A Simple Radio-phone Receiver
By JAMES LEO McLAUGHLIN
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number each fastener from right to left, 1 to 9. Alongside of hole No. 1 push two fasteners with a paper clip underneath—mark GND. One half inch down from GND, punch a small hole; this is the starting point of the coil.

Take the wire and push the end thru the hole. Wind three around one of the fasteners GND (on the inside of the counter). Be sure that where the wire touches the fastener, the enamel has been scraped off or else a poor connection will result.

Next pull the wire tight and commence winding the coil. The total number of turns is seventy, and a tap is taken off at each of the following turns: The 15th, 20th, 25th, 30th, 35th, 40th, 45th, 50th, 55th and the 70th.

Fig. 1 shows how to tap the coil. The important things to look out for are that the coil is wound as tight as possible, and that the center is scraped off wire, where it makes connections with the fasteners. The 15th turn is contact No. 1, the 20th No. 2, etc.

The next is the switch that moves over the contacts. Fig. 2 shows how this is done. Take one of the large fasteners, push the ends thru the side of the cover, close to the side, and wind down flush with the side and push the other end thru the top and bend over.

Put the cover back on the container and bend the end and bend it so that it rides over the contacts easily, when the cover is turned, but be sure that it touches each of the three.

The other large fastener is pushed thru the lid opposite the switch and bent, as shown in Fig. 2, so that it can hold the other end of bare wire (about No. 24 will do), acts as the catwhisker, a pin is fastened to one end and the other end is wrapped around the end of the switch—the part that is bent over (see Fig. 2). Fig. 3 shows the diagram of connections and need not comment.

The telephone is a single Mar- dock without head band, and can be purchased for about $2.00. Of course any other kind will do.

For the antenna one-half pound of No. 18 bare copper wire will do. This will give about 100 feet of wire. Two porcelain insulators will also be required and should not cost over 5 cents. The wire can be had for about 30 cents.

String the wire the greatest length possible, and attach outer end to a tree or other elevation, at least thirty feet high (see Fig. 4). The other end of the wire enters the house and is attached to the switch button marked ANT and a short piece of rubber tubing should be slipped over the wire where it passes through the wall of the building.

A good ground can be had by connecting a wire to the nearest gas or water pipe. Scrape the pipe for a length of about two inches, so that it shines, then wrap several turns of wire around it and twist tightly.

To operate, connect the radio-winder wire so that the pin rests on the crystals. Move the pin over the surface until a signal is heard; at the same time move the switch over and leave it on the ore that brings in the station the loudest. With this set in New York City using only a 24 wire, 25 feet long strung up in a room, WDYS and WJS' S concerts came in fine. And on several occasions, the phone could be held up close to the ear, and still the music and voice could be distinguished.
A Simple Radiophone Receiver
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Winner of First Prize $100.00

The important points of this set are:
1. It is simple in construction and operation. A knife or razor blade and a small nail are the only tools required to make it. The complete set can easily be constructed in about one-half hour.

3. It is inexpensive. The total cost, including the phone and antenna, is less than $3.00, the set itself costing only 71 5/16 cents. A radio receiver of this kind can be used for any distance of 10 to 30 miles from the station. The aerial in this case should be at least 60 feet long and composed of four wires.

A radiophone outfit of this kind will bring in radiophone music and radio entertainment as sent out by the broadcasting stations providing the outfit is not more than 10 to 30 miles from the station. The further you are away from the broadcasting station the higher and longer your aerial must be.

The material required is as follows:
1. Paper container (4" in diameter)
2. 2 oz. No. 26 enamelled copper wire.
3. 5 oz. leaks
4. 1 small piece of silicon or galena
5. 2 paper fasteners (small size)
6. 12 paper fasteners (large size)
7. 1 common pin
8. 1 large piece of cloth

Take the container and punch nine holes one inch down from the top, with a small nail, one half inch apart. Into each hole push a paper fastener. With pen and ink (Continued on page 1172)

All of the parts and wiring arrangement followed in building the $100.00 prize-winning radiophone receiving set are here illustrated.