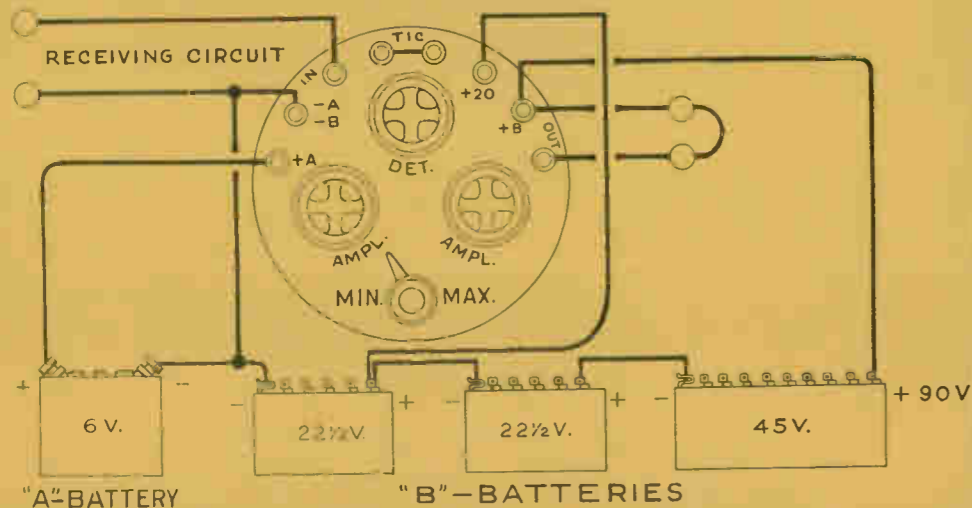


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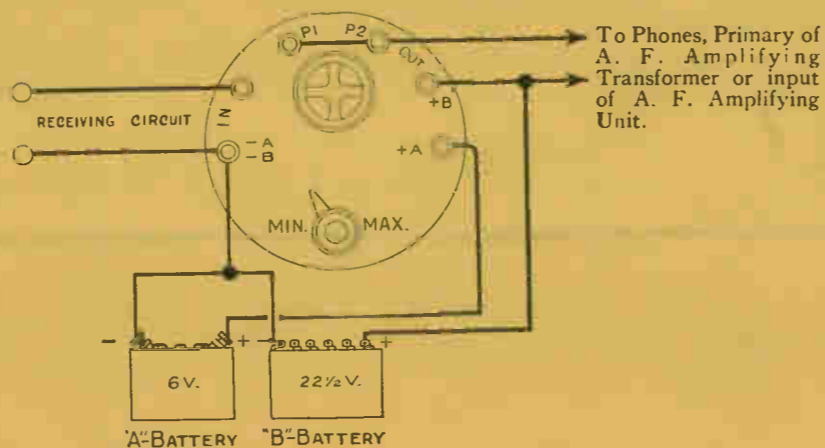
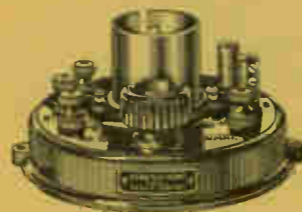
Detector and 2-Stage A. F. Amplifier
Instruction Sheet



- Important:**—Do not insert tubes until all connections have been made and carefully checked.
1. Connect the tuned receiving circuit to the two terminals marked **IN**. Note—This instrument incorporates the necessary phone condenser, grid condenser and grid leak.
 2. The terminals marked **TIC** (or **P1, P2**) provide a means of adapting this instrument to standard types of circuits.
 3. Connect the 22½ volt positive tap of the **B** battery to the terminal marked **+20**. When the set is in operation this voltage may be adjusted at the battery to the point of maximum signal strength. This setting will vary for different detector tubes.
 4. Connect the **+B** terminal of the instrument to the **+90** volt tap of the **B** battery. This will give maximum amplification for loudspeaker use. Satisfactory results (with headphones) will be obtained with as low as **-45** volts.
 5. Connect the phones or loud speaking device across the terminals marked **OUT**, one side being common to the **+90** volt **B** battery tap.
 6. The negative side of the **A** (storage) battery and the negative side of the **B** battery are connected to the terminal marked **-B**, being also common to one of the receiving circuit connections.
 7. The positive side of the **A** battery is connected to the terminal marked **+A**.
 8. Check all connections carefully before inserting tubes. Turn rheostat knob to position marked **MIN.**—insert tubes (note from the diagram that the detector tube is placed in the socket marked **DET.**). Turn rheostat knob toward **MAX.** position until detector tube filament is burning at about normal brilliancy. The instrument is now ready for preliminary operation, and the final adjustment of the rheostat knob can be determined when the signals are properly tuned in.
 9. It is to be noted that for the sake of simplicity in operation the filament of the amplifier tubes is non-adjustable and has been adjusted at the factory to the most suitable value for the popular types of vacuum tubes.

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DETECTOR UNIT
Instruction Sheet

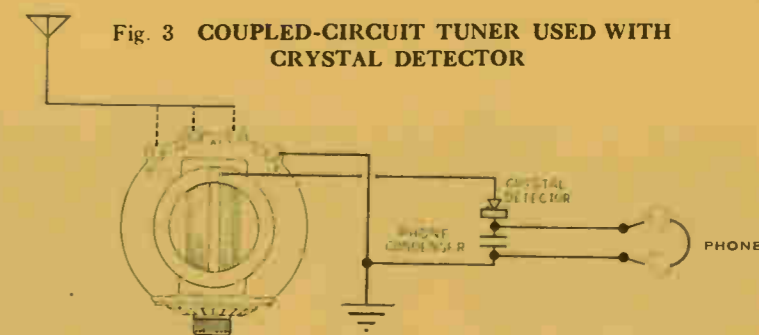
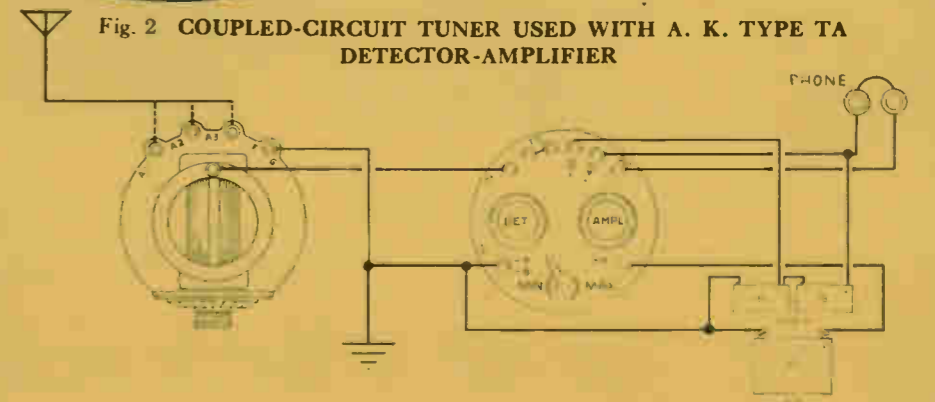
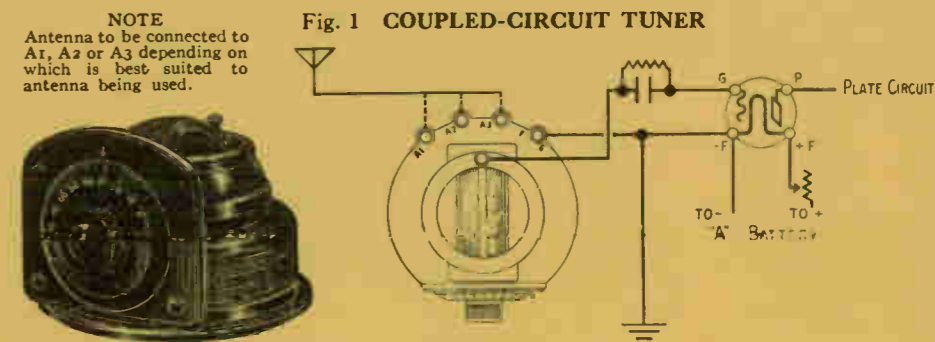


1. Connect the tuned receiving circuit to the two terminals marked **IN**. Note—This instrument incorporates the necessary phone condenser, grid condenser and grid leak.
2. The terminals marked **P1** and **P2** provide a means of adapting this instrument to standard types of receiving circuits.
3. Connect the 22½ volt positive tap of the **B** battery to the terminal marked **+B**. When the set is in operation, this voltage may be adjusted at the battery to the point of maximum signal strength. This setting will vary for different detector tubes.
4. The negative side of the **A** (storage) battery and the negative side of the **B** battery are connected to the terminal marked **-B**, being also common to one of the receiving circuit connections.
5. The positive side of the **A** battery is connected to the terminal marked **+A**.
6. If no amplification is to be used, connect the phones across the terminals marked **OUT**, one side being common to the **+B** battery tap. (If an audio frequency amplifier is to be used, the terminals marked **OUT** are then connected to the primary of an **A. F.** transformer or the input of an **A. F.** amplifying unit in the usual manner.)

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Coupled-Circuit Tuner
INSTRUCTION SHEET



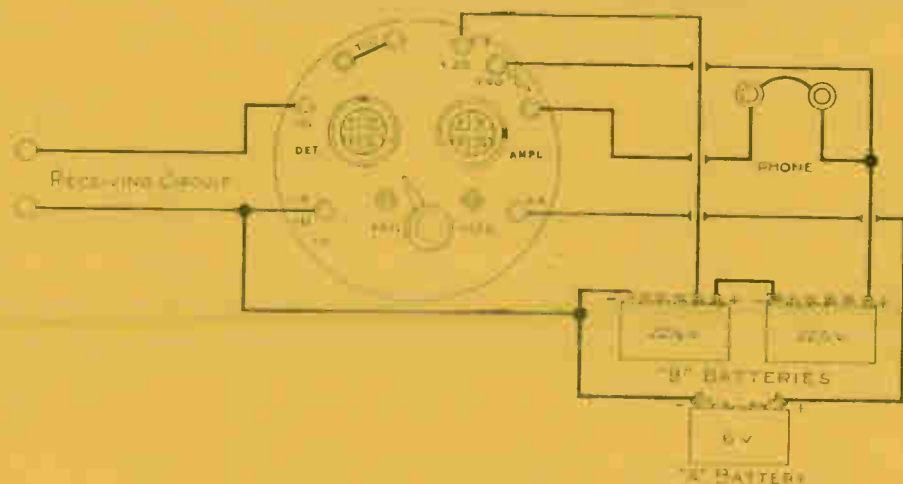
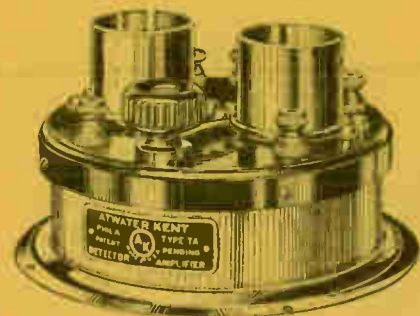
Connect the top binding post to the grid of the detector tube, through the usual grid condenser and grid leak. Fig. 1.
Connect binding post marked **FG** to ground and negative filament. Fig. 1.
Inasmuch as antennae are of various lengths, we have provided three binding posts, **A1, A2** and **A3**, one of which will be best adapted to your antenna. This can be easily determined by trying each one. The one giving the loudest signal is the one to use permanently.
When used in conjunction with the Atwater Kent Detector-Amplifier Type **TA**, the connections are shown in Fig. 2.
A crystal detector may be used in place of a vacuum tube detector, and this should be connected as in Fig. 3.

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DETECTOR AMPLIFIER

Instruction Sheet



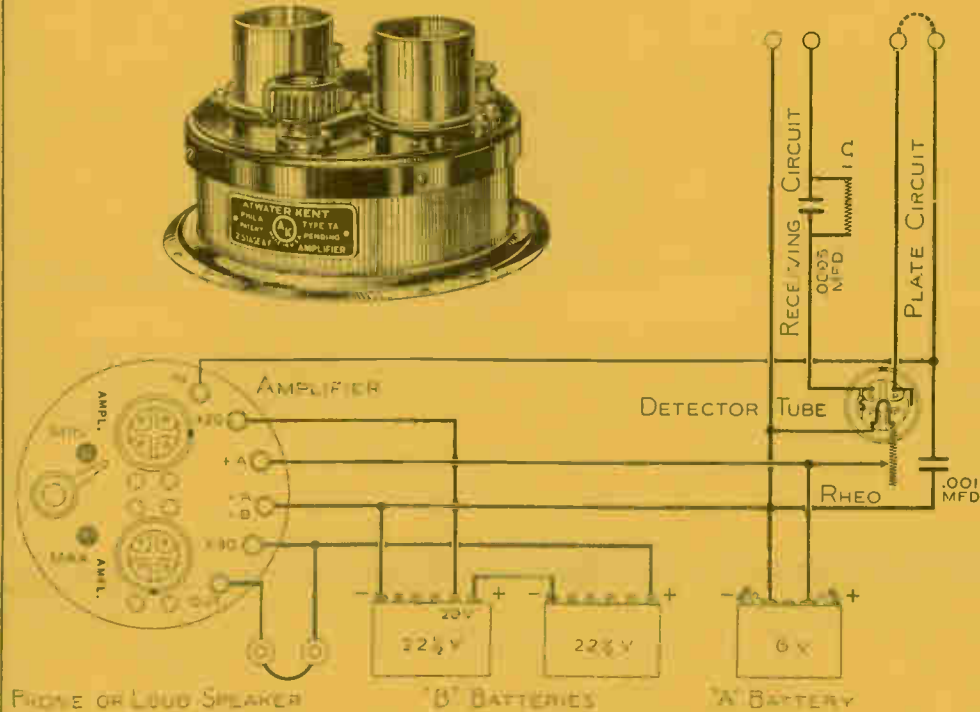
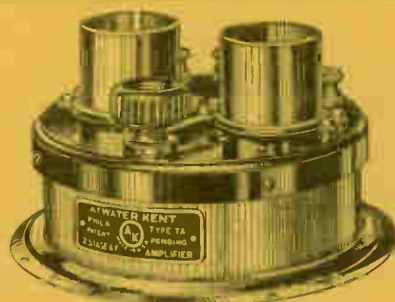
Important:—Do not insert tubes until all connections have been made and carefully checked.

1. Connect the tuned receiving circuit to the two terminals marked IN. Note—This instrument incorporates the necessary phone condenser, grid condenser and grid leak.
2. The terminals marked TIC (or P1, P2) provide a means of adapting this instrument to standard types of circuits.
3. Connect the 22½ volt positive tap of the B battery to the terminal marked +20. When the set is in operation this voltage may be adjusted at the battery to the point of maximum signal strength. This setting will vary for different detector tubes.
4. Connect the 45 volt positive tap of the B battery to the terminal marked +40. This voltage may also be adjusted at the battery after the set is in operation, and an increase in this voltage up to a certain point will give increased signal strength.
5. Connect the phones or loud speaking device across the terminals marked OUT, one side being common to the +40 volt B battery tap.
6. The negative side of the A (storage) battery and the negative side of the B battery are connected to the terminal marked —A, being also common to one of the receiving circuit connections.
7. The positive side of the A battery is connected to the terminal marked +A.
8. Check all connections carefully before inserting tubes. Turn rheostat knob to position marked MIN.—insert tubes (note from the diagram that the detector tube is placed in the left-hand socket). Turn rheostat knob toward MAX. position until detector tube filament is burning at about normal brilliancy. The instrument is now ready for preliminary operation, and the final adjustment of the rheostat knob can be determined when the signals are properly tuned in.
9. It is to be noted that for the sake of simplicity in operation the filament of the amplifier tube is non-adjustable and has been adjusted at the factory to the most suitable value for the popular types of vacuum tubes.

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2-STAGE A. F. AMPLIFIER

Instruction Sheet



NOTE

The use of this amplifying unit is not limited to any particular type of circuit, but is universally adaptable to any set up requiring a low frequency amplifier, whether in the radio laboratory or the amateur receiving set.

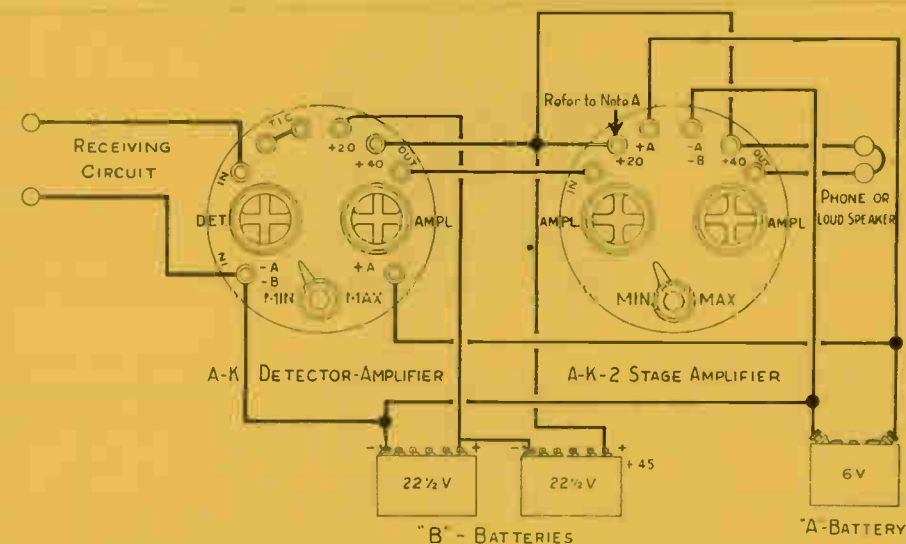
Important:—Do not insert tubes until all connections have been made and carefully checked.

1. Connect the plate circuit of the detector tube to the first terminal marked IN.
2. Connect the 22½ volt positive tap of the B battery to the terminal marked +20. When the set is in operation this voltage may be adjusted at the battery to the point of maximum signal strength. This setting will vary for different detector tubes.
3. Connect the positive side of the A (storage) battery to the terminal marked +A.
4. Connect the negative side of the A battery and the negative side of the B battery to the terminal marked —A.
5. Connect the 45 volt positive tap of the B battery to the terminal marked +40. This voltage may also be adjusted at the battery after the set is in operation. For loud speaker use it is recommended that this voltage be increased to +90 volts.
6. Connect the phones or loud speaking device across the terminals marked OUT, one side being common to the +40 volt B battery tap.
7. Check all connections carefully before inserting tubes. Turn rheostat knob to position marked MIN.—insert tubes. Turn rheostat knob towards MAX. position until the tube filaments are burning at about normal brilliancy. The instrument is now ready for preliminary operation, and the final adjustment of the rheostat knob will be determined as soon as the signals are properly tuned in.

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Detector Amplifier and 2-Stage Amplifier

Instruction sheet for connecting these 2 units for a Detector and 3 stages of Audio Frequency Amplification



NOTE A:—The +20 terminal of the 2-Stage Amplifier is connected the same as the +40 terminal.

Important:—Do not insert tubes until all connections have been made and carefully checked.

1. Connect the tuned receiving circuit to the Detector Amplifier terminals marked IN. (The unit contains the necessary phone condenser, grid condenser, and grid leak.)
2. The two terminals marked TIC (or P1, P2) provide a means of adapting this instrument to standard types of circuits.
3. Connect the 22½ volt positive tap of the B battery to the Detector Amplifier terminal marked +20. When the set is in operation this voltage may be adjusted at the battery to the point of maximum signal strength. This setting varies for different detector tubes.
4. Connect the two terminals marked OUT of the Detector Amplifier to the two terminals marked IN of the 2-Stage Amplifier. This connects the +40 terminal of the Detector Amplifier to the +20 terminal of the 2-Stage Amplifier and both are then connected to the 45 volt positive tap of the B battery. This voltage may also be adjusted at the battery after the set is in operation. For loud speaker use it is recommended that this voltage be increased to +90 volts.
5. Connect the terminal marked —A of the Detector Amplifier (being also common to one of the receiving circuit connections) and the terminal marked —A of the 2-Stage Amplifier to the negative sides of the A and B batteries.
6. Connect the terminal marked +A of the Detector Amplifier and the terminal marked +A of the 2-Stage Amplifier to the positive side of the A battery.
7. Connect the +40 terminal of the 2-Stage Amplifier to the 45 volt positive tap of the B battery. This may also be adjusted later as explained in a previous paragraph.
8. Connect the phones or loud speaking device across the terminals marked OUT, one side being common to the +40 volt B battery tap.
9. Check all connections carefully before inserting tubes. Turn rheostat knobs to positions marked MIN.; insert tubes.
(It is to be noted that for the sake of simplicity in operation the filament of the amplifier tube in the Detector Amplifier unit is non-adjustable and has been adjusted at the factory to the most suitable value for the popular types of vacuum tubes.)
10. Turn rheostat knobs toward MAX. positions until all tube filaments are burning at about normal brilliancy. The instruments are now ready for preliminary operation, and the final adjustment of the rheostat knob can be determined when the signals are properly tuned in.