

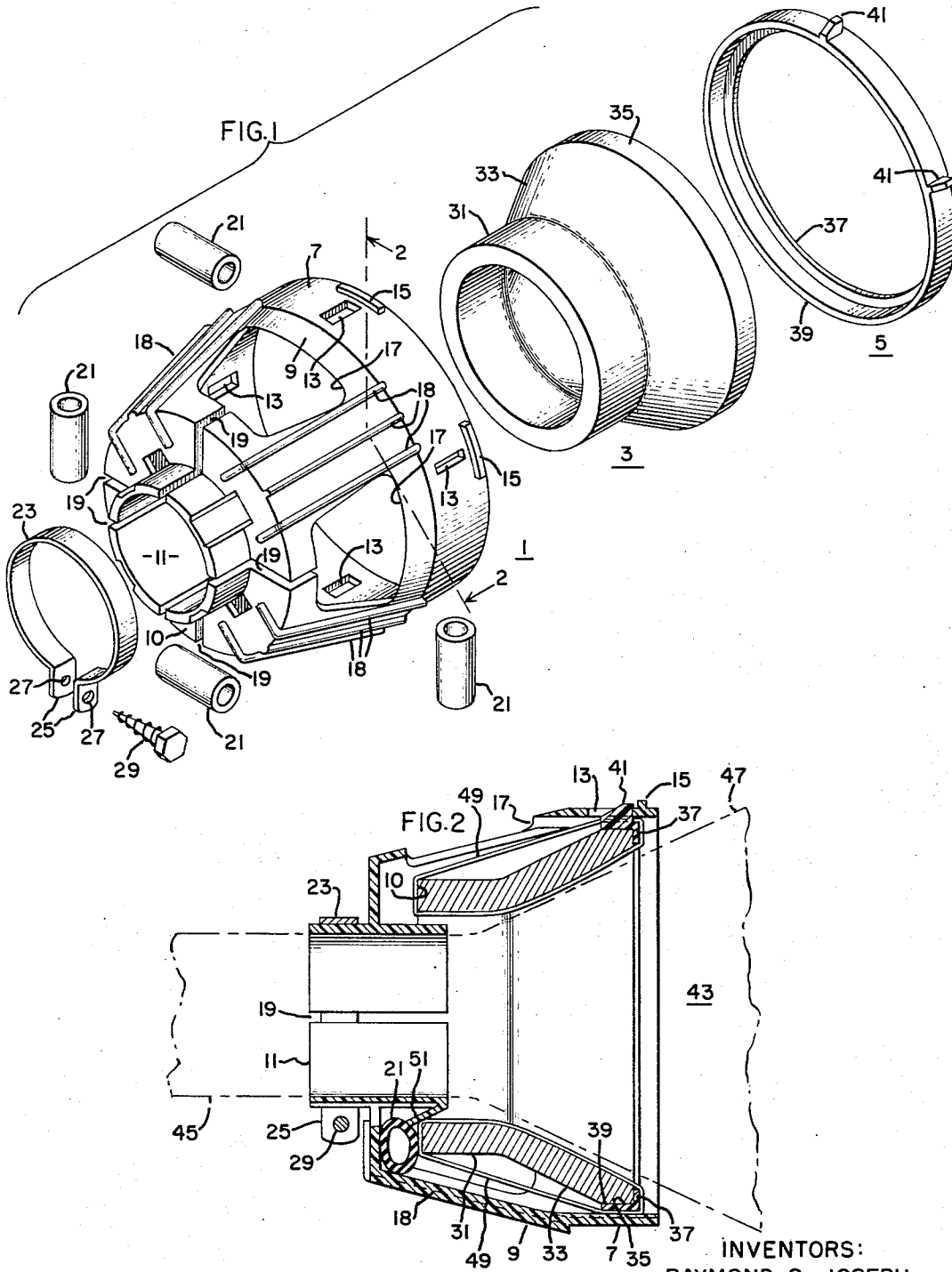
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DEFLECTION YOKE HOUSING FOR TELEVISION RECEIVER

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DEFLECTION YOKE HOUSING FOR TELEVISION RECEIVER

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ABSTRACT OF THE DISCLOSURE

In a television receiver, a deflection yoke housing comprises a mounting ring which is affixed directly to the core of the deflection yoke. The housing further comprises an integral hollow body including a first cylindrical portion, a second cylindrical portion, and a truncated conical portion therebetween. The core is positioned coaxially within the housing by inserting peripherally disposed mounting ears of the mounting ring through peripherally spaced slots in the first cylindrical portion and inserting segments of resilient tubing into the housing adjacent fingers which extend radially from the second cylindrical portion and engage the core.

The present invention relates to television receivers and more particularly to a housing for the deflection yoke of such a receiver.

It is necessary in television receivers to position a deflection yoke concentric with and overlying the neck of the cathode ray tube in order to suitably deflect the electron beam or beams passing therethrough. It is desirable that the yoke be fixedly positioned within a protective housing which also serves to mount the yoke to the tube.

A yoke housing of this type should allow the yoke to be easily mounted therein and should itself be easily assembled to the tube.

Similarly, the housing should be such that the yoke is automatically aligned therein while the housing itself is easily aligned on the neck of the cathode ray tube. The housing must also be compatible with a range of tube neck diameters within the relatively large tolerances encountered for a particular tube type.

In general, prior art housings of this nature have not completely satisfied the above requirements. Indeed, even the most satisfactory of the prior art housings are unduly complex and expensive and are incompatible with the trend toward smaller and lighter television receivers.

Accordingly, an object of the invention is to provide an improved yoke housing for a television receiver.

A further object is to provide a yoke housing which is less complex and less expensive than prior art devices.

Still another object is to provide a yoke housing which is smaller and lighter than prior art devices.

Yet another object is to provide a yoke housing which is easily aligned on the neck of the cathode ray tube and wherein the yoke is automatically aligned.

Still another object is to provide a yoke housing which is compatible with a relatively large range of cathode ray tube neck diameters.

These and other objects are achieved in one embodiment of the invention through the use of a molded plastic housing having means for automatically aligning a deflection yoke assembly comprising a toroidally wound hollow core member therein and further including means whereby the housing is automatically adjustable to the dimensions of the associated cathode ray tube.

The housing comprises a hollow generally cylindrical body member having a plurality of peripherally spaced slots therein, these slots receiving radially extending ears of a mounting ring affixed to the yoke core member to

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thereby mount and align the yoke assembly within the housing. The housing further comprises an integral hollow cylindrical tube neck engaging portion. The body member is provided with a plurality of axially extending slots which extend through the neck engaging portion. In this manner, the neck engaging portion comprises a plurality of arcuate axially extending segments, each segment being flexible with respect to the remaining segments. Accordingly, the neck engaging portion automatically adjusts to the dimensions of the associated cathode ray tube neck, a clamp being placed around the neck engaging segments to secure the housing to the tube neck and to provide a rigid assembly. In addition, the neck engaging portion is provided with a plurality of spaced outwardly extending spring fingers which engage the inner surface of the yoke assembly to exert aligning forces thereon.

The novel and distinctive features of the invention are set forth in the appended claims. The invention itself together with further objects and advantages thereof, may best be understood by reference to the accompanying drawings in which:

FIGURE 1 is an exploded perspective view of the yoke housing of the invention.

FIGURE 2 is a sectional view of the assembled device of the invention taken along the line 2-2 of FIGURE 1.

Referring to FIGURE 1 there is shown generally at 1 a yoke housing in accordance with the invention, the housing receiving a yoke assembly generally shown at 3 having a mounting ring 5 positioned thereon. The yoke housing of the invention is preferably injection molded from a thermoplastic material.

The yoke housing 1 comprises a hollow, generally cylindrical body member including a cylindrical portion 7 and an integral, truncated conical portion 9 having a generally planar end portion 10. The yoke housing 1 is further provided with a reduced diameter tube neck engaging, hollow cylindrical portion 11 which is partially nested within portion 9 as shown most clearly in FIGURE 2.

The cylindrical portion 7 is provided with a plurality of peripherally spaced slots 13 for mounting the yoke assembly therein, a peripherally extending strengthening rib 15 being associated with each slot 13. The truncated conical portion 9 of the housing is provided with a plurality of cutouts 17 to permit air circulation for cooling purposes, axially extending strengthening ribs 18 being positioned intermediate adjacent cutouts.

An axially extending slot 19 extends from each cutout 17 through the truncated conical portion 9 and the tube neck engaging portion 11. The neck engaging portion 11 thus comprises a plurality of arcuate axially extending segments, each segment being flexible with respect to the remaining segments and thus providing an automatic adjustment for variations in the tube neck dimensions.

A plurality of short pieces of resilient tubing 21 are provided to serve as spring biasing means for retaining the yoke assembly 3 in the desired position in the housing 1. The tubing is preferably a high heat neoprene material. A split clamp 23 overlies the segments of the neck engaging portion 11. The clamp is provided with a pair of radially extending tabs 25 having apertures 27 therein adapted to receive a screw 29 to clamp the segments of the neck engaging portion 11 to the tube neck to rigidly mount the housing 1 to the cathode ray tube.

The yoke assembly 3 comprises a hollow ferrite core member having a first cylindrical portion 31, a flared portion 33, and a second larger diameter cylindrical portion 35. A deflection yoke winding (not shown in FIGURE 1) is positioned on the yoke assembly 3 in conventional fashion.

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The mounting ring 5 comprises an annular portion 37 and an integral flange portion 39 adapted to overlie the cylindrical portion 35 of yoke assembly 3. The mounting ring 5 may be cemented to the cylindrical portion 35 of yoke assembly 3 or may be so dimensioned as to be retained thereon by an interference fit between the two members. The flange portion 39 is provided with a plurality of radially extending mounting tabs 41 adapted to be received by the slots 13 at the yoke housing 1.

Referring to FIGURE 2 the yoke assembly 3 is shown positioned in the housing 1, the housing in turn being affixed to a cathode ray tube generally shown at 43 having a neck portion 45 and a flared portion 47. A conventional toroidal deflection yoke winding 49 is shown positioned on the yoke assembly 3.

As depicted, the flange portion 39 of mounting ring 5 overlies the cylindrical portion 35 of the yoke assembly 3, the winding 49 being wound over the mounting ring so that the ring comprises an integral part of the yoke assembly 3. The yoke assembly is positioned in the yoke housing 1 with the radially extending mounting tabs 41 received by the associated slots 13 in the yoke housing 1 to automatically align the yoke assembly within the housing. The radially extending mounting tabs 41 are tapered as shown to facilitate assembly of the yoke assembly 3 into the housing 1, the resiliency of the plastic material employed allowing the yoke housing to be sufficiently deformed for this purpose.

As depicted, the lengths of resilient tubing 21 are positioned between the yoke assembly and the planar end portion 10 of the truncated conical portion 9 of housing 1. The lengths of resilient tubing 21 thus serve as spring biasing means to urge the mounting tabs 41 into firm engagement with the cylindrical portion 35 to precisely and positively position the yoke assembly within the yoke housing.

A plurality of spaced outwardly extending spring fingers 51 formed integrally with the neck engaging portion 11 are also provided to automatically align the yoke assembly within the housing 1, a single such spring finger being shown in FIGURE 2. As depicted, each of the spring fingers 51 exert a radial outward directed force on the inner surface of the yoke assembly, the forces thus produced being oppositely directed to accurately and positively position the yoke assembly within the housing.

The split clamp 23 is placed around the neck engaging portion 11 to secure the housing to the tube neck, the clamp 23 thus serving to prevent movement of the arcuate portions of neck engaging portion 11 and causing the yoke housing to assume a rigid condition.

Thus, the invention provides an improved yoke housing which is less complex than prior art devices and which due to its small size and weight, is compatible with the trend toward smaller and lighter television receivers. Further, the yoke housing of the invention insures automatic and positive alignment of the yoke assembly therein and is itself easily aligned on the neck of the cathode ray tube.

Although the invention has been described with respect to certain specific embodiments it will be appreciated that modifications and changes may be made by those skilled in the art without departing from the true spirit and scope of the invention.

What we claim and desire to secure by Letters Patent of the United States is:

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1. In a television receiver including a cathode ray tube having a neck portion and having a deflection yoke including a core member associated therewith, a housing for the deflection yoke comprising;

- (a) an annular mounting ring affixed to the core member, said ring including a plurality of spaced radially extending mounting ears,
- (b) a hollow generally cylindrical body member having a plurality of peripherally spaced slots therein,
- (c) said body member including a hollow generally cylindrical reduced diameter portion adapted to receive the cathode ray tube neck in engagement therewith,
- (d) said body member being positioned concentric with and overlying the deflection yoke with each of said mounting ears received by an associated one of said peripherally spaced slots to mount said yoke in said housing, and,
- (e) the deflection yoke being positioned concentric with and overlying the tube neck with said tube neck engaging portion of said housing overlying and abutting the tube neck.

2. The housing defined in claim 1 wherein said neck engaging portion is provided with a plurality of integral outwardly extending fingers engaging the inner surface of the core member to exert aligning forces thereon.

3. The housing defined in claim 2 wherein said neck engaging portion is partially nested within said generally cylindrical body member.

4. The housing defined in claim 1 wherein said neck engaging portion of said body member is provided with a plurality of axially extending spaced slots to thereby define a plurality of arcuate axially extending neck engaging segments.

5. The housing defined in claim 4 including a clamp overlying and restraining said tube neck engaging segments to mount said housing to the tube neck.

6. The housing defined in claim 1 wherein said body member includes a generally planar end portion and spring bias means are interposed between said end portion and the deflection yoke to bias the deflection yoke away from said end portion.

7. The housing defined in claim 6 wherein said spring bias means comprises resilient tubing interposed between said end portion and the deflection yoke.

8. The housing defined in claim 1 wherein said generally cylindrical body member comprises a first hollow cylindrical portion, a second hollow cylindrical neck engaging portion, and an integral truncated conical portion intermediate said first and second cylindrical portions.

9. The housing defined in claim 8 wherein said truncated conical portion is provided with cutouts for cooling purposes.

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