

Dec. 31, 1940.

A. WIESSNER

2,227,207

HIGH FREQUENCY SYSTEM

Filed March 15, 1938

TRANSFORMERS EACH CONNECTED TO FILTERS 2.
LOCATED IN DIFFERENT ROWS 8, 9, 10, WHICH
FEED LINES OF THE SAME ATTENUATION.

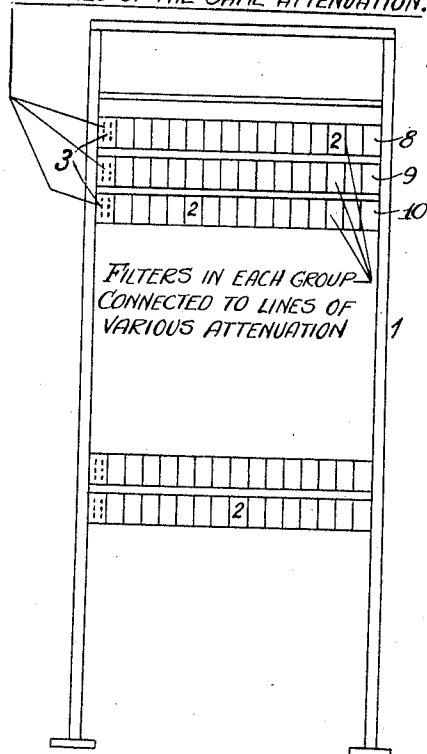


Fig. 1

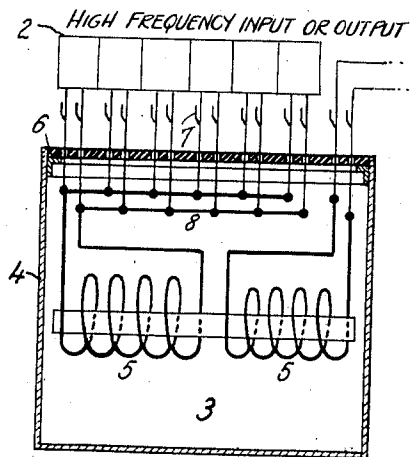


Fig. 2

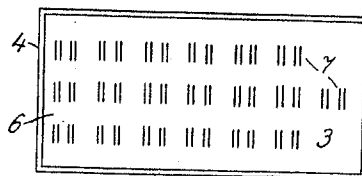


Fig. 3

Inventor:

Alfred Wiessner

By R. C. Noyes

Attorney

UNITED STATES PATENT OFFICE

2,227,207

HIGH FREQUENCY SYSTEM

Alfred Wiessner, Berlin, Germany, assignor to C. Lorenz Aktiengesellschaft, Berlin-Tempelhof, Germany, a company

Application March 15, 1938, Serial No. 195,995
In Germany March 19, 1937

3 Claims. (Cl. 179-2.5)

The invention relates to high frequency systems and particularly to wire-radio intelligence transmission.

It is a well known measure to effect intelligence transmission over networks by high frequency alternating carrier currents and to impress in an exchange office a plurality of carrier waves upon the telephone lines, for example. These systems necessarily require the provision of electric separating filters in order to enable the high frequency and the low frequency message currents to be applied to the transmission channel common thereto.

Propositions have been made to arrange such electric separating filters, which consist of suitably interconnected capacities and inductances, in box-shaped casings and to assemble these casings to groups in special racks. It has furthermore been proposed to associate a transformer common to a given number of electric separating filters, the lines of which have substantially equal lengths and attenuation, and eventually to connect further transformers to lines of different line attenuation as substitution for a filter.

Certain reasons require the separating filters to be arranged in the rack correspondingly to the wires of the lines allotted thereto, and e. g. side by side in accordance with the succession of the selector switches pertaining to these wires. Since in this case adjacent separating filters appertain to different groups of lines of equal attenuation, a large number of interconnections must be stowed in the supporting racks. However, the essential difficulty is involved, when the lines leading to the filters are to be connected to the transformer common thereto, because a plurality of individual filters distributed over the entire filter assembly must be connected up, while possibilities for later wiring changes must be provided for. The present invention has for its object to avoid the aforesaid difficulties. According to the invention, the transformers common to a group of lines of high frequency systems above mentioned are equipped with a plurality of connection elements.

The invention will be fully understood from the following description taken in conjunction with the accompanying drawing, in which:

Fig. 1 is a front elevation of one embodiment according to the invention; Fig. 2 illustrates a section through a transformer according to the invention; while Fig. 3 is a top view of the arrangement shown in Fig. 2.

Referring first to Fig. 1, there is shown a

frame 1 which is adapted to receive a plurality of rows formed by a number of electric separating filters 2 and, for instance, one transformer 3 which is to be associated with a given number of filters. Since the transmission lines by reasons above explained must be connected up in accordance with their lengths and their attenuation, one transformer will have to be associated with individual filters distributed all over the entire field.

The electrical separating filters are mounted together with the transformers in particular racks in connection with wire radio systems. The separating filters in such racks must be arranged in accordance with the appertaining wires, for instance, side by side in a succession which corresponds to the selectors allotted to the wires. However, adjacent separating filters belong to different groups of equal line attenuation so that a great number of junctions must be stowed in these filter racks. The most difficult conditions occur with respect to the connections of the lines from the filters to the transformer common thereto since a great number of filters distributed over the whole rack must be wired.

For the purpose of simplifying the wiring operation and in accordance with the invention, the transformers are provided with the necessary number of connection elements required for interconnection with a given number of electric separating filters.

This arrangement is illustrated in Fig. 2. The transformer 3 comprising the windings 5 and the allotted core which may be of high-frequency iron is placed in any suitable manner in a box of sheet metal, for example. The box 4 is closed by a cover 6 of insulation which carries at least twice as many connection elements 7 as the number of filters to be connected with the transformer. The connection elements 7 which may be soldering tabs, for instance, are connected to the winding 5 of the transformer over suitable leads 8 arranged in parallel relation in the interior of the box 4. For example, the transformer above illustrated and described is intended to be connected to 16 filters or further transformers, so that 32 soldering tabs are normally provided and 4 in spare.

What is claimed is:

1. In a high frequency signalling system, a plurality of electric separating filter units assembled adjacent each other in linear groups and connected to lines of various attenuation, the lines connected to a filter being of the same attenu-

ation, a line coupling transformer mounted in alignment therewith, one winding of said transformer being connected in parallel with filter units connected to lines of the same attenuation, said transformer having a terminal board containing a plurality of sets of connector tabs all connected to said one winding of the transformer for forming the connections to said filters, there being one set of tabs for each of the filter units last mentioned, and a separate set of line connecting terminals on said board connected to the other winding of the transformer.

2. In a high frequency signalling system, a supporting frame having a plurality of supporting racks, groups of electric separating filter units connected to lines of various attenuation, the lines connected to a filter being of the same attenuation, the units of each group being mount-

ed in linear alignment on a corresponding rack, a line coupling transformer mounted in alignment therewith and connected to filters connected to lines of the same attenuation, each transformer unit being provided with a casing having a terminal board, said terminal board having a plurality of sets of connector tabs, one set for each of the latter filters and connected thereto, said sets of tabs also being connected in parallel to one winding of the transformer and a set of line connecting tabs on said board connected to the other winding of the transformer.

3. A system according to claim 2, in which the transformer windings have a common core of high frequency iron and enclosed within a box-like casing having a cover of insulation constituting the said terminal board.

ALFRED WIESSNER.