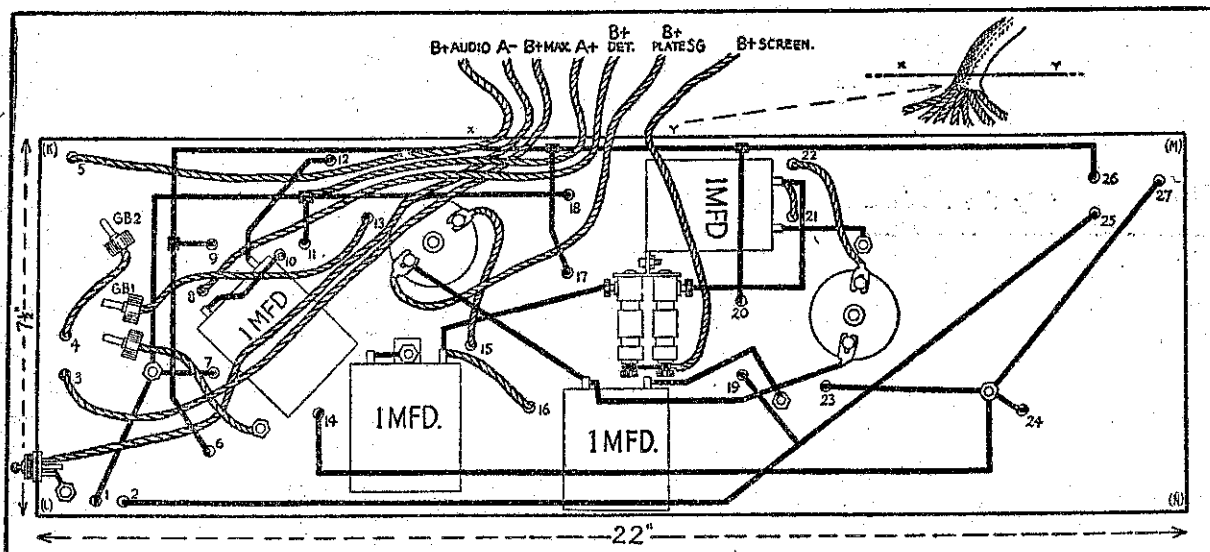




The under-baseboard layout.

ult. As in the "Eagle Five," however, the negative side of the s.g. valve filaments are not earthed, except through the rheostat, it was not considered worth while to earth "F—" of the three remaining valves by means of direct connection to the screen. If, however, the constructor desires to do this, all that is necessary is to take wires from "F—" of the detector, 1st, and 2nd audio valve holders, to the bolts which hold the valve holders in place. The "F—" negative lead in the battery cable would then, of course, have to be connected to the screening by means of some convenient nut on the underside of the baseboard.

The question of the earthing of one side of the de-coupling condensers appears to be a question rather difficult to decide. In the case of the "Eagle Five" it has been found quite safe to run leads to the nearest points on the screening system, but in other receivers we have built it was found necessary from the point of view of stability to take the connections straight to the negative filament terminal of the valve concerned. It is undoubtedly in the tuned circuit, however, that it is most important to use discretion in employing screen returns. In general it is a wise rule not to use such returns at all, but it is often possible to use them

to some limited extent without resulting harm.

The Batteries.

A WORD about the "A," "B," and "C" batteries. The valves recommended for use in the detector and audio stages are:—Detector, an R.C.C. valve, type A630; 1st audio, a valve of the A609 type; and 2nd audio, a small power valve of type B609. The bias required for these valves is not more than 9 volts, so we have been able to mount the small bias battery under the baseboard. If valves taking a larger plate current than those mentioned are used, however, a larger bias battery,

to give correct bias values, should be used.

If possible a six volts accumulator of generous capacity should be used for the "A" supply. As an alternative, however, eight 1½ volt dry cells connected in series-parallel will be found to give quite satisfactory results.

Regarding the "B" supply. Only heavy duty batteries should be used. Two 45-volt blocks will be found to give satisfactory results, but for best results at least three should be used. Of course, a suitable "B" eliminator is ideal.

Operating the Set.

WE will now assume that the wiring is completed and the set is ready for the initial try-out. First of all connect up the "A" battery only, turn on the filament switch, and rotate the rheostat. The screen-grid valve filaments should light up brightly, or glow a dull red according to the position of the rheostat. If this does not happen, then the mistake in the filament wiring should be immediately located and rectified before proceeding further. No glow will be seen from the last three valves, however, and their filament circuits should be tested in the manner outlined in the article on the "Night Owl Three," on page 29 of last week's issue.

If the constructor is doubtful of his wiring capabilities, both screen-grid valves should be removed while the "B" voltage is applied to the holders to determine whether it has accidentally been connected across the filament circuit or not. In any case, however, the circuit should be carefully re-checked before tests are carried out. Incidentally, if the speaker is not connected up, there will be no plate voltage on

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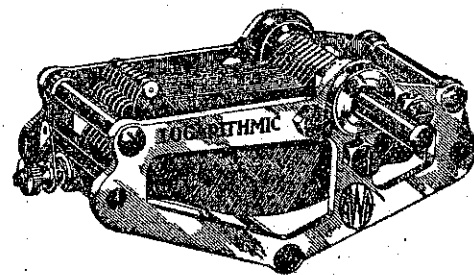
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