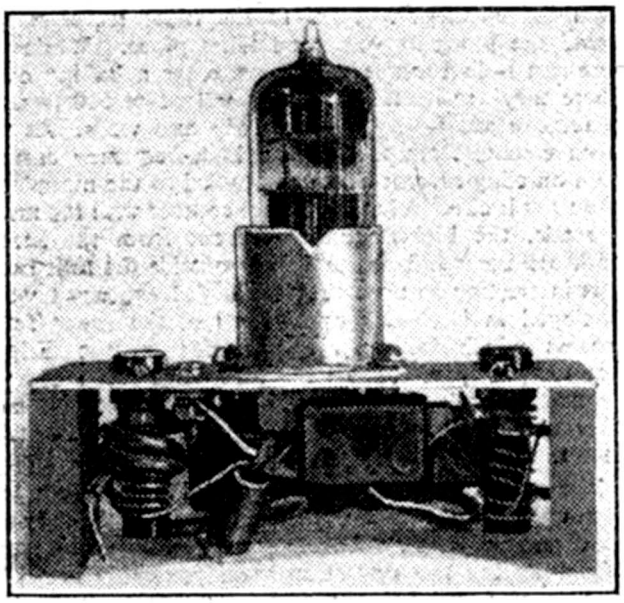
The "ARGUS"

A HIGH-GAIN, COMPACT UNIT FOR THE



The complete Pre-amplifier

ALTHOUGH this pre-amplifier was originally designed for the "Argus" televisor, its compactness makes it suitable for use with practically any televisor—homebuilt or commercial. It uses one of the modern miniature valves (a Mazda 6F12), which provides high gain with low noise.

Fig. 1 shows the circuit. Following the principles of the Argus design, the amplifier has been kept as simple as possible, consistent with good results, so that it can be built with confidence by the novice.

The H.T. and heater supplies are obtained directly from the existing vision receiver, the slight extra drain (300 mA. L.T and 12 mA. H.T.) adding very little to the total load on the mains transformer.

Coil Details

The prototype was designed to work on the Sutton Coldfield transmitter, but the number of turns required for any channel are given in the table.

L1 and L2 are wound in bare 22 s.w.g. wire, the turns being approximately 2 mm. apart, though this figure is not too critical, and it will be found that the Alexandra

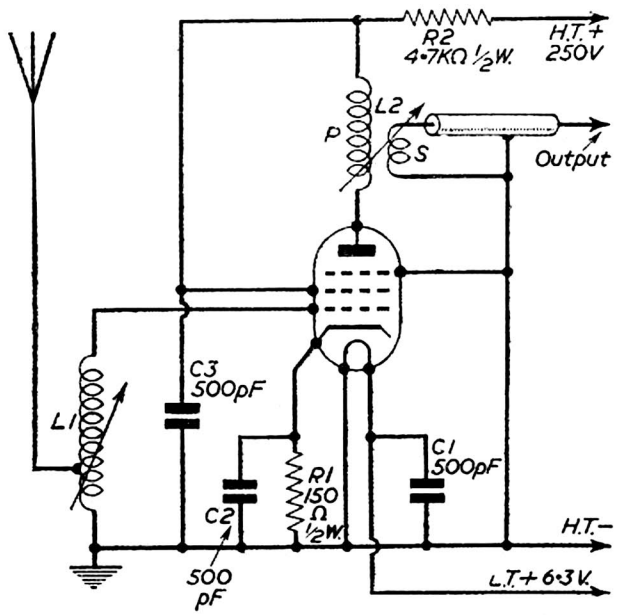
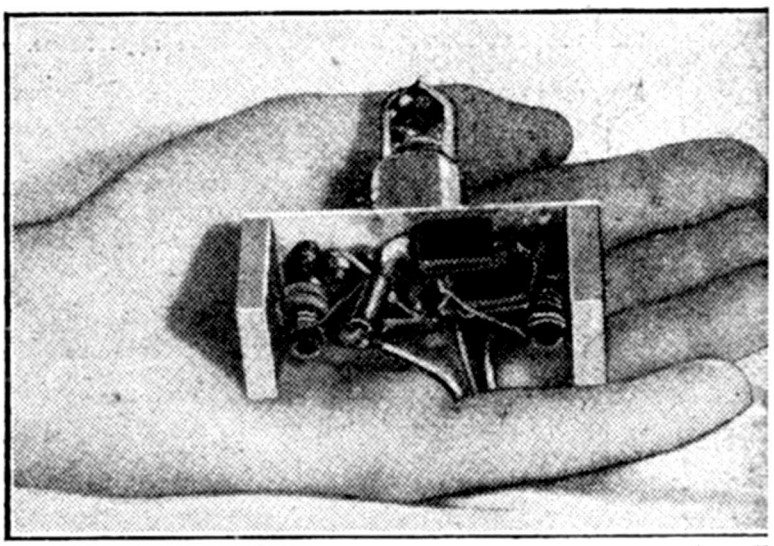


Fig. 1.—Theoretical circuit of the Pre-amplifier.

Palace transmitter will require closer spacing than this to accommodate the turns on the coil former.

The coil formers are ¼in. in diameter and are tuned with iron-dust cores. L1 is wound in a clockwise direction starting from the bottom of the coil, the earthy end of the winding being earthed under the coil-retaining bolt. The tap is made while the coil is being wound and it will be found easier to make the windings before the coil is mounted on the chassis. If the bare wire is so wound that adjacent turns are touching, then it will be found they will spring apart when the pressure is released and the correct spacing between turns obtained.

L2 has the primary wound first in bare wire. The



This illustration gives an idea of the size of the unit.

primary is the coil with the larger number of turns. The wire is wound in a clockwise direction, but as there is no earthy end the wire should not be terminated under the coil-retaining bolt. The secondary is wound next, the wire (22 s.w.g.) being covered with plastic sleeving. The turns are wound so that they come on top of the existing winding, at the bottom end of the coil. The earthy end is earthed under the coil-retaining bolt.

Fig. 2 shows the coil winding details.

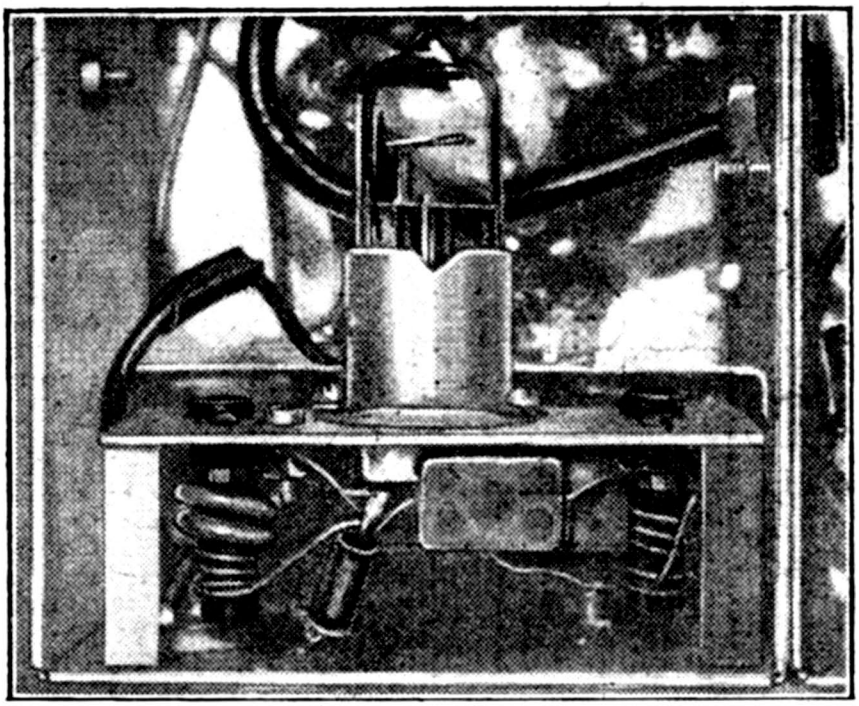
COIL WINDING DATA

Coil	Alex. Palace	Sutton Coldfield	Holme Moss	Kirk o' Shotts	Wenvoe
L1 tap	3	2	2½	2	1½
L1	12½	8	11	9½	6
L2 p	12½	8	11	9½	6
L2 s	3	2	2½	2	1½

¼in. coil-formers with iron-dust cores.
Wire, 22 s.w.g. Bare. 2 mm. spacing between turns.
L2 s 22 s.w.g. insulated wire.

Pre-amplifier

E "ARGUS" TELEVISOR



The Pre-amplifier incorporated in the Argus.

The Chassis

The chassis is very simple, consisting of a sheet of aluminium measuring 3in. by 1¼in. In the prototype the end pieces were made from hardwood ¼in. thick by 1in. by 1¼in. It is suggested, however, that the aluminium chassis could be extended as shown in the diagram in Fig. 3.

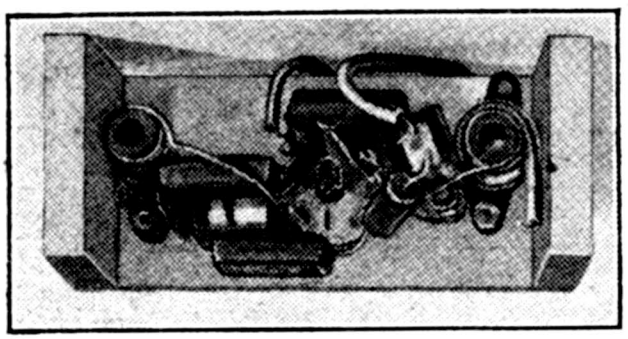
Wiring

The wiring diagram is given in Fig. 4. The only point to remember here is to keep the leads as short as possible. The input to L1 is made by coaxial cable from the aerial socket on the Argus, and the output is also taken via coaxial cable to the first coil in the Argus, where the aerial is normally connected.

If the pre-amplifier is being used with another televisor then the connections will be similar, provided the televisor normally uses coaxial cable. If the televisor is of the balanced twin input type, then the coil circuits will have to be slightly modified as shown in Fig. 5.

Fitting

The unit can be fitted at any convenient point, preferably adjacent to the aerial and clear of power packs and time-bases. A suggested position for the Argus is shown in Fig. 6.



Compare this illustration with Fig. 2 below.

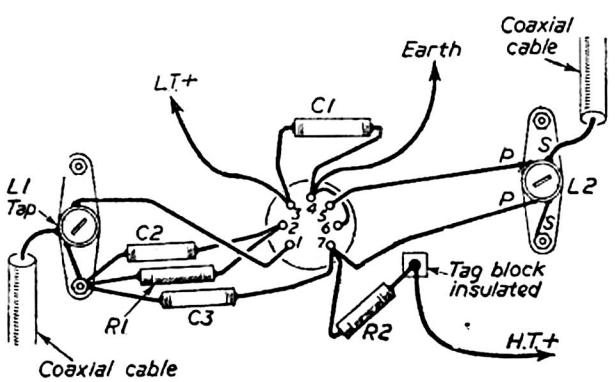
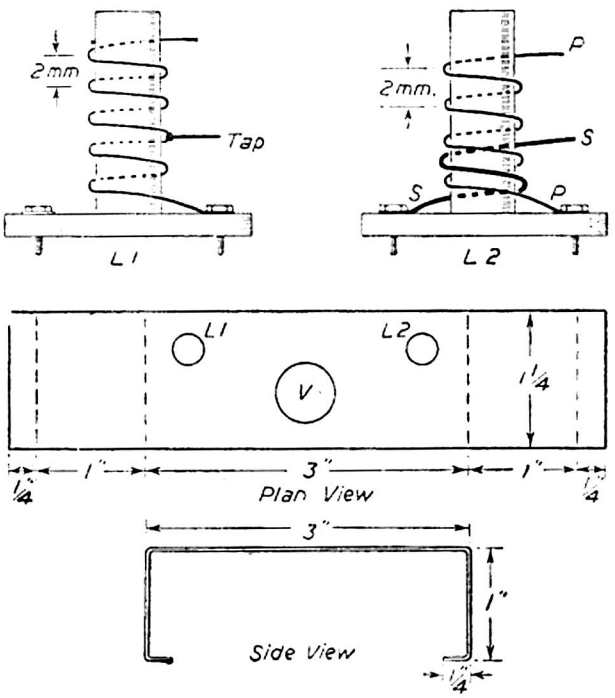


Fig. 4.—Wiring details.

Alignment

Alignment is extremely simple; all that is necessary is to adjust the iron-dust cores for maximum vision. The best method of doing this is to adjust Brilliance and Contrast controls until a normal picture is received, and then to turn down the *Brilliance* control until the high lights of the picture can just be seen. It is preferable to do this on test card C, or even the opening tuning-in signal, as the high lights vary with picture content during the programme.

By adopting the above method it is then quite easy to obtain maximum picture amplification, the Brilliance control being reduced as the screen brightens.



Figs. 2 and 3.—Coil-winding details and chassis data.