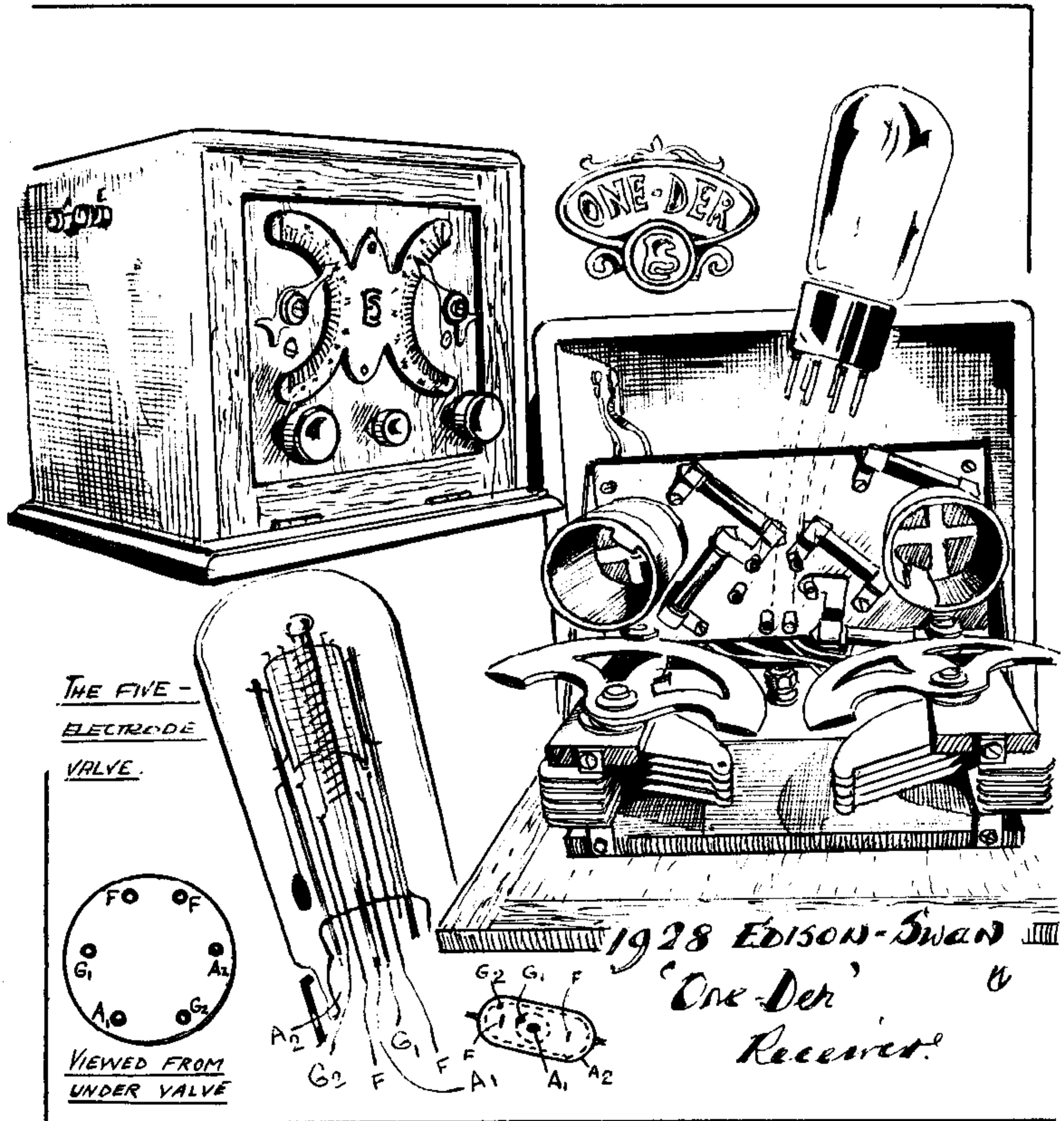


BRITISH

VINTAGE WIRELESS

SOCIETY



Many of the wireless sets eagerly sought after by collectors have no very special features to boast of - they are simply good representative examples of the standard technology of the day. But most collectors are only too happy when they find a receiver that is a bit out of the ordinary and are particularly pleased when a new find can be described by such epithets as, 'rare', 'unique', 'outstanding', 'innovatory' etc etc.

The Edison Swan 'One-Der' is certainly unusual and, judging from the number that have been seen among collectors during the past five or six years, it certainly comes into the 'rare' bracket. About four of them have so far been tracked down among BVWS members and not all of them are complete. At first glance the set is nothing very special at all. It is housed in an unattractive oak box with three knobs on the front and a rather ugly black and white plate containing the two graduated scales and the Edison Swan monogram (see illustration on the front cover). On examination of the circuit diagram (Fig.1.) the set is a very ordinary two valver with anode bend rectification and an RC coupled LF amplifier. As far as can be determined, this ordinary simple two valve set was never seriously marketed by Edison Swans but a few found their way out of the design department into private hands. Despite an extensive search of contemporary literature, no references can be found to the One-Der and no Edison Swan advertisements refer to it. Furthermore, the single valve (a double triode) used in the set is not listed in any of the Edison Swan or other valve data lists.... as far as is known.

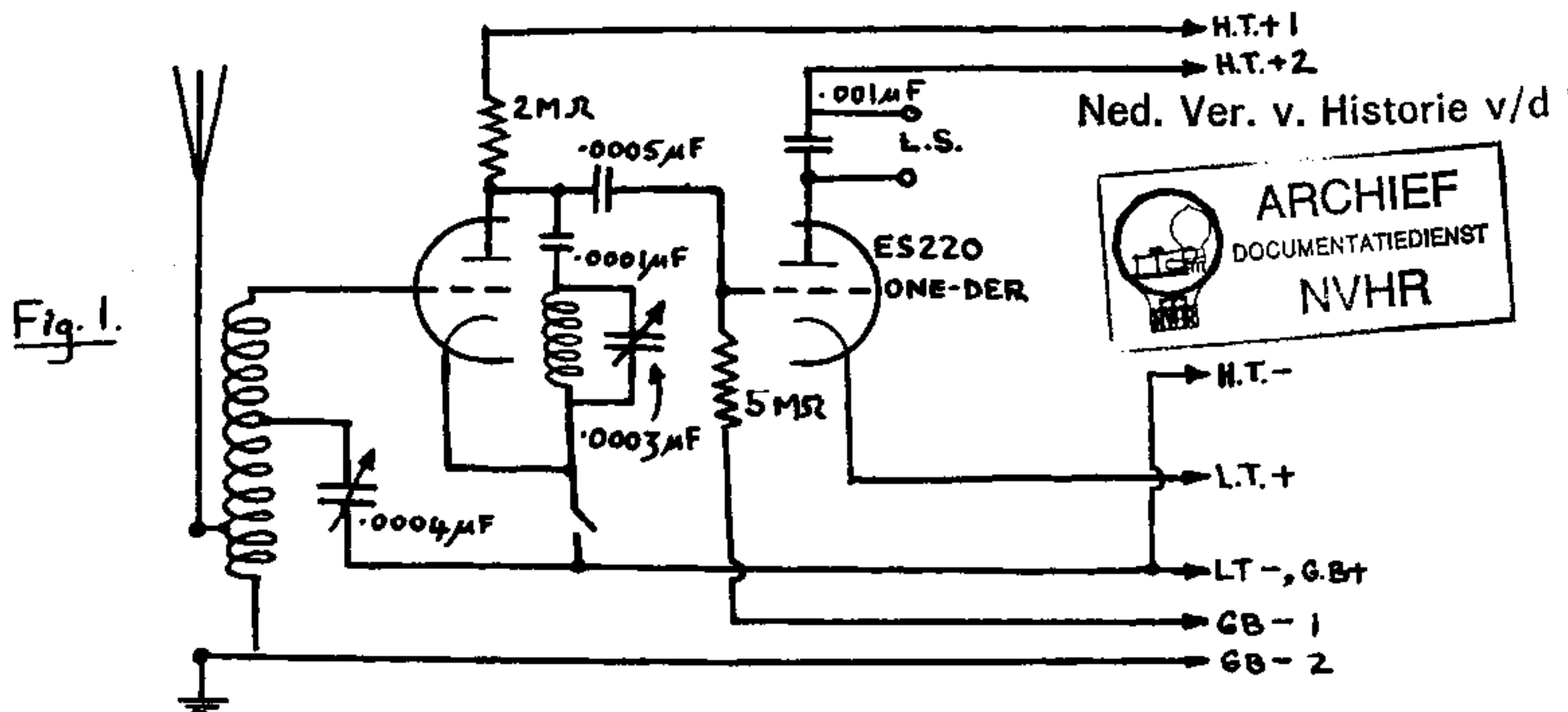


Fig.1.

It is really the valve which makes this set unusual. Its size and shape are quite typical of the post 1926 period and it carries the BVA stamp (the British Valve Association - formed July 1926). The leads from the valve electrodes are connected to solid base pins by the old technique of bringing the wires out through holes near the pins and then winding them round the pins before soldering. It is very lightly gettered which, fortunately, allows one to inspect the electrode construction in some detail. As shown in Fig. 2, the two triodes are mounted concentrically, the first using the inwardly directed stream of electrons and the second using the outwardly directed stream (see also diagrams on front cover). This curious 'inside-out' construction is very neat but highly unusual and I have yet to discover any other valve which makes use of it. The inside anode is simply

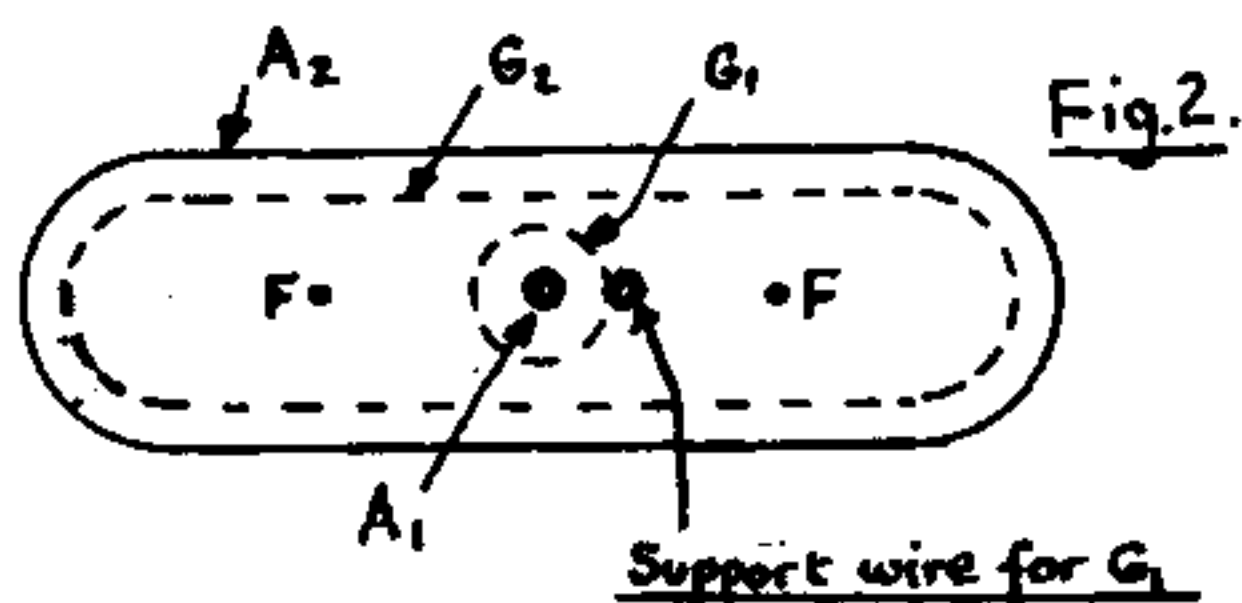


Fig.2.

a nickel rod about one millimeter in diameter. This is surrounded by a 3mm diameter spiral for the first grid. This grid is attached to a vertical rod parallel to the first anode rod and the two rods are held rigidly together at the top end by a small bead of glass. Immediately outside the first grid are two vertical filament wires connected together at the upper end. Outside these filament wires is a second spiral for the second grid and all the electrodes are contained within the outer anode. The base pin configuration is shown in the front cover illustration. The valve type number is ES220 and the words ONE-DER are also etched on the glass envelope.

No mention of this valve has so far been found in the valve literature of the late 1920's and it is not at all certain how many of them were made in the first place let alone how many have survived the ravishes of time. Two with intact filaments are known so far among BVWS members. After much searching, the original idea for this concentric construction has been tracked down to patent No. 292,218 issued to a Mr A.H.Midgely with an application date of 11th March 1927. Brief reference is made to this patent in 'Experimental Wireless & The Wireless Engineer', Vol V, No. 60, September 1968 page 533. Mr. Midgley claimed that "... the combined action of the two grids and anodes on the common electron stream gave rise to a reaction effect which increases the magnification factor." Having used the valve (under very cautious operating conditions!) I can only report that it performs moderately well in the ONE-DER set with very little suggestion of any reaction effect.

Without other information, one can only speculate about the history of this valve and receiver. It seems highly likely that they should be dated late 1927 or even early 1928 and that a small production batch was made. Perhaps this first batch was distributed to selected retailers for the purposes of 'market research'. The general appearances suggest excessive use of 'old technology', though this in itself is no reason why the set should not have been a marketing success - there were many examples of obsolescent technology retailing quite well in the late 1920's. Perhaps the ES220 was the stumbling block and did not lend itself to the new manufacturing ideas that began to emerge when Edison Swan became part of A.E.I. Ltd in 1928 ideas which culminated in the disappearance of BTH, Cosmos and Edison Swan valve types in 1929 and the introduction of the Mazda range.

Whatever the facts are, it is clear that the 'One-Der' must take its place in radio history as something out of the ordinary - a curiosity. Collectors of rare 1920's valves are always happy to discover that some new curiosity exists and presumably it will not be long before a few ES220's come to light.

It is possible that more facts may be discovered about this set and, when they become available, they will appear in the Bulletin and possible even replace some of the above speculation!

There was also a 'One-Der' horn speaker for use with the set. There are two speaker terminals on the right hand side of the set and the speaker output under the cautious conditions that I have operated it, is quite adequate for a small room. The aerial and earth terminals are on the left hand side and the battery leads all come out together through a hole at the rear. The ends of the battery leads are not provided with the usual banana plugs and accumulator spades. Instead, they all terminate with small solder tags as if they were intended to be connected to a special battery box or battery eliminator. Perhaps somebody will be able to throw some light on this matter by finding in their collection some such item with the Edison Swan insignia and possibly a 'One-Der' transfer. If so, I would certainly like that person to contact me.
