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3,136,931

DEFLECTION YOKE CONSTRUCTION WITH TERMINAL BOARD

Filed June 20, 1963

3 Sheets-Sheet 1

FIG. 1

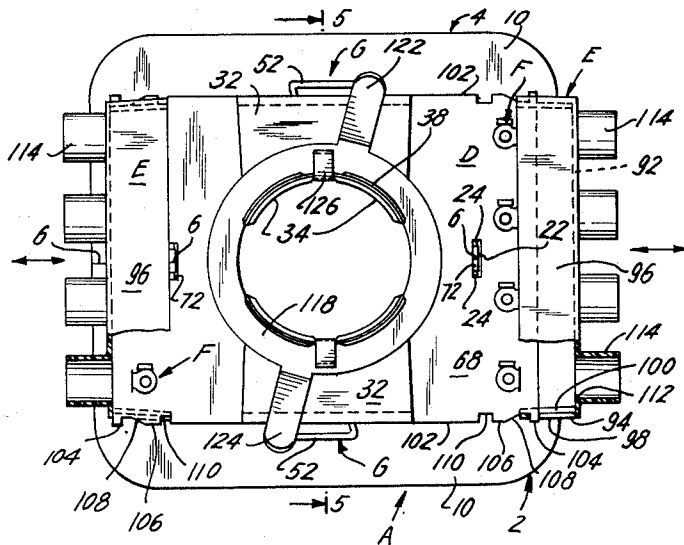


FIG. 2

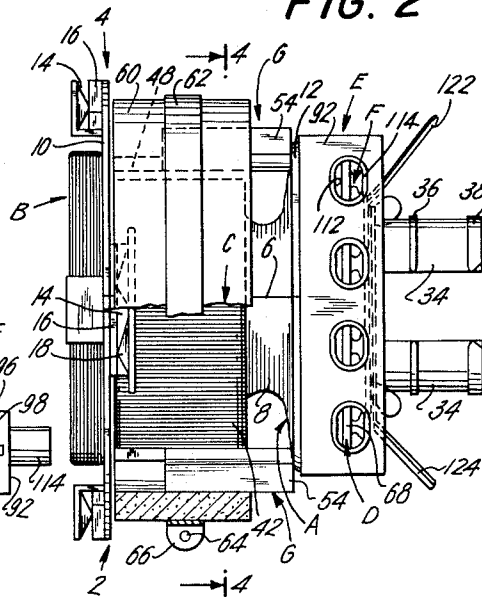
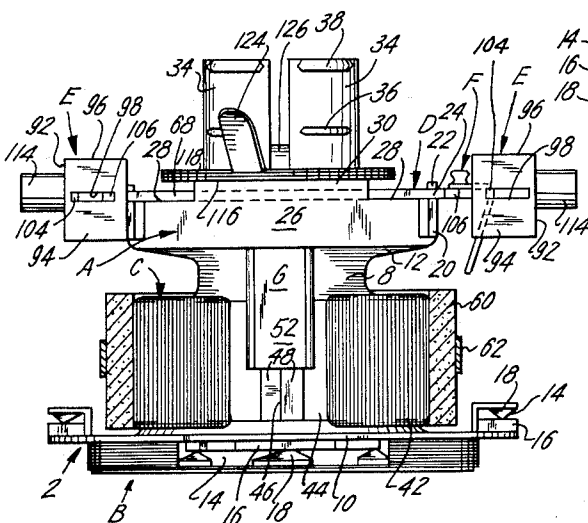


FIG. 3



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FIG. 4

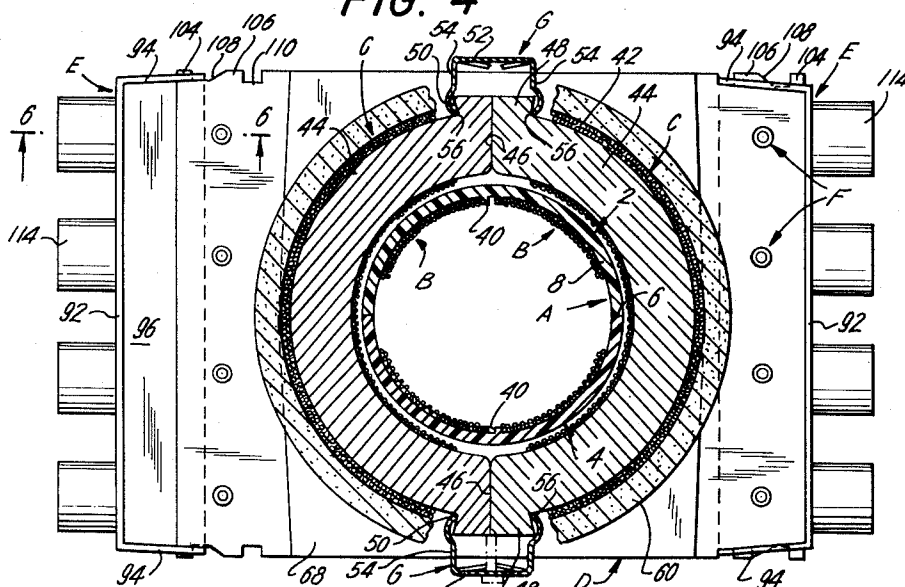


FIG. 5

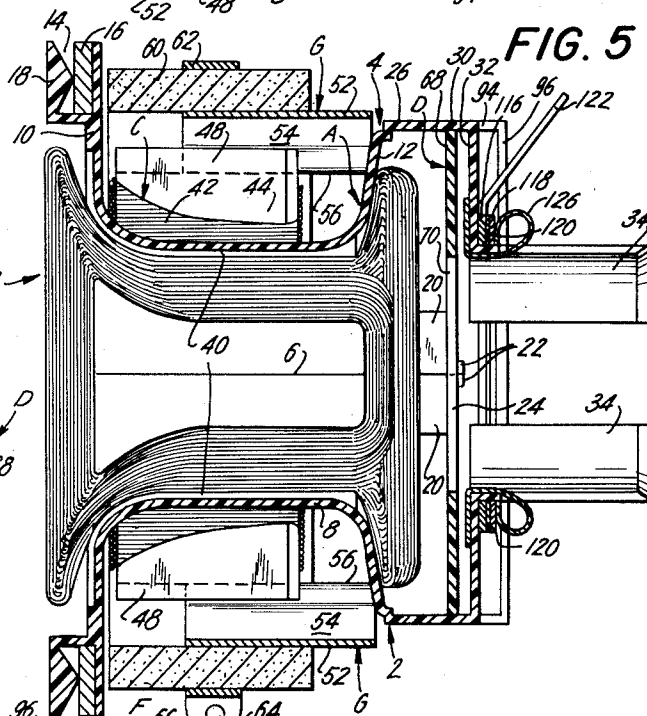


FIG. 7

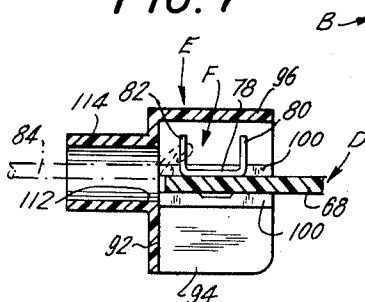
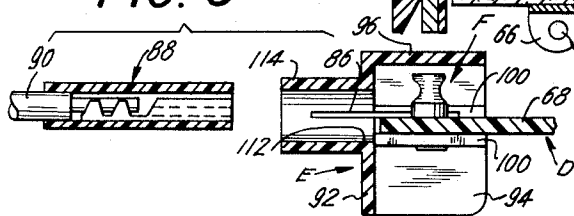


FIG. 8



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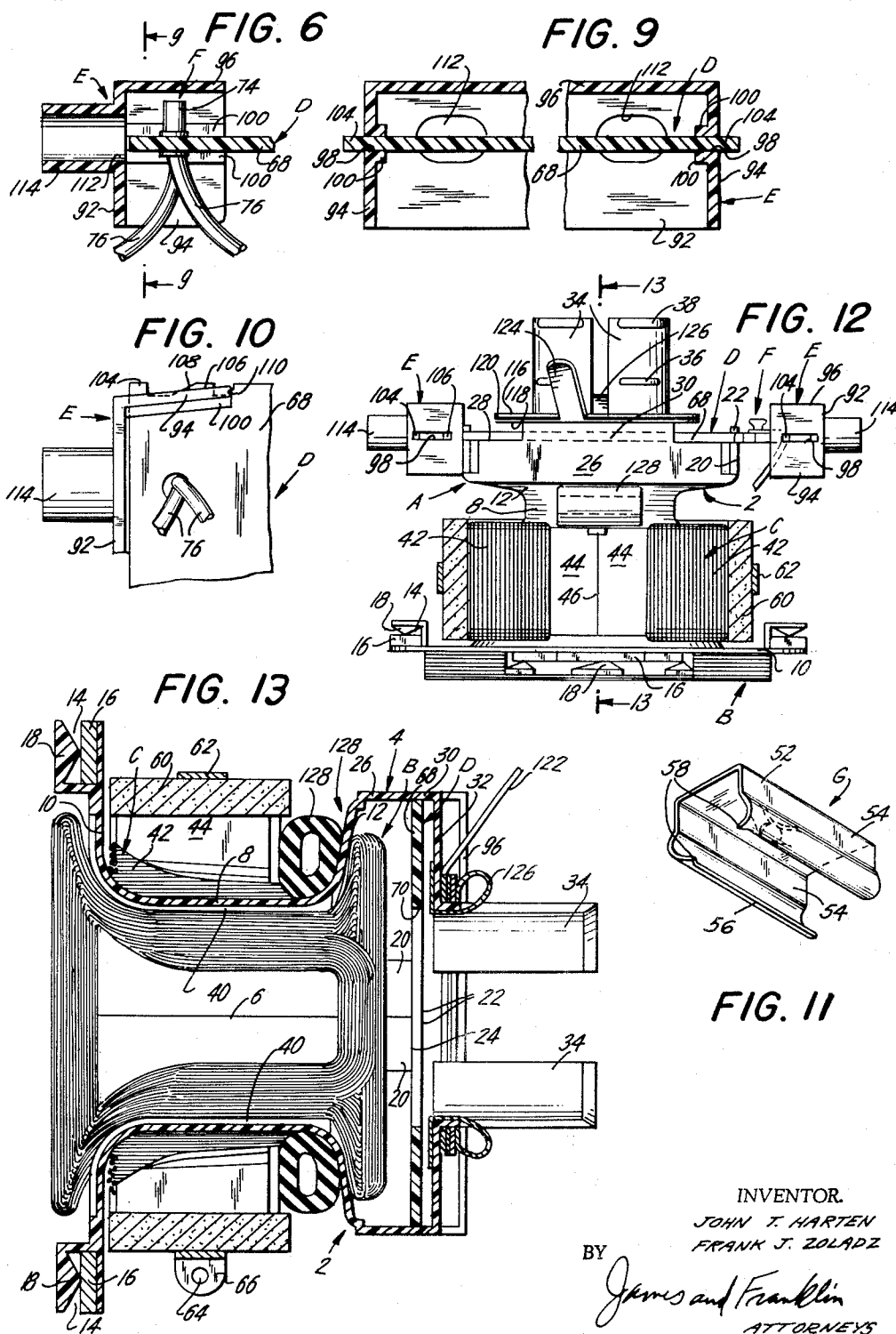
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3,136,931

DEFLECTION YOKE CONSTRUCTION WITH TERMINAL BOARD

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23 Claims. (Cl. 317—200)

The present invention relates to the construction of a deflection yoke such as those used in television sets, and more particularly to the construction and arrangement of the parts thereof in order to facilitate manufacture and use.

In order to provide varying magnetic fields capable of acting upon, and providing the proper deflection to, electron beams in cathode ray tubes, particularly those used for television reception, a yoke is provided which is positioned on the neck of the tube and which supports electrical windings which are adapted, when appropriately energized, to produce the desired magnetic fields. Usually two sets of windings are provided, each adapted to produce a deflecting magnetic field at right angles to the field produced by the other. It is necessary that the yoke be so constructed that the windings be mounted thereon in proper position, that appropriate corrections or modifications be made to the magnetic fields produced by the windings in order to eliminate distortion and produce optimum results, that the support with coils thereon be readily mounted on the cathode ray tube with which it is to be associated, and that electrical connections be made to the windings carried by the yoke in a convenient and reliable manner, and also preferably in a manner such as to permit the making and breaking of those connections for purposes of repair or replacement.

The deflection yoke is, compared with most other components of a television set, quite large and bulky, and correspondingly comparatively expensive. The cost of manufacture and assembly of a television set is a highly critical matter, and the saving of even a few pennies on the cost of a component is appreciable, particularly when one considers the very large numbers of television sets which are manufactured and sold each year. In the case of deflection yokes economies in manufacture are very difficult to attain, particularly because lack of excellence in the yoke construction will make itself evident in distortions in the picture which is viewed, and the quality of that picture is readily apparent to the user of the equipment. Thus economy in deflection yoke construction cannot be purchased by the sacrifice of accuracy or precision.

It is the prime object of the present invention to devise a yoke construction which does significantly solve the apparent dilemma of inexpensiveness versus quality. More specifically, it is a prime object of the present invention to devise a yoke construction which is inexpensive to manufacture and assembly, which is superior in quality and accuracy of functioning to prior art structures, and which provides for much greater facility in the making of electrical connections to the windings forming a part of the yoke and in protecting those electrical connections, when made, against dislocation.

The yoke of the present invention comprises a multi-part liner or support on which the windings are adapted to be mounted, and on which, preferably, correcting magnets are also mounted. The yoke further comprises a terminal board adapted to be assembled with the liner parts and which functions, when thus assembled, to reliably retain the liner parts in assembled position as well as to perform its obvious task of providing for facile electrical connection between the windings and external leads. The liner and terminal board may be so constructed that when they are assembled together the liner parts tend to

hold the terminal board in proper position. These results are accomplished by providing the liner parts with sections adapted to extend around the terminal board and hold the latter in position on the liner parts, while at the same time lugs extending from the liner parts engage in appropriately positioned apertures in the terminal board.

The terminal board carries terminals to which leads from the windings are connected, and external leads are adapted to be electrically connected to those terminals. Inexpensive molded covers may be provided which are detachably associatable with the terminal board and which, when placed in position, cover and protect the terminals thereon. These covers may be provided with suitable apertures registering with the terminals, through which apertures the external leads may pass. Thus the terminals and the electrical connections thereto of the leads from the windings and the external electrical connections are all protected. This construction particularly permits the use, on the terminal board, of separable connector elements protected by the cover but accessible to cooperating separable connector elements on the external electrical wires. The cover can also provide some strain relief to the external wires. If desired, and as here specifically disclosed, the cover may be selectively positionable in a plurality of positions with respect to the terminals, thus making a single standardized construction readily adaptable to such different types of electrical connections to the terminals as may be desired in a particular series of installations, and facilitating the making of soldered connections without having to remove the covers from the assembly.

In those instances where one of the deflection windings is wound about a core, the combination core and windings then being positionable on the liner, the core may be provided in two parts held together by a spring clamp, that clamp being specially constructed so as to not only hold the core parts together in encompassing relation to the liner but also to properly and rigidly axially position the core and associated winding relative to the liner.

All of these results are achieved by means of a series of parts which may be inexpensively manufactured, which need not be made to any particular degree of precision, and which may readily be assembled to produce a yoke which functions accurately and effectively.

To the accomplishment of the above, and to such other objects as may hereinafter appear, the present invention relates to the construction of a deflection yoke as defined in the appended claims and as described in this specification, taken together with the accompanying drawings, in which:

FIGURE 1 is a rear elevational view of one embodiment of the present invention, with the lower portions of the terminal board covers being broken away and cross sectioned, the left hand terminal board cover being shown in one assembled position relative to the terminal board and the right hand terminal board cover being shown in another assembled position relative to the terminal board;

FIG. 2 is a side elevational view, partially broken away and cross sectioned, taken from the left hand side of FIG. 1;

FIG. 3 is a bottom elevational view, partially cross sectioned, of the embodiment of FIG. 1;

FIG. 4 is a cross sectional view taken along the line 4—4 of FIG. 2;

FIG. 5 is a cross sectional view taken along the line 5—5 of FIG. 1;

FIG. 6 is a cross sectional view taken along the line 6—6 of FIG. 4;

FIG. 7 is a view similar to FIG. 6 but showing a different type of terminal on the terminal board;

FIG. 8 is a view similar to FIG. 6 but showing yet another type of terminal on the terminal board which

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comprises a male separable connection element, FIG. 8 also showing the female separable connection element cooperable therewith;

FIG. 9 is a cross sectional view taken along the line 9—9 of FIG. 6;

FIG. 10 is a detail elevational view, on an enlarged scale, showing a corner of the terminal board and the cover therefor;

FIG. 11 is a three-quarter perspective view of the core clamp used in the embodiment of FIGS. 1—5.

FIG. 12 is a view similar to FIG. 3 but illustrating an alternative embodiment of the manner in which the outer winding and core may be fixed in position; and

FIG. 13 is a cross sectional view taken along the line 13—13 of FIG. 12.

The yoke of the present invention comprises a multi-part liner generally designated A on which horizontal and vertical deflection windings generally designated B and C respectively are mounted, with which is associated a terminal board generally designated D, preferably provided with covers E for covering and protecting the terminals F on the terminal board D. The vertical winding C is disclosed as being formed in two sections held together by clamps generally designated G, which clamps also can be used to rigidly axially position the winding C on the liner A.

As here specifically disclosed the liner A is formed of two substantially identical sections generally designated 2 and 4 adapted to meet and mate along their respective edges 6. Each section 2 and 4 may be formed of a plastic insulating material molded to shape, and comprises a substantially semi-tubular intermediate portion 8 with front and rear flanges 10 and 12 extending radially outwardly therefrom. The front flanges 10 may, as is conventional, carry adjacent their outer edges a plurality of circumferentially spaced troughs 14 within which correcting permanent magnets 16 may be positioned and held in place in any appropriate manner, as by engagement with the projections 18 and by means of appropriate cement. Extending rearwardly from each of the rear flanges 12 adjacent the line 6 are lugs 20 having tip portions 22 of reduced size, rearwardly facing ledge surfaces 24 being defined to either side of the tip portions 22. Wall parts 26 extend rearwardly from the rear flanges 12 at positions circumferentially spaced from, and preferably substantially centrally between, the lugs 20, the end portions of the wall parts 26 terminating in rearwardly facing surfaces 28 on a line with the surfaces 24. The central portion of the wall part 26 extends rearwardly, at 30, between and beyond the surfaces 28. Radially inwardly extending parts 32 are integrally connected therewith, the parts 32 being rearwardly spaced from the surfaces 28. Flexible neck segments 34 extend rearwardly from the ends of the parts 32, the outer surfaces of the neck segments 34 being provided with radially outwardly protruding portions 36 and 38 which are axially spaced from one another.

The shapes of the tubular intermediate portion 8 and the flanges 10 and 12, particularly on their radially inner surfaces, are such as to receive and support horizontal windings B of the saddle type, those radially inner surfaces being provided with protrusions 40 (see FIG. 4) for locating and separating the two halves of the horizontal deflection winding B.

When the two sections 2 and 4 are assembled together their intermediate portions 8 define a substantially continuous tubular intermediate section and their flanges 10 and 12 define substantially circumferentially continuous flanges, the lugs 20 on the section 2 abutting against the lugs 20 on the section 4 adjacent the mating edges 6. The thickness of the material of which the sections 2 and 4 are formed, and the composition of the material involved, permits some flexibility, particularly in the neck segments 34 and in the wall parts 32. Each of the liner

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sections 2 and 4 is preferably integrally formed, and may readily be molded in one piece.

The vertical windings C may, if desired, be of the saddle type, mounted and located in any appropriate manner on the outer surfaces of the intermediate portions 8 and front and rear flanges 10 and 12 respectively of the liner A. As here specifically disclosed, however, the vertical winding C is defined by a helical winding 42 wound about a central magnetic core 44, both the winding 42 and the core 44 being formed in two separate and substantially identical sections adapted to be placed around the intermediate portion 8 of the liner. As can perhaps best be seen in FIG. 4, the core sections 44 meet along the lines 46, each core section there being provided with a radially outwardly extending projecting portion 48 with an undercut side area 50. The core sections 44, with the winding sections 42 thereon, are adapted to be held in position around the intermediate portion 8 of the liner A by means of the spring clamps G. These clamps G are formed of strong resilient metal and have a top wall 52 and depending side walls 54, the inbent edges 56 of the side walls engaging the undercut areas 50 of the lugs 48, thereby retaining the core sections 44 in proper assembled position on the liner intermediate portion 8, and thus similarly positioning the sections of the winding 42. As may best be seen from FIG. 11, the edges 56 of the clamp G are provided with axially inclined teeth 58 adapted to dig into the surfaces of the undercut areas 50 of the lugs 48 which are engaged thereby, the inclination of the teeth 58 permitting the clamp G to be relatively readily slid axially in one direction but effectively preventing axial movement of the clamp G in the other direction. Hence, as may be seen from FIGS. 2, 3 and 5, the clamp G may be slid axially to the right as viewed in FIGS. 2 and 5 until it engages with the rear flange 12 of the liner, while at the same time the assembled core 44 and associated winding 42 are urged up against the front flange 10, thus axially fixing the position of the winding 42. The inclination of the teeth 58 is such as to effectively prevent movement of the winding 42 axially from its position abutting against the front flange 10. The length of the clamp G is made sufficient so that it can perform the function of axially positioning the winding 42 while at the same time effectively retaining the core sections 44 in circumferentially adjusted abutting position as shown in FIG. 4.

As is conventional, the radially outer periphery of the winding 42 may be covered with a protective layer 60, such as a foam or rubber strip, held in place by strap 62, the ends of the strap being held together by a screw (not shown) passing through apertures 64 in opposed ears 66 at the ends of the strap 62.

The terminal board D comprises a plate or sheet 68 of insulating material which carries terminals F adjacent the outer edges thereof. The plate 68 is preferably formed in one piece, with a central opening 70 formed therein which is adapted to fit around the neck of the picture tube on which the yoke is adapted to be placed. The plate 68 is further provided with a pair of apertures 72 (see FIG. 1) into which the tip portions 22 of the lugs 20 are adapted to be received. The terminal board D is slid under the wall parts 32, its front surface resting on the liner surfaces 24 and 28, the liner wall portions 32 serving to retain the board D in this position, and the entry of the lug tip portions 22 into the apertures 72 serve to retain the two sections 2 and 4 of the liner A in assembled position, as well as to fix the lateral position of the terminal board D relative to the remainder of the assembly.

The terminals F carried by the terminal board D may take any desired form. As illustrated particularly in FIG. 6, the terminals F may comprise standard eyelet type terminals 74 which facilitate the connection thereto of cables 76. As illustrated in FIG. 7, the terminals F comprise double ended terminals 78 to one prong 80 of which a lead from a winding B or C may be connected and to

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the other prong 82 of which an external lead 84 may be connected. As illustrated in FIG. 8 the terminals F comprise a standard male detachable connector part 86 to which a lead from a winding B or C may be connected, that male terminal component 86 being cooperable with a standard female component generally designated 88 to which external lead 90 may be connected. All of these terminals F facilitate the use of dip solder techniques, particularly in connecting the winding leads thereto.

The terminal board D is particularly adapted for use in conjunction with the removable, captivated and adjustably positionable terminal covers E. The covers E are provided in a pair of symmetrical parts, one to be used on each side of the terminal board D. Each comprises a top wall 92, side walls 94, and an end wall 96, all integrally formed of a suitable insulating plastic material and preferably being of a thickness such as to provide some degree of resilient bendability, particularly in the side walls 94. Those side walls 94 are provided with elongated openings 98, preferably flanked by inwardly projecting rails 100. They are adapted to extend along the side edges 102 of the terminal board plate 68, those side edges 102 being appropriately configured so as to slide inside the rails 100 and to engage with the elongated openings 98 in the cover side walls 94, thereby to retain the cover E in position. As here specifically disclosed the side edges 102 of the terminal board plate 68 are provided with lugs 104 adjacent the corners of the plate 68 and with lugs 106 inwardly spaced from the lugs 104, inclined surfaces 108 extending between the lugs 104 and 106 and recesses 110 being provided inwardly of the lugs 106.

Accordingly, as may clearly be seen from FIG. 1, the covers E may be mounted on the terminal board D in either of two positions. On the right hand side of FIG. 1 the cover E is mounted in its outer position relative to the terminal board D, the lugs 104 being received in the slots 98 and inner edges of the cover E resting on the inclined surfaces 108. At the left hand side of FIG. 1 the cover is shown in its inner or more fully telescoped position, with both of the lugs 104 and 106 passing through the elongated apertures 98, the inner edges of the cover E resting in the recesses 110. When the cover E is in its outer captivated position the terminals F are exposed, while when the cover E is in its inner captivated position the terminals F are covered and protected by the end wall 96 of the cover E.

The top wall 92 of the cover E is provided with a plurality of apertures 112 communicating with tubular outward extensions 114, each aperture 112 and tubular extension 114 registering with a different terminal F, thereby providing external access thereto, guiding and separating the external leads connected thereto, and providing a measure of strain relief to those external leads. The tubular extensions 114 are particularly effective when plug-in type external connections are employed, as in the embodiment of FIG. 8, since the tubular extensions 114 thus provide guides or supports for the plugged-in detachable connector elements 88. When electrical connection is made to the terminals F from the underside (as viewed in FIG. 1) of the terminal board D, the end wall 96 defines a protective skirt therefor.

The neck segments 34 forming a part of the liner A are adapted to fit around and engage the interior of the neck of the television tube with which the yoke is to be used, and are adapted to be clamped to the neck of that tube by a clamping ring (not shown) retained between the projections 36 and 38. If desired, a correcting magnet arrangement may also be mounted on the neck segments 34, that correcting arrangement being here shown as a pair of rotatable radially magnetized rings 116 and 118 separated by a spacer 120 and provided respectively with adjusting fingers 122 and 124, all held in place against the exposed surfaces of the liner wall parts 32 by means of spring clip 125.

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FIGS. 12 and 13 disclose an embodiment similar to that of FIGS. 1-5, except that the mounting of the two-section vertical winding 42 with its associated two-section core 44 is accomplished in a specifically different manner. Thus the axial positioning of the winding 42 and core 44 is achieved by interposing stiffly resilient members 128 between the rear flanges 12 and the winding 42, and by securing the two sections of the cores 44, with their associated windings 42, in position around the intermediate central liner portion 8 by means of a suitable glue or cement. It will be understood that a comparable glue or cement could also be employed in connection with the embodiment of FIGS. 1-5 if desired, for purposes of added security, and that the spring clips G, together with the radially projecting core lugs 48, could be employed in the embodiment of FIGS. 12 and 13 if desired, in addition to the use of the resilient elements 128.

From the above description it can be seen that the deflection yoke here disclosed is formed of a plurality of parts which can be readily manufactured on a large scale and in an inexpensive manner and without having to maintain particularly high degrees of dimensional tolerances. The terminal board D is locked in proper position on the liner A, in part by the action of the liner itself, and the terminal board D in turn serves to hold the liner sections 2 and 4 together. The terminal board D facilitates the making of electrical connections both to the windings B and C on the yoke and to external circuitry. The spring clamp G which holds the sections of the vertical winding 42 together around the tubular intermediate portion 8 of the liner A also serves to provide for reliable axial positioning of that vertical winding 42. The terminal board covers E can be attached or captivated to the terminal board D and are movable between an outer position permitting the making of electrical connections and an inner position protecting those connections when made. Thus a yoke construction has been devised which, without sacrifice in the quality and precision of electromagnetic functioning, can nevertheless be readily manufactured and assembled in an inexpensive manner, and contributes greatly to the rapid physical and electrical incorporation thereof into a more elaborate piece of equipment, such as a television set.

While but a limited number of embodiments of the present invention have been here specifically disclosed, it will be apparent that many variations may be made therein, all within the scope of the present invention as defined in the following claims.

We claim:

1. A deflection yoke comprising a liner defining a support having a substantially tubular intermediate portion and front and rear flanges extending radially outwardly from said intermediate portion adjacent the ends thereof, at least one deflection winding mounted on said liner, said liner having lugs extending substantially axially therefrom adjacent an end thereof, a member received on said liner at said end thereof and having apertures into which said lugs are received, and means for retaining said member in position on said liner, said means for retaining said member in position on said liner comprising first parts integral with said liner which extend substantially axially around spaced edges of said member and over the surface of said member disposed away from said end of said liner and second parts having substantially axially facing surfaces confronting said member, on which said second parts said member is seated.

2. A deflection yoke comprising a liner defining a support having a substantially tubular intermediate portion and front and rear flanges extending radially outwardly from said intermediate portion adjacent the ends thereof, at least one deflection winding mounted on said liner and having leads extending substantially axially therefrom, said liner having lugs extending therefrom adjacent an end thereof, a member received on said liner at said end thereof and having apertures into which said

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lugs are received, and means for retaining said member in position on said liner, said means for retaining said member in position on said liner comprising first parts integral with said liner which extend substantially axially around spaced edges of said member and over the surface of said member disposed away from said end of said liner and second parts having substantially axially facing surfaces confronting said member, on which said second parts said member is seated.

3. The deflection yoke of claim 2, in which said member has terminals mounted thereon, said leads being electrically connected thereto.

4. The deflection yoke of claim 2, in which said member has terminals mounted thereon, said leads being electrically connected thereto, and, in combination therewith, a terminal cover having parts detachably engaged with cooperating parts on said member and having a portion at least partially covering said terminals when said cover is engaged with said member, said portion having apertures therethrough registering with said terminals, whereby external access to said terminals is achieved via said apertures, said cover parts and said cooperating member parts defining means for mounting said cover on said member.

5. The deflection yoke of claim 2, in which said member has terminals mounted thereon, said leads being electrically connected thereto, and, in combination therewith, a terminal cover having parts detachably engaged with cooperating parts on said member and having a portion at least partially covering said terminals when said cover is engaged with said member, said portion having apertures therethrough registering with said terminals, whereby external access to said terminals is achieved via said apertures, said cover parts and said cooperating member parts defining means for mounting said cover on said member in either of two relative positions.

6. A deflection yoke comprising a liner formed of a plurality of pieces defining a support having a substantially tubular intermediate portion and front and rear flanges extending radially outwardly from said intermediate portion adjacent the ends thereof, at least one deflection winding mounted on said liner, said pieces which form said liner having lugs extending substantially axially therefrom adjacent an end thereof, a member received on said liner at said end thereof bridging lugs on each of said pieces, and having apertures into which said lugs are securely received, said member thereby retaining said pieces in assembled position, and means for retaining said member in position on said liner.

7. The deflection yoke of claim 6, in which said means for retaining said member in position on said liner comprises first parts integral with said liner pieces which extend substantially axially around spaced edges of said member and over the surface of said member disposed away from said end of said liner, and second parts having substantially axially facing surfaces confronting said member, on which said second parts said member is seated.

8. The deflection yoke of claim 7, in which said member has terminals mounted thereon, and said winding has leads electrically connected thereto.

9. The deflection yoke of claim 7, in which said member has terminals mounted thereon, and said winding has leads electrically connected thereto, and, in combination therewith, a terminal cover having parts detachably engaged with cooperating parts on said member and having a portion at least partially covering said terminals when said cover is engaged with said member, said portion having apertures therethrough registering with said terminals, whereby external access to said terminals is achieved via said apertures, said cover parts and said cooperating member parts defining means for mounting said cover on said member.

10. The deflection yoke of claim 7, in which said member has terminals mounted thereon, and said wind-

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ing has leads electrically connected thereto, and, in combination therewith, a terminal cover having parts detachably engaged with cooperating parts on said member and having a portion at least partially covering said terminals when said cover is engaged with said member, said portion having apertures therethrough registering with said terminals, whereby external access to said terminals is achieved via said apertures, said cover parts and said cooperating member parts defining means for mounting said cover on said member in either of two relative positions.

11. The deflection yoke of claim 6, in which said member has terminals mounted thereon, and said winding has leads electrically connected thereto.

12. In combination with the deflection yoke of claim 11, a terminal cover having parts detachably engaged with cooperating parts on said member and having a portion at least partially covering said terminals when said cover is engaged with said member, said portion having apertures therethrough registering with said terminals, whereby external access to said terminals is achieved via said apertures, said cover parts and said cooperating member parts defining means for mounting said cover on said member.

13. In combination with the deflection yoke of claim 11, a terminal cover having parts detachably engaged with cooperating parts on said member and having a portion at least partially covering said terminals when said cover is engaged with said member, said portion having apertures therethrough registering with said terminals, whereby external access to said terminals is achieved via said apertures, said cover parts and said cooperating member parts defining means for mounting said cover on said member in either of two relative positions.

14. In combination with the yoke of claim 1, a multi-part core extending around said tubular intermediate portion of said liner, one of said windings being on said core, said parts having confronting ends with radial projections adjacent said ends, thereby producing a pair of adjacent projections, and a clamp member engaged with said pair of adjacent projections and holding them in position, said clamp member being adjustably positionable relative to said pair of projections substantially in the direction of the axis of said tubular liner portion, thereby being movable into operative engagement with one of said liner flanges, said clamp member having tooth means engageable with at least one of said projections and effective to retain said clamp member in said adjusted position relative to said projections.

15. A deflection yoke comprising a liner defining a support having a substantially tubular intermediate portion and front and rear flanges adjacent the ends of said intermediate portion, a multi-part core extending around said tubular intermediate portion of said liner, a winding on said core, said core parts having confronting ends with radial projections adjacent said ends, thereby producing a pair of adjacent projections, and a clamp member engaged with said pair of adjacent projections and holding them in position, said clamp member being adjustably positionable relative to said pair of projections substantially in the direction of the axis of said tubular liner portion, thereby being movable into operative engagement with one of said liner flanges, said clamp member having tooth means engageable with at least one of said projections and effective to retain said clamp member in said adjusted position relative to said projections.

16. A deflection yoke comprising a liner formed of a pair of pieces which when assembled with one another define a support having a substantially tubular intermediate portion, front and rear flanges extending radially outwardly from said intermediate portion adjacent the ends thereof, a lug on each of said pieces extending rearwardly from opposed portions of said rear flange, walls circumferentially spaced from said lugs which extend rearwardly from opposed portions of said rear flange

and terminate in seating surfaces, and lips extending radially inwardly from said walls and spaced rearwardly from said rear flange; at least one deflection winding mounted on said liner; and a member received between said rear flange and said lips, seated on said seating surfaces, bridging lugs on both of said pieces, and having apertures into which said lugs are securingly received, said member thereby retaining said pieces in assembled position.

17. The deflection yoke of claim 16, in which said deflection winding has leads extending therefrom, said member has terminals mounted thereon, and said leads are electrically connected to said terminals.

18. In combination with the deflection yoke of claim 17, a terminal cover comprising walls received over said member and at least partially covering said member and said terminals, said cover and portions of said member covered thereby having cooperating parts defining means for mounting said cover on said member, one of said walls having apertures therethrough registering with said terminals, whereby external access to said terminals is achieved via said apertures.

19. In combination with the deflection yoke of claim 17, a terminal cover comprising walls received over said member and at least partially covering said member and said terminals, said cover and portions of said member covered thereby having cooperating parts defining means for mounting said cover on said member, one of said walls having apertures therethrough registering with said terminals and having open-ended tubular extensions registering with said apertures, whereby external access to said terminals is achieved via said tubular extensions and said apertures.

20. In combination with the deflection yoke of claim 17, a terminal cover comprising top, side and rear walls, said side walls being received over the corresponding sides of said member and said rear and top walls at least partially covering said terminals, said side walls and the sides of said member covered thereby having cooperating parts defining means for mounting said cover on said member in either of two relative positions, one of said rear and top walls having apertures therethrough regis-

tering with said terminals, whereby external access to said terminals is achieved via said apertures.

21. In combination with the deflection yoke of claim 17, a terminal cover comprising top, side and rear walls, said side walls being received over the corresponding sides of said member and said rear and top walls at least partially covering said terminals, said side walls and the sides of said member covered thereby having cooperating parts defining means for mounting said cover on said member, said top wall having apertures therethrough registering with said terminals and having open-ended tubular extensions registering with said apertures, whereby external access to said terminals is achieved via said tubular extensions and said apertures.

22. The deflection yoke of claim 21, in which said mounting means for mounting said cover on said member is effective to permit such mounting in either of two relative positions.

23. A deflection yoke comprising a liner defining a support having a substantially tubular intermediate portion and front and rear flanges extending radially outwardly from said intermediate portion adjacent the ends thereof, a deflection winding mounted on said liner and having leads extending therefrom, a member mounted on said liner and having a portion extending radially out from said liner, said member having terminals mounted thereon, said leads being electrically connected to said terminals, and, in combination therewith, a terminal cover received over said member portion and having parts detachably engaged with cooperating parts on said member and having a portion at least partially covering said member portion and said terminals when said cover is engaged with said member, said cover portion having apertures therethrough registering with said terminals, whereby external access to said terminals is achieved via said apertures.

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