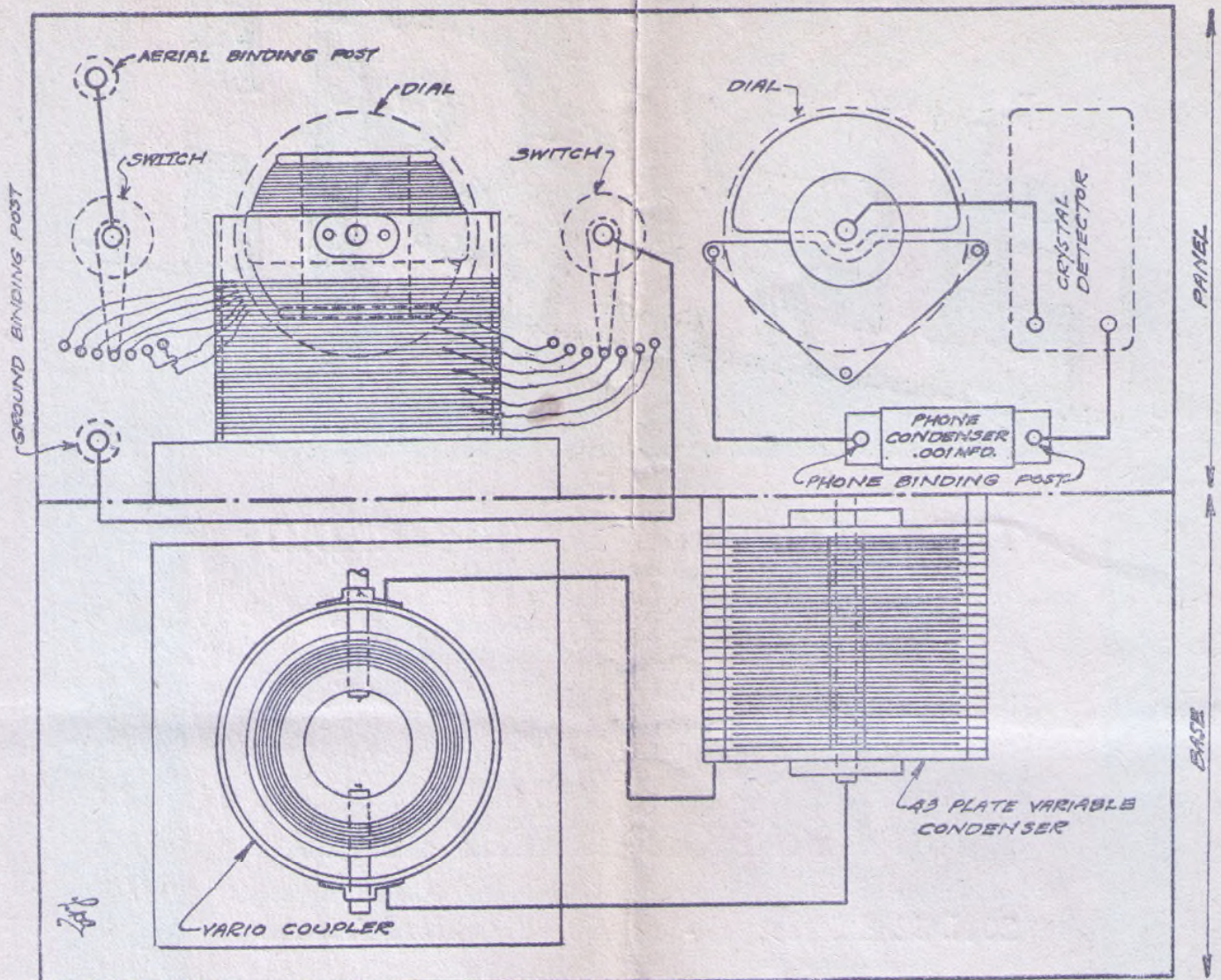
20 N. 52nd Street

4509 Frankford Avenue

No. 2
15
Cents



1 Crystal Vario Coupler Hook-Up



CRYSTAL-VARIOCOUPLER HOOK-UP

These two crystal hook-ups, Nos. 1 and 2, have a range of about thirty miles and will bring in all dot and dash code being sent out by amateurs on a low wave length, also those sent out from ships and commercial stations on a higher wave length up to and including about six hundred meters. Concert broadcasting received on this circuit will come in remarkably loud and extremely sharp.

Circuit No. 2 has advantages over that of No. 1 due to the addition of a variometer which makes the tuning more selective.

Note

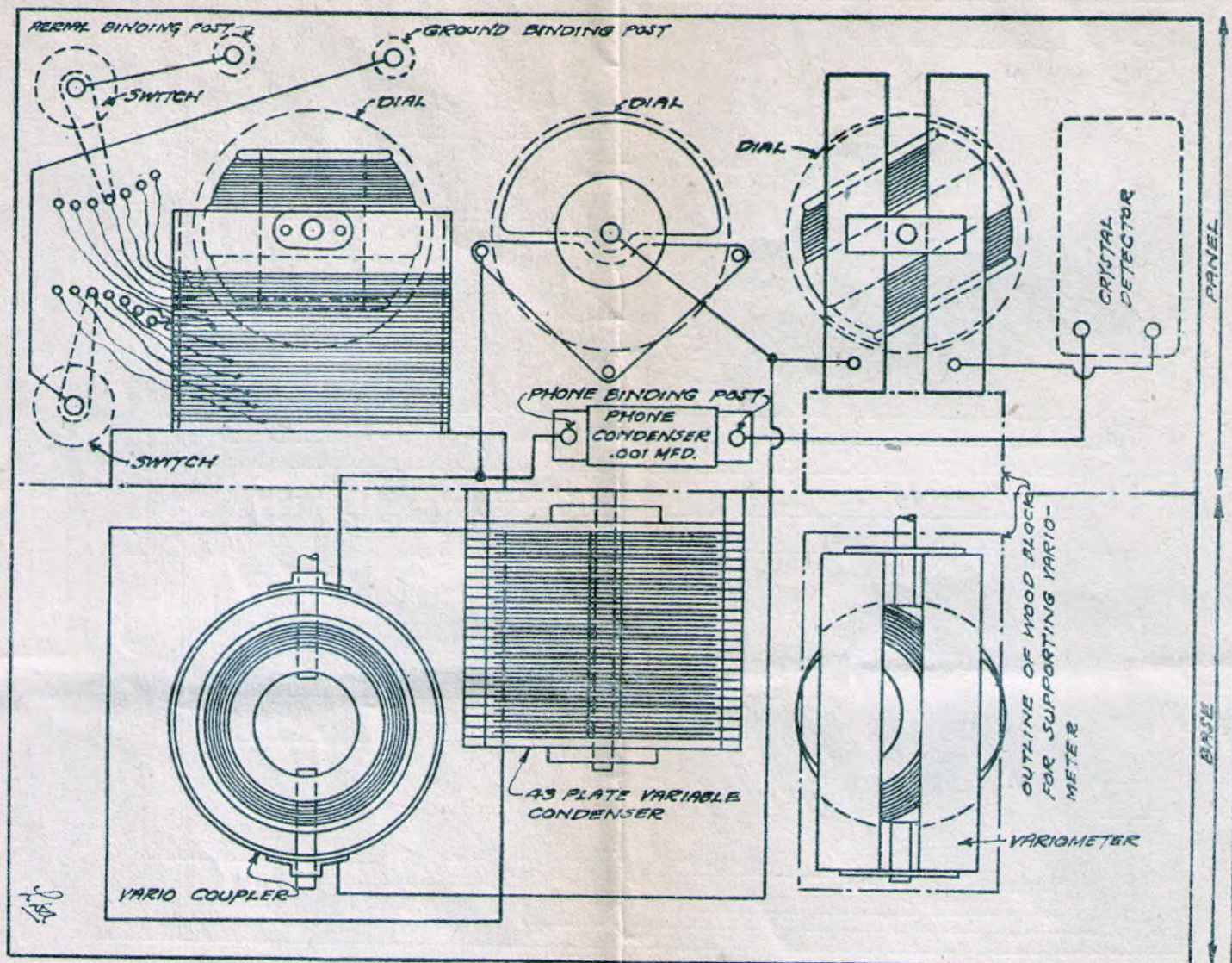
The above list of parts is the same for No. 2 except for the addition of the following:

1 Variometer; 1 Variometer Dial

List of Parts

- 1 Variocoupler, 1 Variocoupler Dial
- 1 Variable Condenser, .001 Mfd., 1 Condenser Dial
- 1 Crystal Detector (Panel Type)
- 1 Phone Condenser
- 2 Switch Levers
- 14 Switch Points
- 20 ft. Spaghetti Insulation
- 1 Panel 14" x 7" x $\frac{3}{16}$ "
- 1 Galena Crystal
- 4 Binding Posts
- 4 Switch Stops
- 20 ft. No. 18 Bare Copper Wire
- 4 Round Head Wood Screws
- 1 Base 14" x 6" x $\frac{3}{4}$ " (wood)

2 Crystal Vario Coupler Variometer Hook-Up



All drawings in this magazine designed by

Keystone Radio Co.

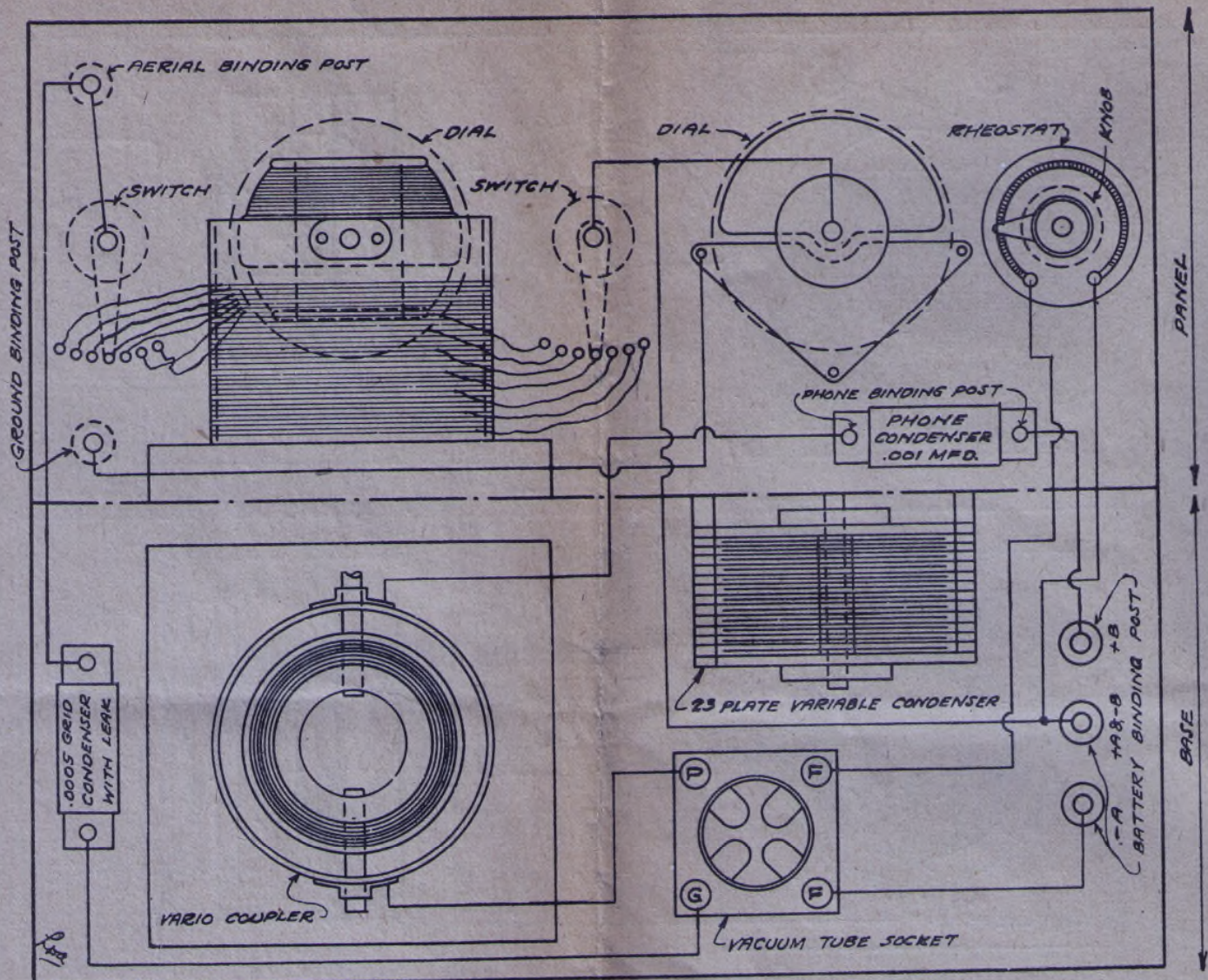
429 W. Tabor Road, Phila., Pa.

Radio Designing & Illustrating

Special Circuit Hook-Up, diagrams
etc. Magazine, Newspaper and
Commerical our Speciality.

Let Us Solve Your Radio Troubles

3 Single Circuit Regenerative Hook-Up



SINGLE CIRCUIT REGENERATIVE HOOK-UP

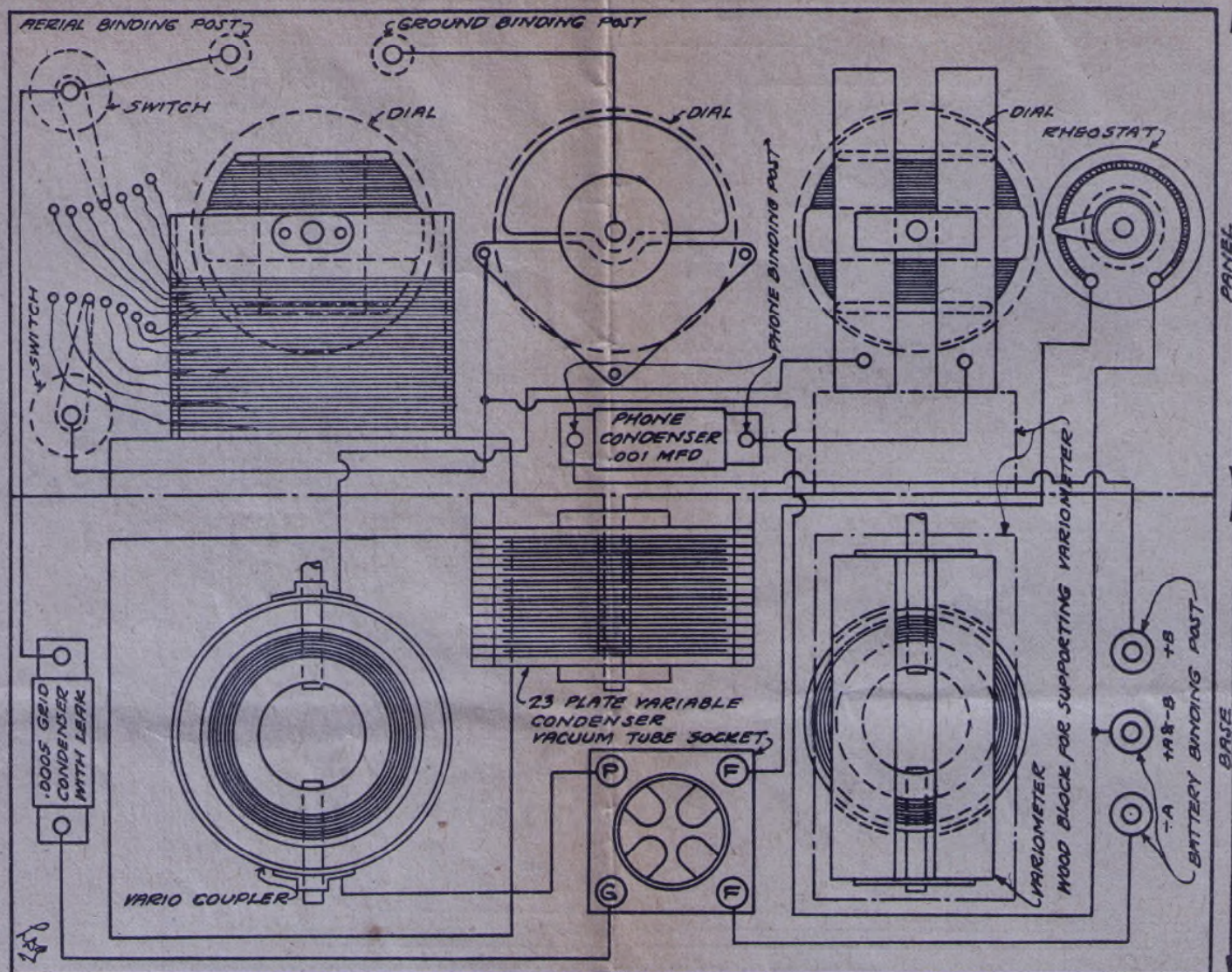
This Single Circuit Regenerative Hook-Up is one of the simplest of its kind, having a range of approximately five hundred miles, which will give excellent results using a one and one-half volt detector tube and a twenty-two and one-half volt B-battery.

Wiring used in this hook-up should be of the buss-bar type using about No. 18 gauge in order to get necessary rigidity, making all bends in same at right angles. All connections should be carefully soldered, so as to make perfect contact. All wire should be covered with either spaghetti insulation or rubber tubing.

List of Parts

- 1 Variocoupler
- 1 Variocoupler Dial
- 1 Variable Condenser, .0005 Mfd.
- 1 Condenser Dial
- 1 Detector Tube (either 1½ or 6 Volt)
- 1 Vacuum Tube Socket
- 1 Rheostat
- 4 Switch Stops
- 5 Binding Posts
- 2 Switch Levers
- 1 Phone Condenser, .001 Mfd.
- 4 Rd. Hd. Wood Screws
- 1 Grid Condenser, .0005 with Leak
- 14 Switch Points
- 20 ft. No 18 Bare Copper Wire
- 1 Panel 14" x 7" x 3/16"
- 1 Base 14" x 6" x 3/4" Wood

4 Single Circuit Regenerative Plate Variometer Hook-Up



SINGLE CIRCUIT REGENERATIVE PLATE VARIOMETER HOOK-UP

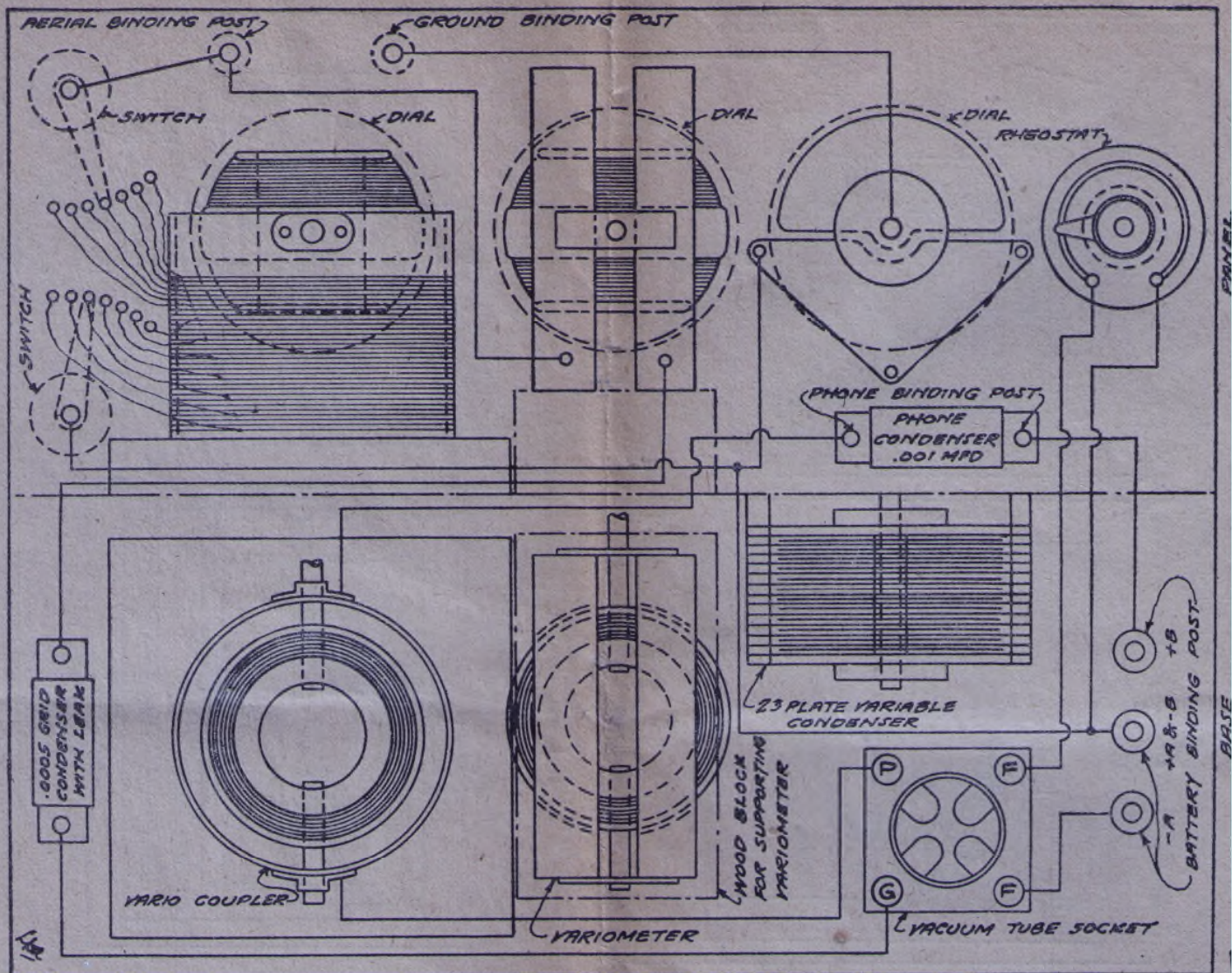
This Regenerative Hook-Up having a Variometer in the plate Circuit has a long distance range. It is known to have tuned in stations of a distance of one thousand miles away, bringing in these broadcasting stations very loud and extremely sharp. It may be necessary to shield panel with either tin-foil or sheet zinc, in either case making sure to cut same clear of all instruments, taps or binding posts so as not to make contact with any excepting the ground binding post. This method will aid you in eliminating all body capacity. Wiring used in this hook-up should be of the buss-bar type, using about No. 18 gauge in order to get necessary rigidity making all bends in same at right angles. All connections should be carefully soldered so as to make perfect contact.

All wires should be covered with either Spaghetti Insulation or Rubber Tubing

List of Parts

- 1 Variocoupler
- 1 Variocoupler Dial
- 1 Variable Condenser, .0005 Mfd.
- 1 Condenser Dial
- 1 Detector Tube (either 1½ or 6 Volt)
- 1 Vacuum Tube Socket
- 1 Rheostat
- 5 Binding Posts
- 4 Switch Stops
- 2 Switch Levers
- 1 Phone Condenser, .001 Mfd.
- 4 Rd. Hd. Wood Screws
- 14 Switch Points
- 1 Grid Condenser, .0005 Mfd. with leak
- 20 ft. Spaghetti Insulation
- 20 ft. No. 18 Bare Copper Wire
- 1 Panel 15" x 7" x ¼" Hard Rubber
- 1 Base 15" x 6" x ¾"

5 Single Circuit Regenerative Grid Variometer Hook-Up



SINGLE CIRCUIT REGENERATIVE GRID VARIOMETER HOOK-UP

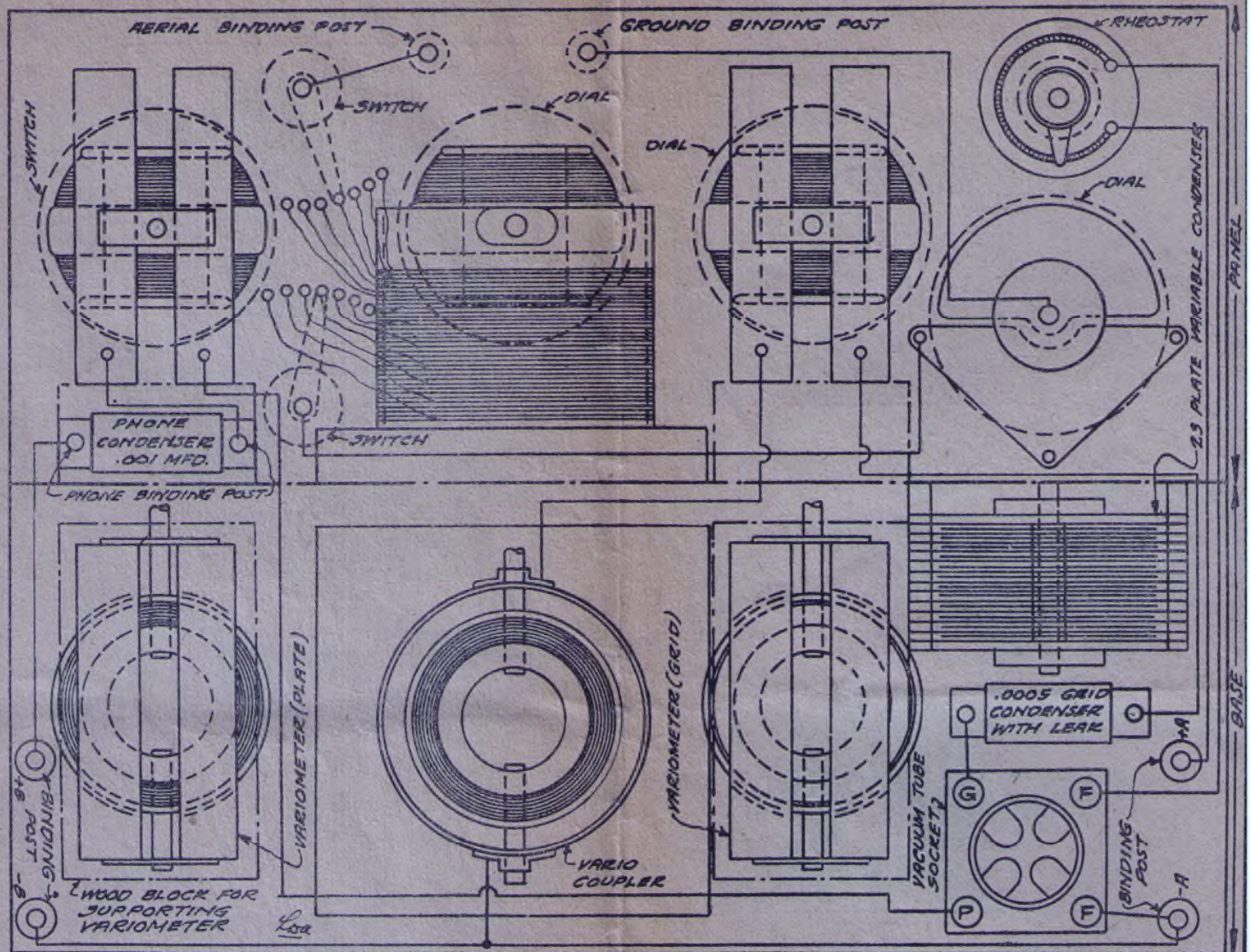
This Single Circuit Regenerative Hook-Up having a Variometer in the grid circuit and with the aid of a grid Condenser of a variable-leak type is noted for its long range reception. It has tuned in broadcasting from a distance of fifteen hundred miles. It is noted for its volume and clear reception. It also gives excellent results in tuning out local stations to permit the reception of long distance ones. It has been operated very successfully with a Detector Tube of 1½ volt type, and also has been found that with a B-battery of forty-five volts will give about the maximum results.

Wiring used in this hook-up should be of the buss-bar type using about No. 18 gauge in order to get necessary rigidity making all bends in same at right angles. All connections should be carefully soldered so as to make perfect contact. All wires should be covered with either Spaghetti or Rubber Tubing.

List of Parts

- 1 Variocoupler
- 1 Variocoupler Dial
- 1 Variable Condenser, .0005 Mfd.
- 1 Condenser Dial
- 1 Detector Tube (either 1½ or 6 Volt)
- 1 Vacuum Tube Socket
- 1 Rheostat
- 5 Binding Posts
- 4 Switch Stops
- 2 Switch Levers
- 1 Phone Condenser, .001 Mfd.
- 4 Rd. Hd. Wood Screws
- 14 Switch Points
- 20 ft. Spaghetti Insulation
- 20 ft. No. 18 Bare Copper Wire
- 1 Panel 15" x 7" x 3/16" Hard Rubber
- 1 Base 15" x 6" x 3/4" Wood
- 1 Grid Condenser with Leak, preferably the type having Variable Leak to mount on front of Panel.

6 Short Wave Regenerative Hook-Up



SHORT WAVE REGENERATIVE HOOK-UP

This Regenerative Hook-Up, better known as the Short Wave Regenerative Circuit, is without a doubt one of the best, if not the best of its kind. It is noted for its very loud and extremely sharp reception of either local or long distant broadcasting, also code signals.

It may seem very intricate in tuning by the average fan but with the aid of patience it will prove to be one of the most selective, and, also noted for its volume.

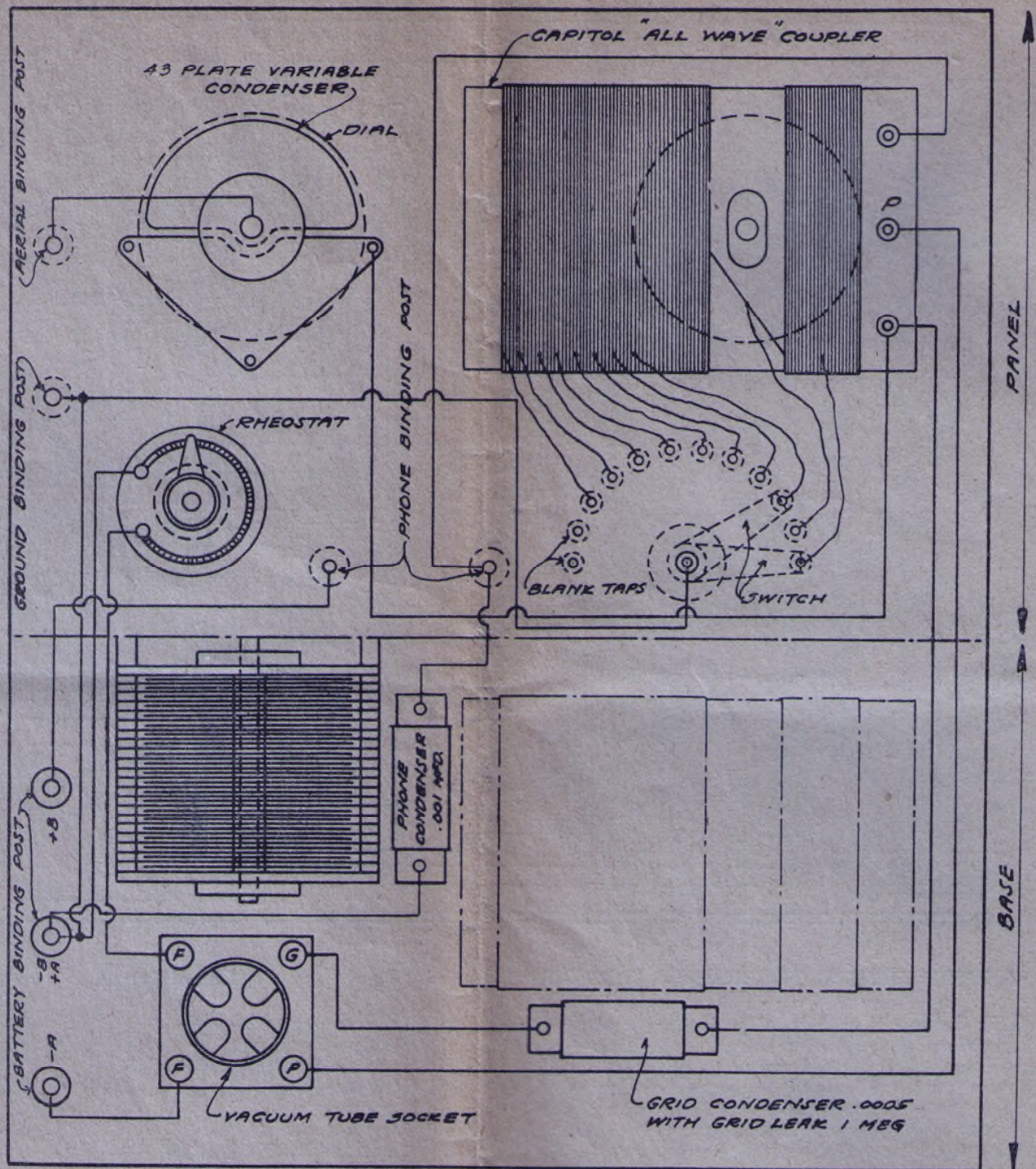
It has been known to tune in the following long distance stations New York City, Newark, Pittsburgh, Chicago, Atlanta, Ga., Detroit, Medford Hillside, Mass., Davenport, Iowa, Schenectady, Boston, Louisville, Ky., Fort Worth, Texas, Havana, Cuba. These stations all being tuned in with a One Tube Detector of 1½ volt (no amplification).

Wiring used in this hook-up should be of the buss-bar type, using about No. 18 gauge in order to get necessary rigidity, making all bends in same at right angles. All connections should be carefully soldered so as to make perfect contact. All wires should be covered with either Spaghetti or rubber tubing.

List of Parts

- 1 Variocoupler
- 1 Variocoupler Dial
- 1 Variable Condenser, .0005 Mfd.
- 1 Condenser Dial
- 2 Variometers
- 2 Variometer Dials
- 1 Detector Tube (either 1½ or 6 Volt)
- 1 Vacuum Tube Socket
- 1 Rheostat
- 6 Binding Posts
- 4 Switch Stops
- 2 Switch Levers
- 1 Phone Condenser, .001 Mfd.
- 4 Rd Hd. Wood Screws
- 14 Switch Points
- 20 ft. Spaghetti Insulation
- 20 ft. No. 18 Bare Copper Wire
- 1 Panel 18" x 7" x ¼" Hard Rubber
- 1 Base 18" x 7" x ¼" Wood
- 1 Grid Condenser with Leak, preferably the type having Variable Leak to mount on front of Panel.

7 Tuned Grid Feedback Circuit Hook-Up



CAPITOL ALL WAVE COUPLER HOOK-UP TUNED GRID FEEDBACK CIRCUIT

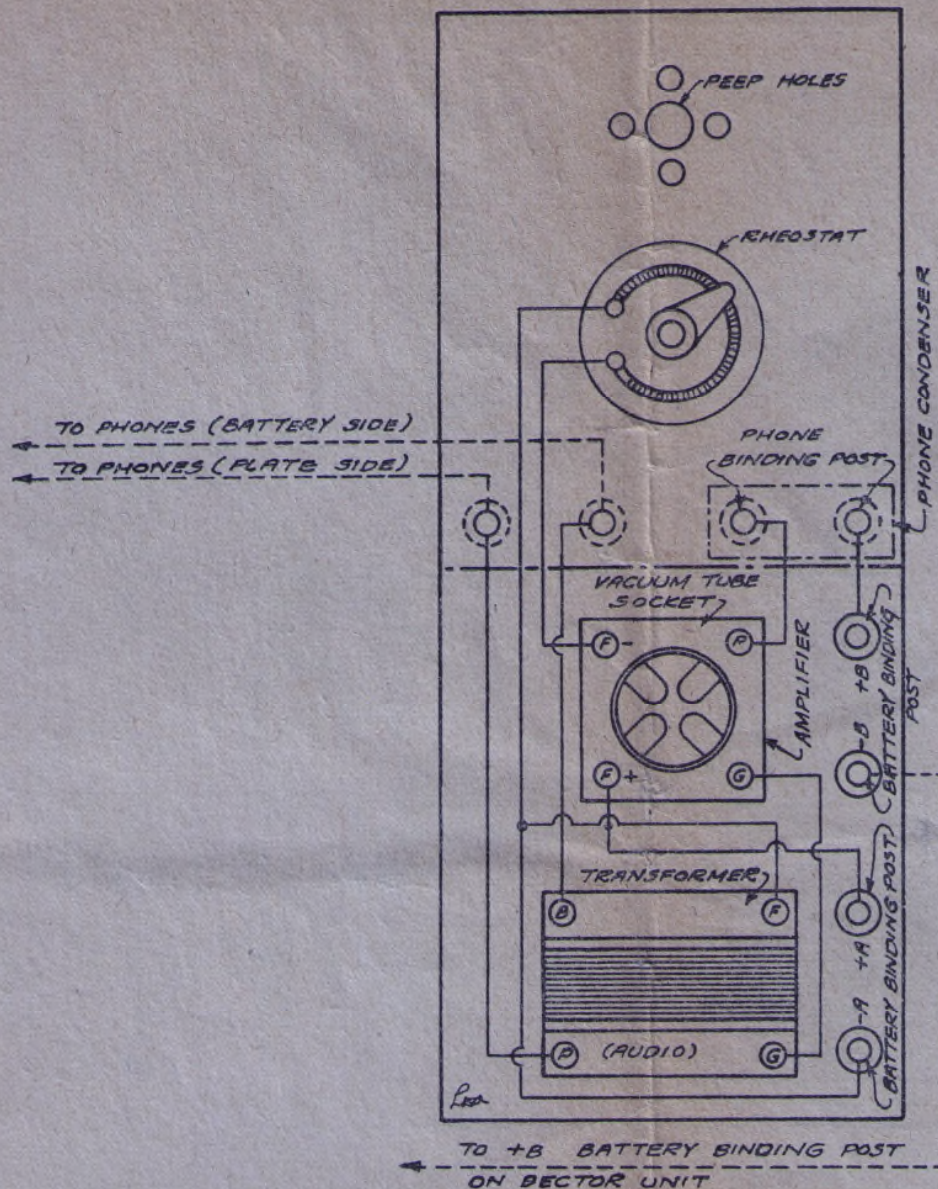
The Tuned Grid Feedback Circuit enables of the building of the simplest and most efficient DX Receiving Set at a remarkably low cost. It is easy to tune, and the number of long distance stations that can be tuned in is astonishing. It will receive broadcast reception on stations as far away as 3000 miles on any wavelength from 150 to 3000 meters.

List of Parts

- 1 "ALL-WAVE" Coupler
- 1 Coupler Dial

- 1 Variable Condenser, .001 Mfd
- 1 Condenser Dial
- 1 "ALL-WAVE" Inductance Switch
- 12 Contact Points
- 1 Rheostat
- 7 Binding Posts
- 1 Phone Condenser, .001 Mfd.
- 1 Grid Condenser, .0005 Mfd., with Leak, 1 meg
- 1 Vacuum Tube Socket
- 1 Detector Tube (either 1½ or 6 Volt)
- 1 Panel 13" x 8" x ¾"
- 1 Base 13" x 7" x ¾" Wood

8 One Step Audio Frequency Amplifier Unit



ONE STEP AUDIO FREQUENCY AMPLIFIER UNIT

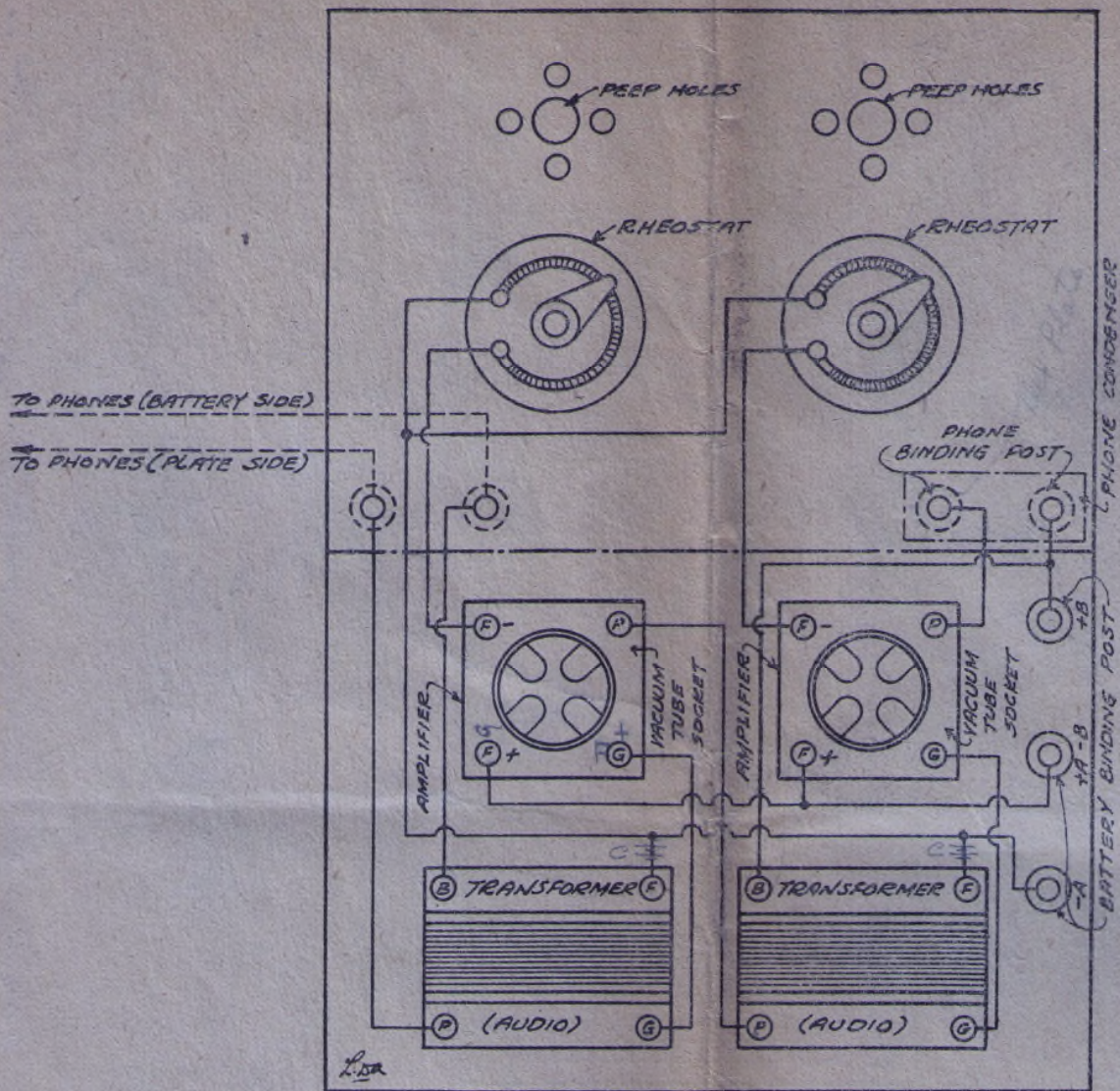
In connecting up this unit to the original Short Wave Regenerative Circuit hook-up all that is necessary is to run two wires from binding post on left hand side of this panel to phone binding post on panel of original detector unit.

One additional 22½ volt B-Battery is necessary for this amplifying unit, connected as shown in series with original 22½ volt B-Battery on detector unit, making 45 volts on amplifying unit. In hooking up this unit follow instructions given in detector unit for wires, soldering, insulation, etc. If using 1½ volt tubes, one additional 1½ volt dry cell battery is necessary. If using 6 volt tubes run two wires from the "A" Battery binding post on this unit to the "A" Battery binding post on original detector unit.

List of Parts

- 1 Panel 6" x 5" x ¼" Hard Rubber
- 1 Base 6" x 5" x ½" Wood
- 1 Vacuum Tube Socket
- 1 Transformer (Audio)
- 8 Binding Posts.
- 1 Rheostat
- 1 Phone Condenser, .001 Mfd.

9 Two Step Audio Frequency Amplifier Unit



TWO STAGES OF AUDIO FREQUENCY AMPLIFIER UNIT

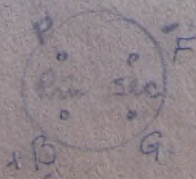
In hooking up this unit to the original short wave regenerative circuit hook-up all that is necessary is to run two wires from binding post on left hand side of this panel to phone binding post on original detector unit.

One additional B battery of forty-five volts is necessary for this amplifying unit to be connected to B battery binding post on this panel.

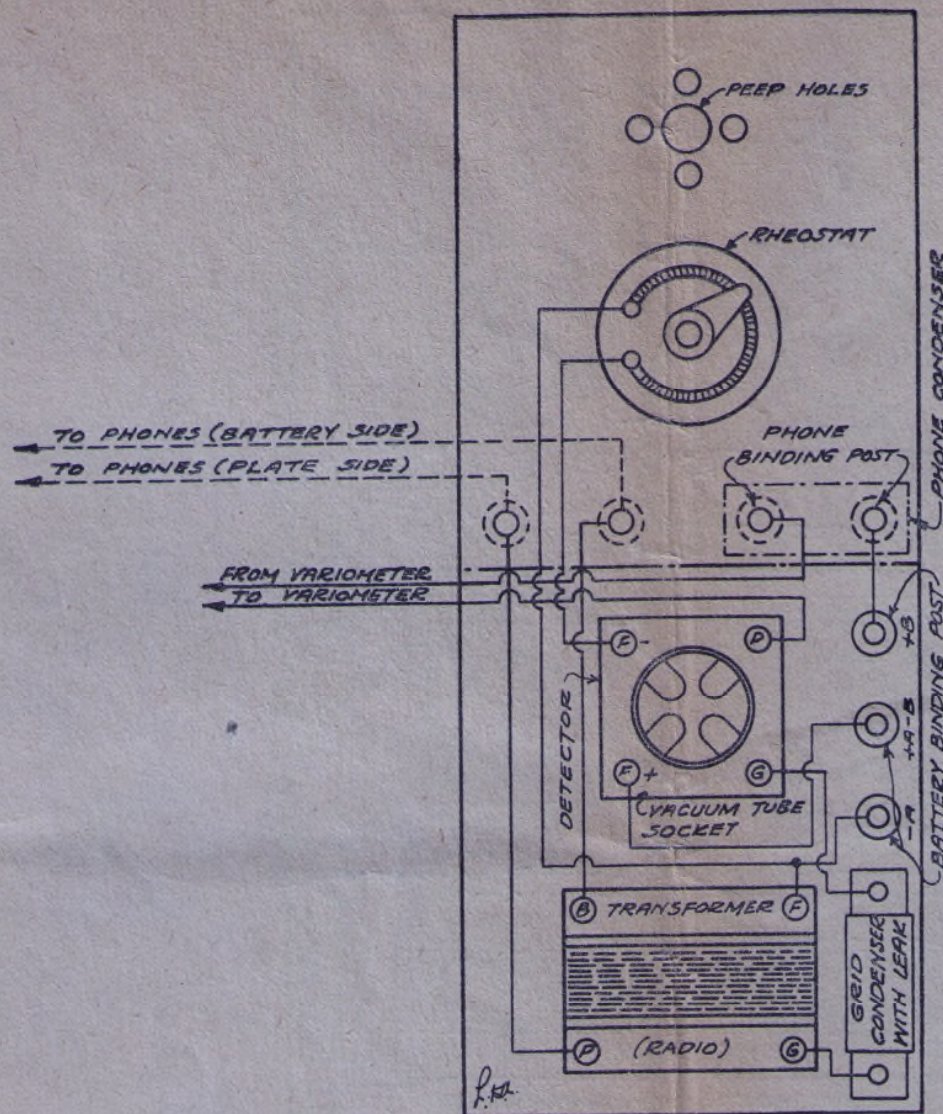
If using one and one-half volt tubes connect 2 one and one-half volt dry cell batteries in parallel to A battery binding post on this unit. If using six volt tubes run two wires from A battery binding post on this unit to A battery binding post on original detector unit, balance of unit to be connected up as shown on above drawing.

List of Parts

- 1 Panel 6" x 8½" x 3/16" Hard Rubber
- 1 Base 6" x 8½" x 1/2" Wood
- 2 Vacuum Tube Sockets
- 2 Transformers (Audio)
- 2 Rheostats
- 7 Binding Posts
- 1 Phone Condenser, .001 Mfd.



10 One Step Radio Frequency Amplifier Unit



ONE STEP OF RADIO FREQUENCY AMPLIFIER UNIT

In hooking up this unit to the original short wave Regenerative Circuit hook-up, caution should be followed and each step should be checked over carefully, making sure that the unit is connected up in accordance with the following instructions.

1st. Disconnect the Grid-Leak and Condenser in the detector unit, removing same, then carefully solder the ends of these two wires together. Note: This Grid-Leak and condenser will now be used in this new unit as shown

2nd. Disconnect the two wires from plate variometer (leaving variometer in its original position) then carefully solder the ends of these two wires together.

3rd. Remove original twenty-two and one-half volt B-battery from detector unit (Note: this battery will now be used with this new unit) and replace same with new forty-five volt battery.

4th. If using one and one-half volt tubes connect one and one-half volt dry cell battery to A battery binding post on this unit.

5th. If using six volt tubes run two wires from A battery binding post on this unit to A battery binding post on original detector unit.

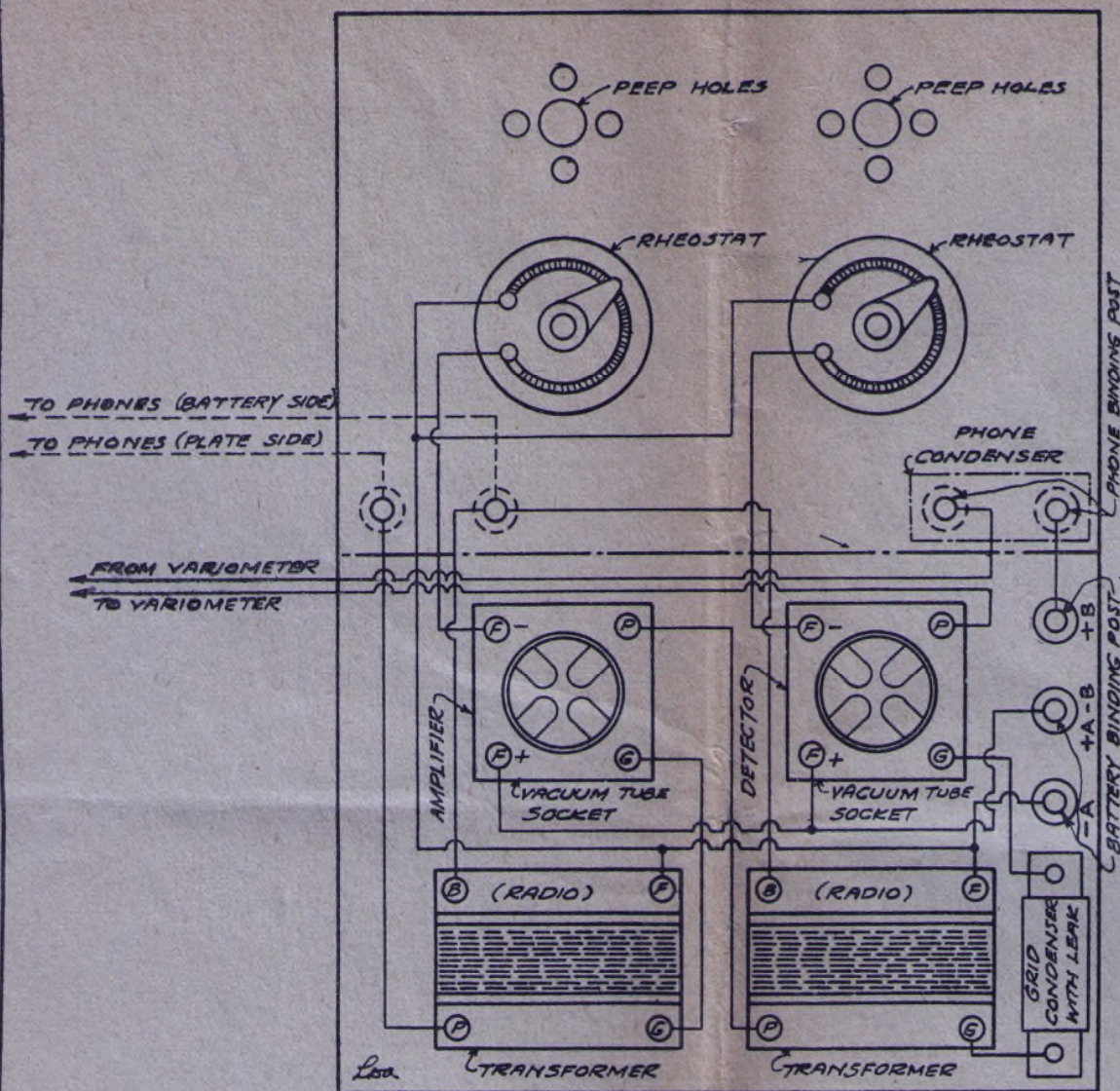
6th. In hooking up this unit follow instruction given in detector unit for wire, soldering, insulation, etc.

7th. Balance of unit to be connected up as shown on drawing above.

List of Parts

- 1 Panel 6" x 5" x $\frac{3}{16}$ " Hard Rubber
- 1 Base 6" x 5" x $\frac{1}{2}$ " Wood
- 1 Vacuum Tube Socket
- 1 Transformer (Radio)
- 1 Rheostat
- 1 Phone Condenser. .001 Mfd.
- 7 Binding Posts

11 Two Step Radio Frequency Amplifier Unit



TWO STEP RADIO FREQUENCY AMPLIFIER UNIT

In connecting up this unit to the original Short Wave Regenerative Circuit hook-up, caution should be followed and each step should be carefully checked up, making sure that the unit is connected up as the following:

First: Disconnect the grid leak and condenser in the original detector unit, removing same and carefully solder these two wires together—Note, this grid leak and condenser will be in the new unit as shown in drawing above.

Second: Disconnect the two wires from the plate variometer in the original detector unit (leaving variometer in its original position) and carefully solder these two wires together.

Third: Remove original 22½ volt B-Battery from detector unit. (Note—This battery will now be used in this new unit), and replace same with new 45 volt B-Battery.

Fourth: If using 1½ volt tubes, connect 2 additional 1½ volt dry cell batteries in parallel to "A" Battery binding post on this unit.

Fifth: If using 6 volt tubes run two wires from "A" Battery binding post on original detector unit.

Sixth: Run two wires from binding post on left hand side of this panel to phone binding post on panel of original detector unit.

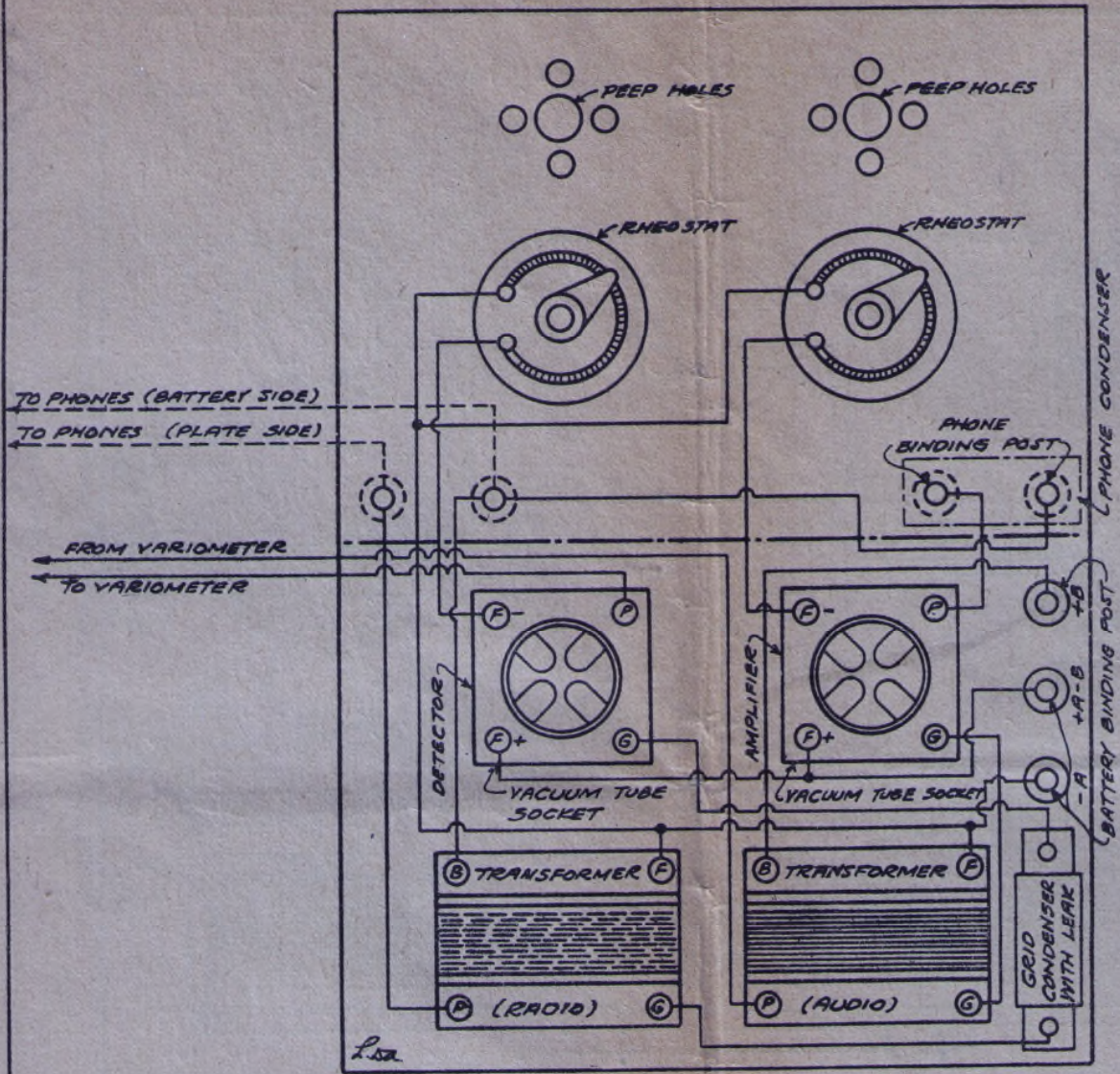
Seventh: Balance of unit to be connected up in accordance with drawing above.

Eighth: In hooking up this unit follow instructions given in detector unit for wires, soldering, insulation, etc

List of Parts

- 1 Panel 6" x 8½" x ¼" Hard Rubber
- 2 Vacuum Tube Sockets
- 2 Rheostats
- 1 Phone Condenser, .001 Mfd.
- 1 Base 6" x 8½" x ½" Wood
- 2 Transformers (Radio)
- 7 Binding Posts

12 One Step Radio Frequency and One Step Audio Frequency Amplifier Unit

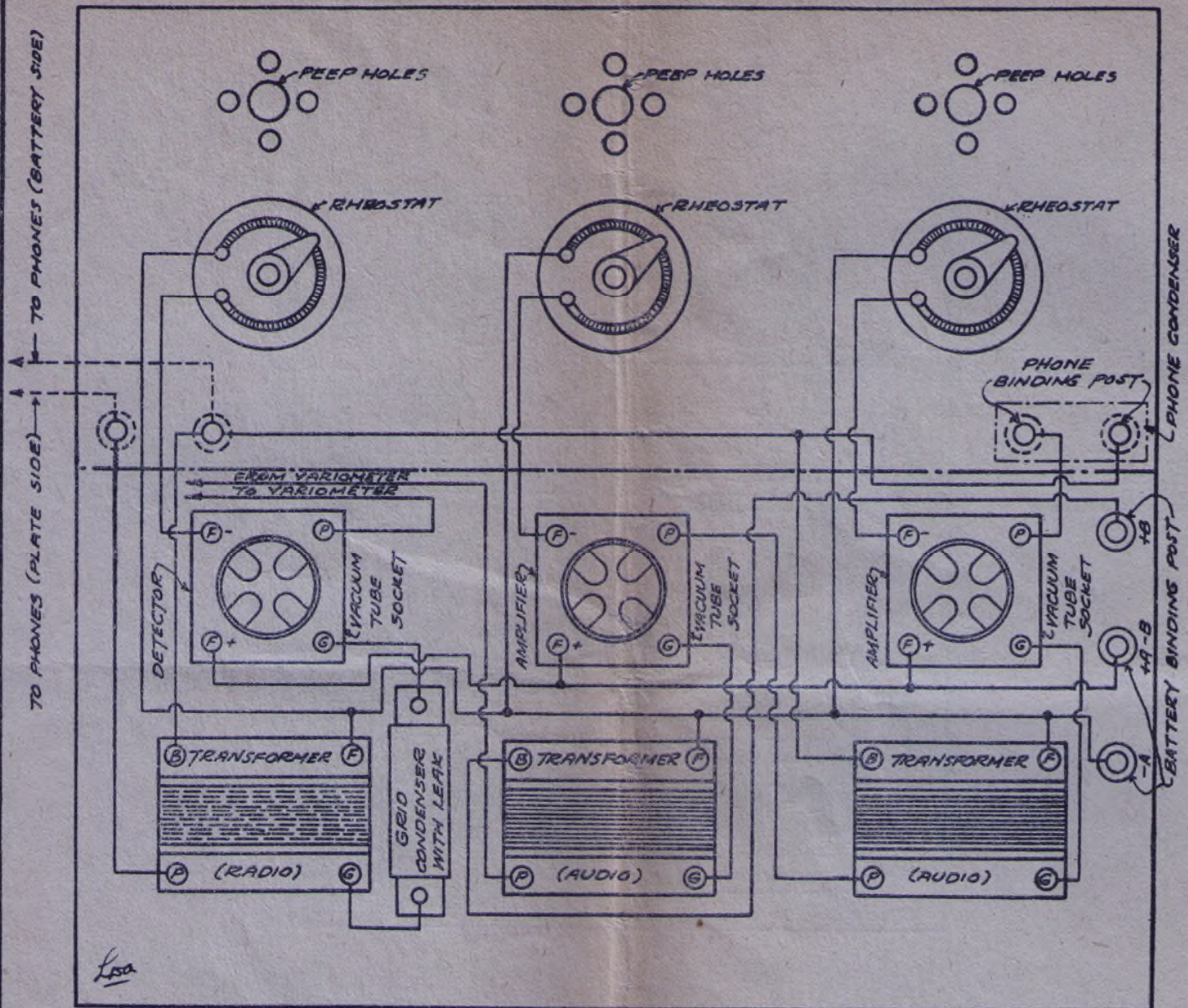


NOTE. Repeat instructions same as No. 11.

List of Parts

- 1 Panel 6" x 8½" x 3/16" Hard Rubber
- 2 Vacuum Tube Sockets
- 1 Transformer (Audio)
- 7 Binding Posts
- 1 Base 6" x 8½" x ½" Wood
- 2 Transformers (Radio)
- 2 Rheostats
- 1 Phone Condenser, 001 Mfd.

13 One Step Radio Frequency and Two Step Audio Frequency Amplifier Unit



ONE STAGE OF RADIO FREQUENCY AND TWO STAGES OF AUDIO FREQUENCY AMPLIFIER UNIT

In hooking up this unit to the original short wave Regenerative Circuit hook-up, caution should be followed and each step should be checked over carefully, making sure that the unit is connected up in accordance with the following instructions.

1st. Disconnect the Grid-Leak and Condenser in the detector unit, removing same, then carefully solder the ends of these two wires together. Note: This Grid-Leak and condenser will now be used in this new unit as shown.

2nd. Disconnect the two wires from plate variometer (leaving variometer in its original position) then carefully solder the ends of these two wires together.

3rd. Remove original twenty-two and one-half volt B-battery from detector unit (Note: this battery will now be used with this new unit) and replace same with new forty-five volt battery.

4th. If using one and one-half volt tubes connect one and one-half volt dry cell battery to A battery binding post on this unit.

5th. If using six volt tubes run two wires from A battery binding post on this unit to A battery binding post on original detector unit.

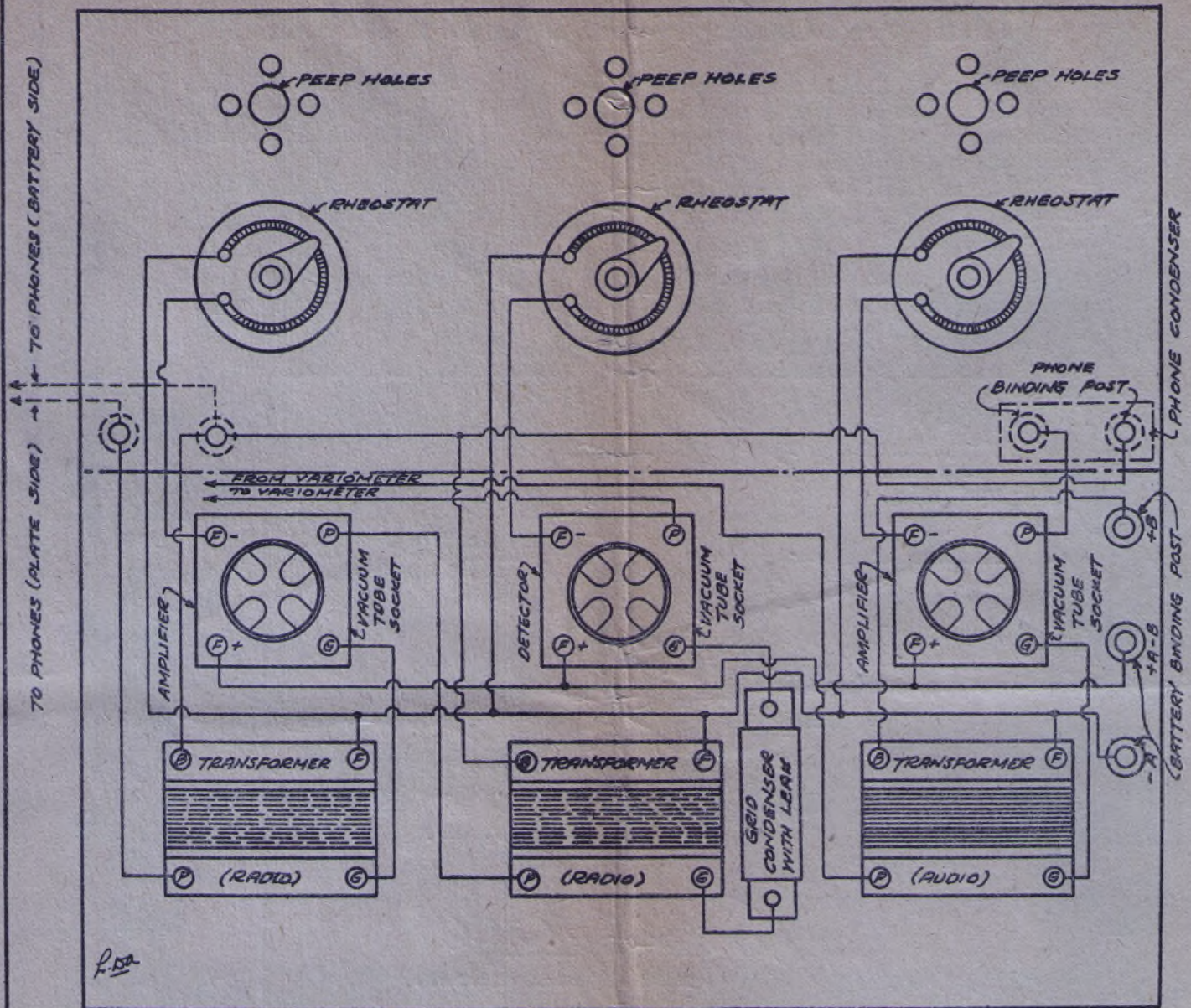
6th. In hooking up this unit follow instruction given in detector unit for wire, soldering, insulation, etc.

7th. Balance of unit to be connected up as shown on drawing above.

List of Parts

- 1 Panel 14" x 6" x $\frac{3}{16}$ " Hard Rubber
- 1 Base 14" x 6" x $\frac{1}{2}$ " Wood
- 2 Transformers (Audio)
- 1 Transformer (Radio)
- 3 Vacuum Tube Sockets
- 3 Rheostats
- 7 Binding Posts
- 1 Phone Condenser, .001 Mfd.

14 Two Step Radio Frequency and One Step Audio Frequency Amplifier Unit



TWO STAGES OF RADIO FREQUENCY AND ONE STAGE OF AUDIO FREQUENCY AMPLIFIER UNIT

In hooking up this unit to the original short wave Regenerative Circuit hook-up, caution should be followed and each step should be checked over carefully, making sure that the unit is connected up in accordance with the following instructions.

1st. Disconnect the Grid-Leak and Condenser in the detector unit, removing same, then carefully solder the ends of these two wires together. Note: This Grid-Leak and condenser will now be used in this new unit as shown.

2nd. Disconnect the two wires from plate variometer (leaving variometer in its original position) then carefully solder the ends of these two wires together.

3rd. Remove original twenty-two and one-half volt B-battery from detector unit (Note: this battery will now be used with this new unit) and replace same with new forty-five volt battery.

4th. If using one and one-half volt tubes connect one and one-half volt dry cell battery to A battery binding post on this unit.

5th. If using six volt tubes run two wires from A battery binding post on this unit to A battery binding post on original detector unit.

6th. In hooking up this unit follow instruction given in detector unit for wire, soldering, insulation, etc.

7th. Balance of unit to be connected up as shown on drawing above.

List of Parts

- 1 Panel 14" x 6" x $\frac{3}{16}$ " Hard Rubber
- 1 Base 14" x 6" x $\frac{1}{2}$ " Wood
- 3 Rheostats
- 3 Vacuum Tube Sockets
- 1 Transformer (Audio)
- 2 Transformers (Radio)
- 7 Binding Posts
- 1 Phone Condenser, .001 Mfd.

Radio Flash L. D. R. Crystal

(THE VACUUM TUBE'S ONLY RIVAL)

Radio Flash L. D. R. Crystals are used exclusively in conjunction with one or more stage of amplification, for clear, loud radio reception aboard ship. With this crystal you require no detector tube. For wonderful radio reception use Radio Flash L. D. R. Crystal in your tuning apparatus and add the W.D. 11 Dry Cell amplifying tube to you tuner.

Radio Flash L. D. R. requires no cleansing. **Do not scrape or scratch this wonderful crystal, only at your own risk.** Follow instructions and crystal will last indefinitely.

No dead spots on the Radio Flash L. D. R. Use a No. 36 wire for wonderful loud radio results.

READ WHAT OTHERS SAY

PRICE

50c.

or

Three

for

\$1.00

WM. B. MILLS,
SUPERINTENDENT
N. J. KENNY,
ASST. SUPERINTENDENT
WALTER GILBERT,
CHIEF CLERK

DEPARTMENT OF PUBLIC SAFETY
BUREAU OF POLICE
PHILADELPHIA

Jan. 12th /23. 192
1030 Greenwich Str.

DISTRICT

Mr. William E. Hubbs,
600 Fischer Ave.,
North Bergen, N.J.

Dear Sir,

I have given the Radio Flash L. D. R. Crystal a good trial, your crystal is in every respect far superior than any other crystal I have used, the tone waves are natural, clear and distinct.

(THE VACUUM TUBES ONLY RIVAL)

Very truly yours,

Lieut. Joseph Kiefer

Barinaster Phila. Police Band.

PRICE

50c.

or

Three

for

\$1.00

FROM YOUR DEALER or DIRECT FROM US

Guaranteed Perfect Crystal for Crystal

Hubbs Radio Exchange

WM. E. HUBBS, Mgr.

600 Fischer Ave., North Bergen, New Jersey