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E. GOSTYN ETAL
TELEVISION TUBE DEFLECTION COIL ASSEMBLY
WITH SEPARABLE YOKE SECTIONS

3,165,677

Filed Aug. 30, 1960

4 Sheets-Sheet 1

FIG. 2

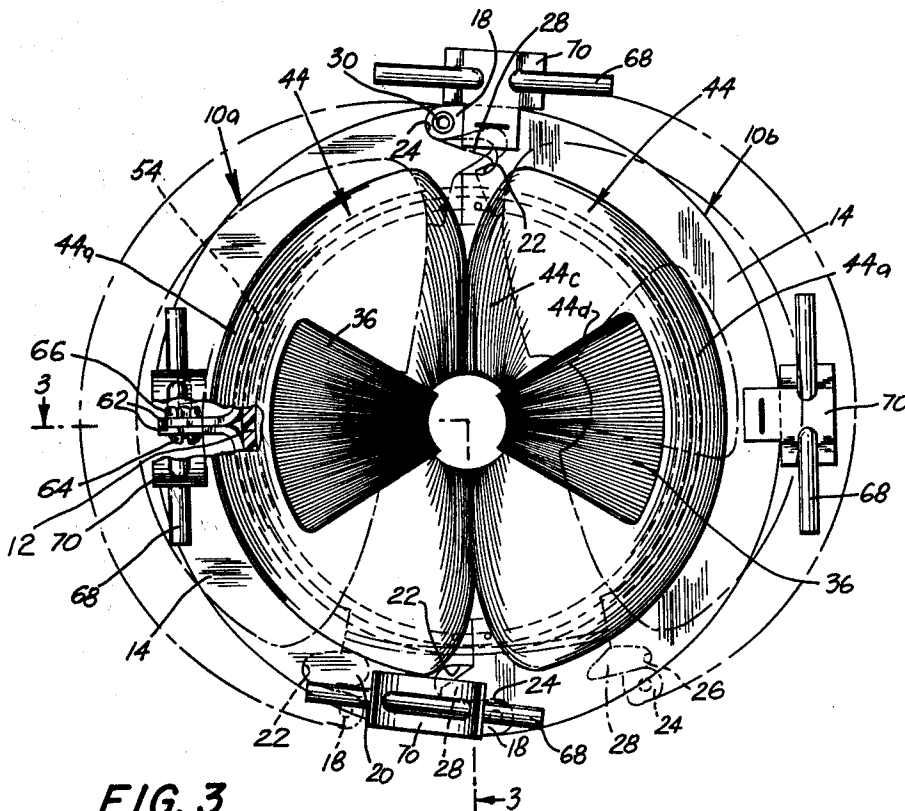


FIG. 3

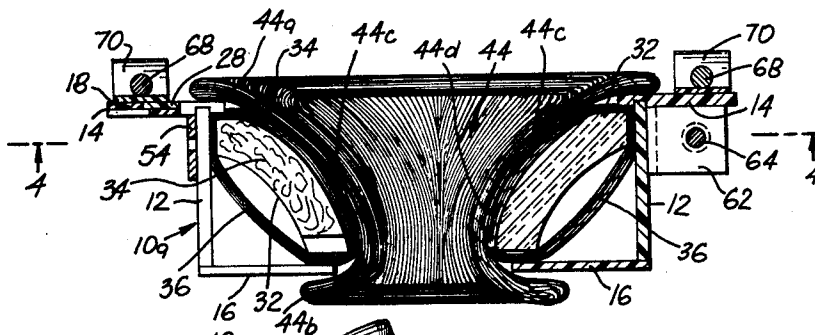
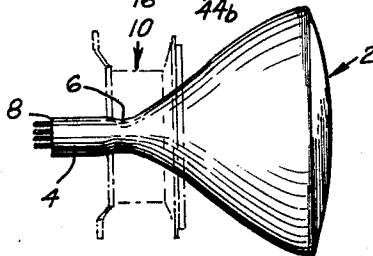


FIG. 1



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FIG. 4

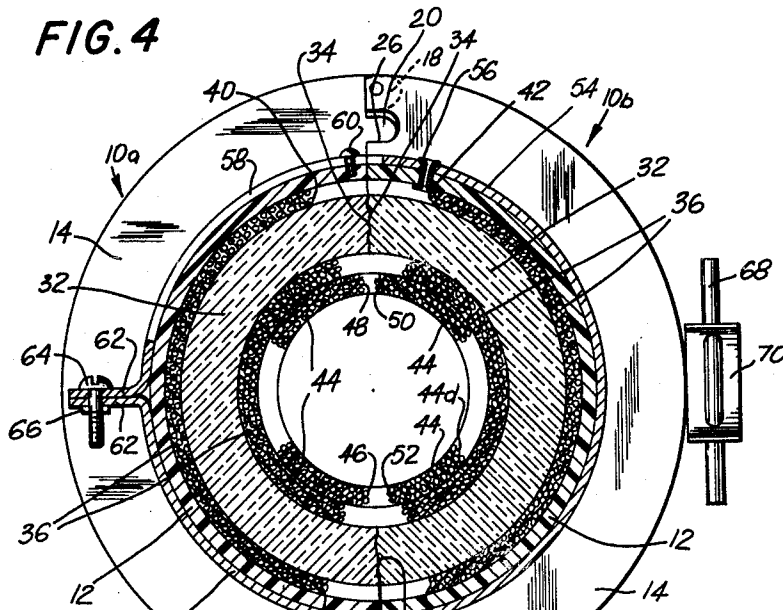
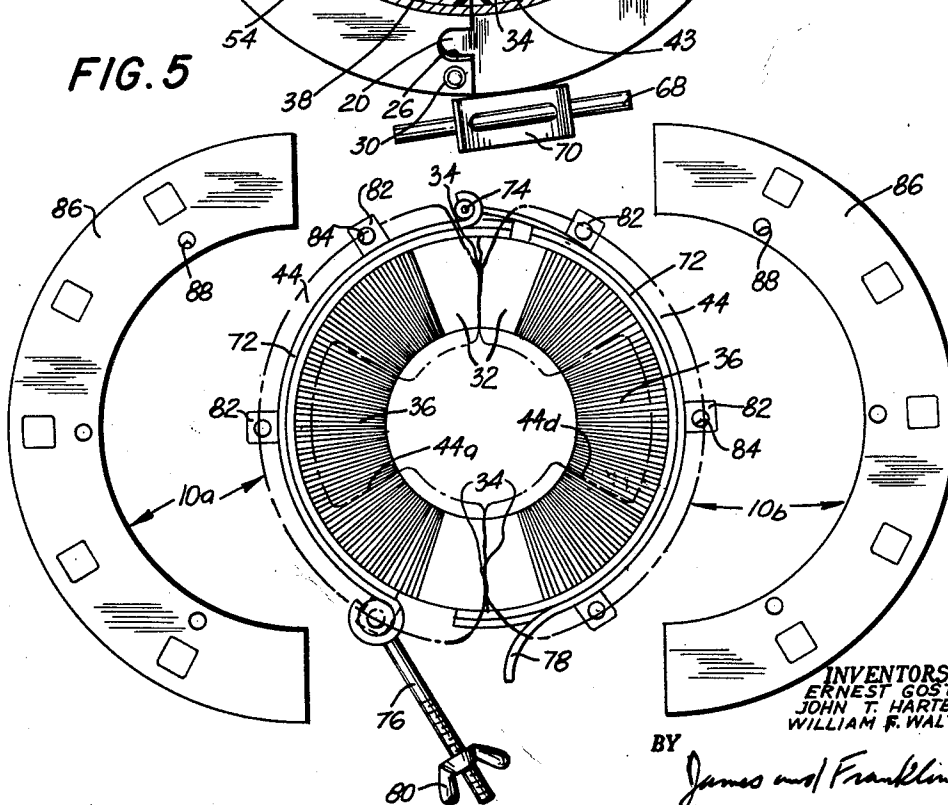


FIG. 5



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FIG. 6

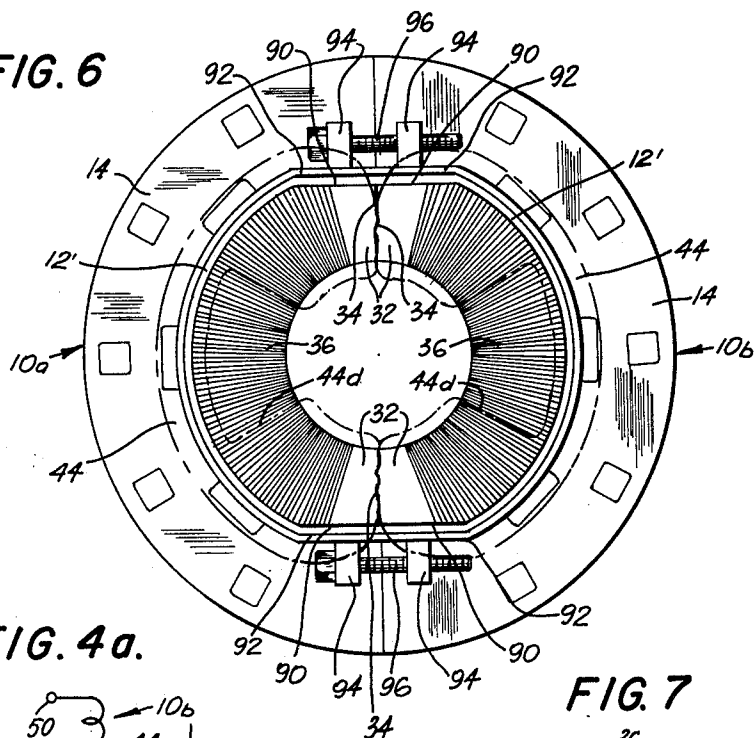


FIG. 4a.

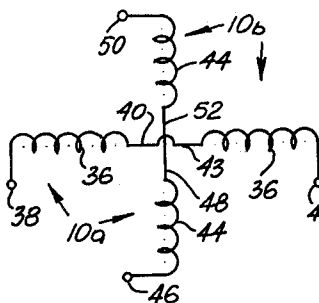


FIG. 7

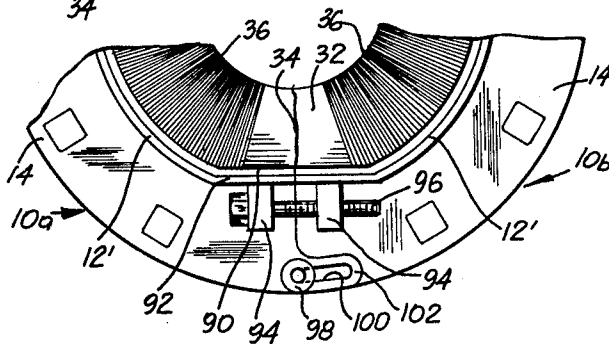
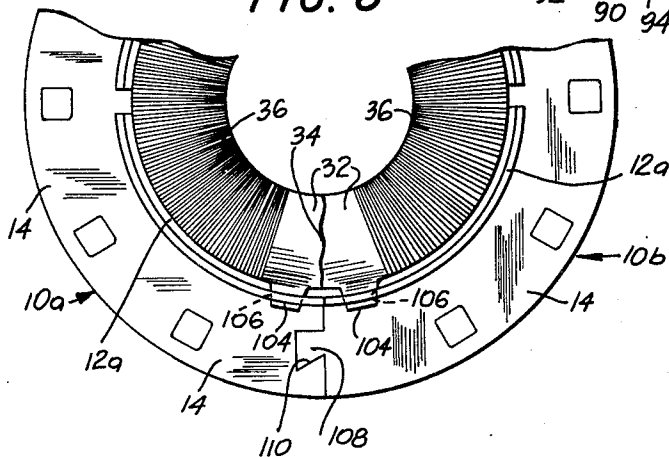


FIG. 8



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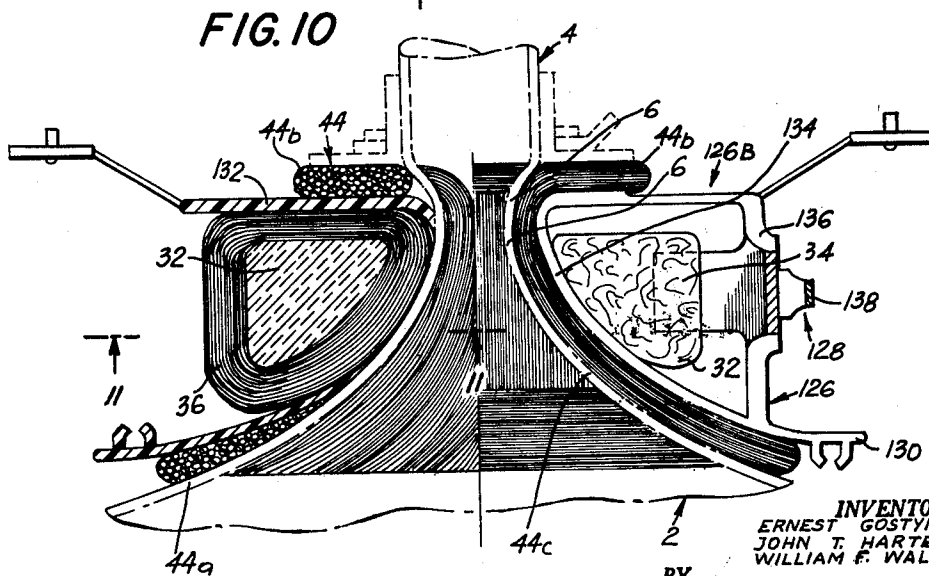
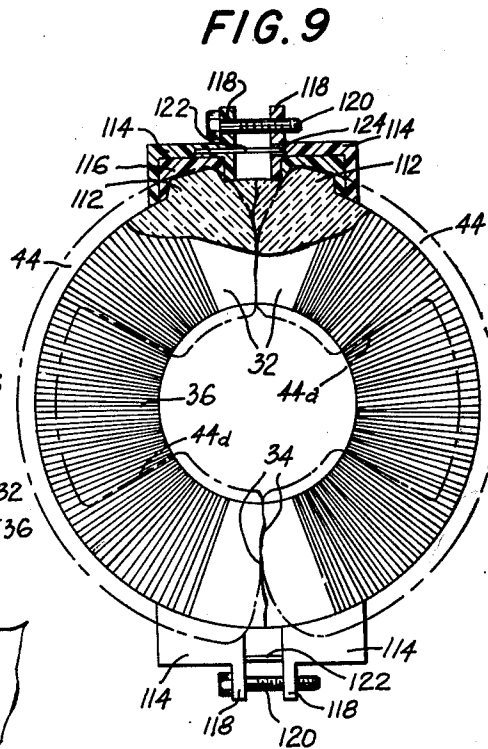
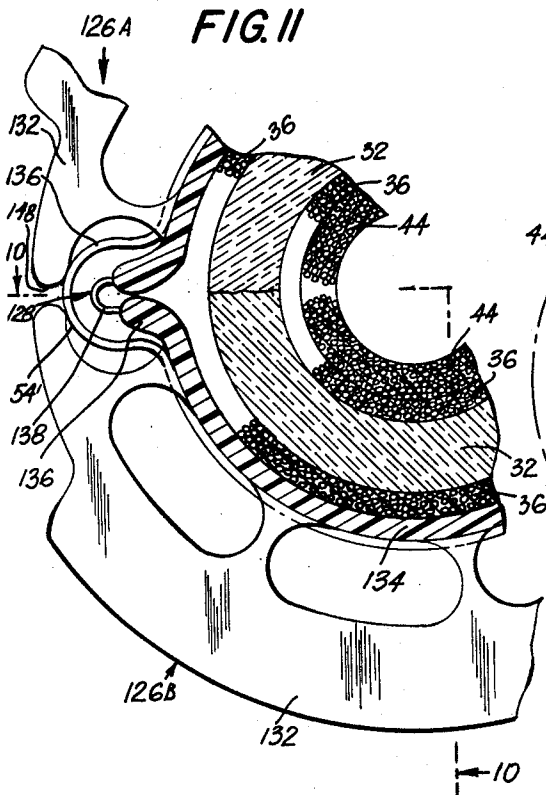
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TELEVISION TUBE DEFLECTION COIL ASSEMBLY WITH SEPARABLE YOKE SECTIONS

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8 Claims. (Cl. 317—200)

The present invention relates to the construction of a deflection coil assembly adapted to be used in conjunction with television tubes and the like, and is particularly adapted for use with those tubes the neck of which is constricted in the region where the deflection coils are to be placed.

Deflection coil assemblies which carry horizontal and vertical deflection windings are conventionally used with television picture tubes and the like. Such assemblies comprise a supporting structure on which the windings are fixed, the assembly being positionable on the neck of the tube in a proper location. In the past these assemblies, when put together, defined a single unit all of the parts of which were permanently fixed relative to one another. This type of deflection coil assembly was suitable for use with a television tube having a neck of substantially uniform diameter, the deflection coil assembly being slidable along that neck from the socket end thereof to its proper position. Such coil assemblies could be slid off from the picture tubes with which they were associated whenever that was desired.

With television picture tubes of more modern design the area along the neck of the tube where the deflection windings are to be located is constricted—has a smaller diameter than the socket end of the tube. As a result deflection coil assemblies of the type heretofore known, the parts of which could not be shifted relative to one another once the assembly was put together, could no longer be used effectively.

It is possible, of course, to design a deflection coil assembly of conventional type which will fit the constricted area of the necks of said television tubes of modern design, but it is difficult in such an assembly to ensure that the windings are accurately located relative to one another. Such accurate location of the deflection windings, so that the vertical and horizontal windings are in electrical quadrature, is essential. As even more significant drawback to the use of conventional deflection coil assemblies in connection with constricted-neck television tubes is that such assemblies can be put together only on the tube itself, and when once put together the assembly can be removed only with great difficulty and replaced only by means of an assembly operation such as can only properly be performed in the factory and which would present well nigh insuperable difficulties to a mere repairman.

It is the prime object of the present invention to produce a deflection coil assembly adapted to be used in conjunction with constricted-neck television tubes and the like, the parts of which can be permanently put together at the factory, which can be secured to the television tube in the field, and which can be demounted from the tube at any time and then reassembled with that tube or any other tube without impairing the original magnetic field configuration.

In accordance with the present invention the deflection coil assembly is formed in two parts. The individual elements which make up each part of the assembly are preferably permanently connected to one another. The two assembly parts are movable toward and away from one another, and means are provided for fixing the rela-

tive positions of the two parts when they are assembled in operative position close to one another and around the neck of the tube. With the two assembly parts separated, the assembly may readily be mounted on or demounted from the tube neck. When the assembly is properly located along the neck the parts thereof may be moved toward one another so as to closely encompass the constricted area of the neck, and means are provided for holding the parts in place, thus clamping the assembly on the neck of the tube.

The deflection coil assembly, as is conventional, contains two sets of windings, one for controlling horizontal deflection and the other for controlling vertical deflection. Each set of windings sets up a magnetic field which is at right angles to the field set up by the other winding. In the conventional type of deflection coil assembly the windings themselves are arranged at right angles to one another. With this type of winding arrangement it is difficult, if not impossible, to produce a yoke assembly the parts of which can be separated and accurately connected together at will without disturbing the configuration and alignment of the magnetic fields produced by the windings. In accordance with the present invention, however, the horizontal and vertical windings are mechanically positioned one above the other, substantially in mechanical alignment. The two windings are of different types, one producing a magnetic field in alignment with its mechanical position and the other producing a magnetic field substantially at right angles to its mechanical position. Hence, although the magnetic fields are still at right angles to one another, as is required, the windings overlie one another. As a result the assembly is formed of two substantially similar parts, each part carrying a section of each winding, the line of separation between the assembly parts being defined between the winding sections. In this way the windings do not interfere with the separability of the assembly sections nor the security of the relative positions of the various elements which make up the assembly.

More specifically, in the form here specifically disclosed the horizontal windings are formed of two sections of conventional "saddle" form which extend partially around and inside supporting structure including a magnetizable core, while the vertical windings are formed of two sections each of which is toroidal in nature, is received directly beneath the corresponding horizontal winding section but insulated therefrom, and is preferably wound about the magnetizable core. The winding sections are symmetrically arranged with spaces between the sections on one assembly part and the sections on the other assembly part, the lines of separation between the two assembly parts being located within those spaces.

Means are provided for ensuring that when the two assembly parts are assembled together into operative condition they will be very accurately located relative to one another. These means preferably comprise co-acting elements on the supporting parts. It is preferred that the magnetizable core be initially formed to define a continuous ring, which ring is then split along lines corresponding to the line of separation of the assembly parts. When, as is preferred, the magnetizable core is formed of ferrite material, such a split will inherently take place along an irregular line, the mating irregularities of the two core parts thus formed serving at least in part to index the assembly parts when they are assembled together.

Various embodiments of the instant invention are here disclosed, showing various ways for forming the support portions of the assembly parts, achieving proper alignment between those support portions when the assembly parts are moved into engagement, ensuring accurate location of the individual elements which make up each

assembly part, mounting the yoke parts for relative movement, and completing electrical connection between the winding sections. In the main, features of one embodiment can be combined with details of other embodiments, the particular combination of features in each illustrated embodiment being largely arbitrary and exemplary.

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 coil assembly as defined in the appended claims and as described in this specification, taken together with the accompanying drawings, in which:

FIG. 1 is a semi-schematic side elevational view showing the type of deflection coil assembly which is here involved in operative position on a television picture tube having a constricted neck;

FIG. 2 is a front elevational view of a first embodiment of the present invention, the assembly parts being shown in broken lines in their positions remote from one another and in solid lines in their operative position close to and engaging one another;

FIG. 3 is a cross sectional view taken along the line 3—3 of FIG. 2;

FIG. 4 is a cross sectional view taken along the line 4—4 of FIG. 3;

FIG. 4A is a circuit diagram showing the manner in which the winding sections of the embodiment of FIGS. 2-4 are adapted to be connected, and is equally applicable to the winding sections of all of the other illustrated embodiments;

FIG. 5 is a rear elevational exploded view of a second embodiment of the present invention;

FIG. 6 is a view similar to FIG. 5 but of a third embodiment;

FIG. 7 is a fragmentary view similar to FIG. 6 but showing a modified construction;

FIG. 8 is a view similar to FIG. 7 but illustrating a fourth embodiment;

FIG. 9 is a view similar to FIG. 6, partially broken away and cross sectioned, illustrating a fifth embodiment;

FIG. 10 is a view similar to FIG. 3, taken along the line 10—10 of FIG. 11, and illustrating a sixth embodiment; and

FIG. 11 is a cross sectional view taken along the line 11—11 of FIG. 10.

FIG. 1 shows a television picture tube generally designated 2 having a neck 4 with a constricted portion 6 of smaller diameter than the socket end 8 thereof, the deflection coil assembly, generally designated 10 and shown in broken lines, being shown in operative position mounted on and closely around the constricted portion 6 of the tube neck 4. It will be clear from an examination of FIG. 1 that a deflection coil assembly 10 of relatively fixed parts which could be slid over the socket end 8 of the tube could not snugly engage the tube at the restricted portion 6 thereof, and that a deflection coil assembly formed of relatively fixed parts which did snugly fit around the constricted neck portion 6 of the tube could not readily be disassembled therefrom. The deflection coil assembly of the present invention is, as has been pointed out, specially designed to solve the problems inherent in the use of picture tubes with such constricted necks 6.

Turning now to FIGS. 2-4A, which disclose a first embodiment of the present invention, the deflection coil assembly there shown comprises two separable assembly parts 10a and 10b. The construction of each of the parts 10a and 10b is essentially similar, and similar reference numerals will be applied thereto. Each part comprises a support structure comprising a liner in the form of a half ring 12 having an outwardly extending flange 14, both being formed of suitable insulative material of appropriate structural strength, to which, if de-

sired, an inwardly extending insulating flange 16 may also be secured. Terminals (not shown) may be carried by the flange 16 or 14, or even by the ring 12, if desired. The lower (as viewed in FIG. 2) end of the flange 14 of the assembly part 10a is provided with a pair of tongues 18 and 20 each having a thickness approximately half that of the flange 14, the tongue 18 being located higher than the tongue 20, and a recess 22 is located on the upper surface of the flange 14 in line with the tongue 20. The lower end of the flange 14 of the part 10b is provided with an upper recess 24 and a lower recess 26, each of approximately half the thickness of the flange 14, into which the tongues 18 and 20 respectively are adapted to be received when the parts are moved together, and it is also provided with a tongue 28 adapted to be received within the recess 22 in the flange 14 of the part 10a. A similar arrangement of tongues and recesses is provided at the other ends of the flanges 14 of the parts 10a and 10b, thereby to ensure proper alignment of the parts 10a and 10b when they are assembled together. As here specifically disclosed a rivet or eyelet 30 passes through the tongue 18 at the upper end of the flange 14 on the part 10b and the upper end of the flange 14 on the part 10a, thereby pivotally connecting the two parts to one another so that they may move between their operative contracted positions shown in solid lines in FIG. 2 and their separated positions shown in dot-dash lines in that figure. The tongues 28 are so shaped, in conjunction with the recesses 22, as to permit this pivotal movement.

Each of the assembly parts 10a and 10b carries a magnetizable core part 32, attached to the ring 12 in any appropriate manner, as by being cemented thereto with a suitable insulating plastic material. Each of the core parts 32 is preferably semi-circular in arcuate extent, having end surfaces 34 adapted to engage with one another when the assembly parts 10a and 10b are moved together, thereby to define a substantially continuous circular magnetic core. It is preferred that the core parts 32 be composed of ferrite or similar material initially formed into a continuous ring which is then split or severed along diametrically opposed lines to define the surfaces 34 and produce the individual core parts 32. With material of the ferrite type any such split inherently results in irregularly mating surfaces 34 at the lines of severance, as is indicated more or less diagrammatically particularly in FIG. 4. The mating irregularities in the surfaces 34 serve to accurately index and align the core parts 32, and with them the other parts of the assembly sections 10a and 10b, when those sections are moved together.

The vertical deflection winding is formed in two sections 36, one section being carried by each of the assembly parts 10a and 10b. Each section 36 is in the form of a toroidal winding wound around the corresponding core part 32. As shown in FIGS. 4 and 4A, the section 36 on the core part 10a starts at the end 38 and finishes at end 40, while the winding section 36 on the assembly parts 10b starts at the end 42 and finishes at end 43. The horizontal deflection winding is formed of two sections 44, one carried by each of the assembly parts 10a and 10b, the winding sections 44 being of the conventional "saddle" type. Each is located on the radially inside surface of its corresponding assembly section 10a or 10b, with end windings 44a extending partially over the flange 14, end windings 44b extending partially over the flange 16, and side windings 44c defining a "window" 44d therebetween. The horizontal winding sections 44 are positioned directly over the vertical windings 36, suitable insulation being interposed therebetween, portions of the vertical winding sections 36 being visible through the windows 44d. The winding sections 44 are held in position in any suitable manner, as through the use of appropriate insulating plastic cement.

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The horizontal deflection winding section 44 on the assembly part 10a starts at point 46 and finishes at point 48. The horizontal deflection winding section 44 on assembly part 10b starts at point 50 and finishes at point 52. Electrical connections to and between the winding sections 44 and to and between the winding sections 36 are accomplished as indicated in the circuit diagram of FIG. 4A, appropriate flexible leads extending between the winding sections as appropriate and with sufficient slack to permit separation of the assembly parts 10a and 10b. With electrical connections as described the horizontal winding sections 44 will create a deflecting magnetic field extending substantially from left to right as viewed in FIG. 4, while the vertical deflection winding sections 36 will produce a deflecting magnetic field extending substantially up and down as viewed in FIG. 4, the two fields therefore being in proper spatial relationship.

The diametrically opposed lines of separation between the assembly parts 10a and 10b pass through the space between the upper and lower ends of the winding sections 36, 44 on each of the assembly parts, so that the winding sections themselves do not interfere with separability of the assembly parts 10a and 10b.

Since the winding sections 36 and 44 are fixedly secured to their respective assembly parts 10a and 10b, and since those assembly parts, when moved together, will be accurately positioned relative to one another by virtue of the interaction of the various tongues and recesses in the flanges 14 and the mating of the irregular surfaces 34 on the core parts 32, the actual deflection magnetic fields produced by the assembly when the parts 10a and 10b are properly operatively associated will be accurately fixed and maintained.

In order to secure the assembly parts 10a and 10b in their operative position in which they closely engage one another, a clamping strap 54 may be employed, that strap being shown as fixed to the assembly part 10b by means of eyelet 56 (see FIG. 4) and extending around the ring portions 12 of both assembly parts 10a and 10b. The strap 54 is provided with an elongated slot 58 within which a headed stud 60 fixed to the assembly part 10a is slidably received, thereby limiting the degree to which the assembly parts 10a and 10b may be pivoted outwardly relative to one another. This is desirable in order to prevent interruption of the continuity of the electrical circuit between the winding sections 36, 36 and between the winding sections 44, 44. The strap ends extend outwardly at 62 and are adapted to be secured to one another, thereby to clamp the assembly parts 10a and 10b together in operative engaging position, by means of a screw 64 and nut 66 passing through the strap ends 62.

If desired, trimming magnets 68 may be mounted on the assembly parts 10a and 10b in any desired location, as by means of flexible holders 70.

The manner of use of the deflection coil assembly of FIGS. 2-4 will in the main be apparent from the above description. Each assembly part 10a and 10b is individually put together at the factory with its various elements fixed in position and with the two assembly parts pivotally connected by the eyelet 30. When the assembly is to be put in place on the constricted neck portion 6 of a television picture tube 2 the assembly parts 10a and 10b are pivoted outwardly to the positions shown in broken lines in FIG. 2, the headed stud 60 sliding through the slot 58 in the strap 54, the ends 62 of that strap 54 at that time being unsecured to one another. The separation between the sections 10a and 10b will be sufficient to that their lower ends can be passed over the constricted neck portion 6 of the picture tube. The parts 10a and 10b are then pivoted into engagement to the position shown in FIG. 4 and in solid lines in FIG. 2, this serving to clamp the assembly around the constricted neck portion 6 of the tube, the ends 62

of the clamping strap 54 then being secured to one another by the screw 64 and nut 66. The coil assembly may readily be removed from the picture tube whenever that must be done merely by removing the screw 64 and pivoting the assembly parts 10a and 10b to their separated position. The assembly may then be replaced upon the same or another picture tube whenever desired, and with assurance that when the assembly parts 10a and 10b have been again properly engaged the magnetic deflecting fields produced by the windings 36 and 44 will have the desired relationship.

FIG. 5 illustrates an alternative embodiment in which the core parts 34 and winding sections 36 and 44 are substantially identical with those shown in the previously described embodiment, the winding sections 44 being shown in dot-dash lines and the winding sections 36 being shown wound about the core parts 32. In this embodiment each of the core parts 32, with the winding sections 36 applied thereto, is individually cemented to and insulated from an arcuate strip section 72, the two strip sections 72 being pivotally connected at hinge 74, one of the strip sections 72 having a pivotally mounted securing screw 76 at the free end thereof, the other strip section 72 having a pair of separated tongues 78 between which the screw 76 is adapted to be received, a wing nut 80 being mounted on the screw 76 and adapted to engage with the tongues 78 to secure the assembly parts 10a and 10b in position clamped to one another. Each of the strip sections 72 may be provided with a plurality of laterally extending tabs 82 provided with rivet holes 84, and insulating terminal board sections 86 may be mounted on the tabs 82 and secured thereto by rivets passing through the holes 84 and the rivet holes 88 formed in the terminal boards 86.

FIG. 6 illustrates another embodiment of the present invention in which the assembly parts 10a and 10b are not pivotally connected together, but instead are adapted to move laterally relative to one another. As in the previously described embodiments, each of the assembly parts 10a and 10b comprise a core part 32 which carries a helical winding section 36 and a saddle-type winding section 44, the latter being shown in dot-dash lines in FIG. 6. In this embodiment, in order to ensure proper alignment between the core parts 32 and the insulating support parts 12', the upper and lower ends of the core parts 32 are flattened, as at 90, and the corresponding ends of the supporting ring-like elements 12' are correspondingly flattened, at 92. Each of the ring-like support parts 12', at their areas 92, are provided with lugs 94 which are adapted to oppose one another, the lugs 94 on the assembly part 10b being internally threaded in order to cooperate with the threads on screws 96, the lugs 94 on the assembly part 10a having apertures which register with the internally threaded apertures in the opposed lugs 94 and through which the shanks of the screws 96 can pass. When the screws 96 are threaded outwardly with respect to the lugs 94 on the assembly part 10b, the assembly parts 10a and 10b can be separated sufficiently so that the entire assembly can be slid over the neck 4 of the picture tube from the socket end thereof. When the screws 96 are threaded into the lugs 94 on the assembly parts 10b, the assembly parts 10a and 10b are moved into engagement with one another so as to snugly receive the constricted neck portion 6 of the picture tube 2 between them.

FIG. 7 discloses a modification of the embodiment of FIG. 6 (the winding sections 44 being omitted for clarity of illustration) in which the assembly part 10b is provided with a headed stud 98 the shank of which passes through an elongated slot 100 in a tongue 102 extending from the assembly part 10a, thereby to limit the degree to which the parts 10a and 10b may be separated from one another.

FIG. 8 (in which the winding sections 44 are also omitted) discloses another embodiment in which means

are provided for indexing or fixing the relative position of the core parts 32 relative to the ring-like structure 12a. Here each of the core parts 32, arcuately outside the area where the winding section 36 is wound therearound, is provided with a radially outwardly extending lug 104 adapted to snugly fit within an opening 106 formed in the ring-like structure 12a. In addition, FIG. 8 discloses another way in which indexing of the two assembly parts 10a and 10b may be achieved, the flange portion 14 of the assembly part 10b being provided with an approximately keystone-shaped tab 108 adapted to be received in a matingly shaped recess 110 in the flange 14 of the assembly part 10a. In this embodiment the two parts are adapted to be connected to one another in finally assembled position by means of a movement which is in part directed along the axis of the neck 4 of the picture tube 2. A clamping strip such as the strip 54 disclosed in the embodiment of FIGS. 2-4 may be optionally employed with the embodiment of FIG. 8.

FIG. 9 discloses an embodiment which eliminates the ring-like structure 12. There each of the core parts 32 are provided, arcuately beyond the winding sections 36, with radially outwardly extending lugs 112. Insulating brackets 114 are adapted to fit over the lugs 112 and to be permanently secured thereto, as by means of the potting material 116, the brackets 114 having opposed projecting parts 118 with which threaded screw 120 cooperates as in the manner disclosed in the embodiment of FIGS. 6 and 7. The opposed brackets 114 may be provided with cooperating male and female terminal members 122 and 124 adapted to engage with one another when the assembly parts 10a and 10b are moved into operative engagement, the terminals 122 and 124 being appropriately connected to the ends of the winding sections 36 and 44 in order to provide appropriate electrical connection between them, thus eliminating the necessity for flexible leads between the winding sections carried by the assembly parts 10a and 10b respectively and permitting those assembly parts to be separated to any desired degree without deleterious effects.

The embodiment of FIGS. 10 and 11 features the use of a one-piece insulating liner or support element generally designated 126 which carries the core parts 32 and associated winding sections 36 and 44, and which itself serves to insulate the winding sections 36 and 44 on each assembly part from one another. The support element 126 is formed in two sections 126a and 126b integrally pivotally connected to one another at point 128. Each section comprises a front flange 130 and a rear flange 132 connected by a body section 134, the core part 32 with the winding section 36 helically wound therearound being received radially outside the body section 134, the saddle type horizontal winding section 44 being received radially inside the body section 134, that section 134 therefore being interposed between the winding sections 36 and 44 and insulating them from one another. Where the saddle type winding 44 is itself provided with a central window, such as the window 44d in FIG. 4, the section 134 may be similarly provided with a window in order to reduce weight and cost of material. The two sections 126a and 126b may be provided, at the point where the assembly parts 10a and 10b are to be pivotally connected, with a vertically extending section 136, the sections 136 of each of the parts 126a and 126b being integrally connected by means of a flexible section 138, the tips of the flange parts 132 at that area being separated by the gap 148 in order to permit, and preferably to limit, pivotal movement of the parts 126a and 126b. The assembly parts 10a and 10b may be clamped in operative assembled position by means of a clamp strip 54' similar to that employed in the embodiments of FIGS. 2-4.

In all of the embodiments here disclosed the deflection yoke assembly is formed in two parts 10a and 10b. The various elements which make up each assembly part are fixedly related to one another, preferably in a permanent

manner. The assembly parts 10a and 10b themselves are movable toward and away from one another so as to permit assembly with and disassembly from the neck of the television picture tube or the like, and particularly such a neck which has a constricted portion where the deflection coils are to be positioned. The construction is such that when the assembly parts are moved into operative position the winding sections carried thereby are reliably and accurately located so that the magnetic deflecting fields produced are relatively simple and susceptible of large scale production at minimal cost.

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

We claim:

1. In a deflection coil assembly comprising a support which is adapted to be received around the neck of a television tube and which carries two individual deflection windings arranged substantially in electrical quadrature, the improvement which comprises said support being formed in two parts relatively movable toward and away from one another, each part comprising a frame member, a magnetizable core part operatively connected to said frame member, said frame member including a flange, said flanges of said two frame members being pivotally connected to one another to define an axis about which said support parts can pivot in moving toward and away from one another, one of said windings having two toroidal-type sections, each wound about a different core part, the other of said windings comprising two saddle-type sections, each carried by a different support part radially inside the corresponding core part, and clamping means surrounding the frame members of both said support parts for retaining them in assembled condition.

2. In a deflection coil assembly comprising a support which is adapted to be received around the neck of a television tube and which carries two individual deflection windings arranged substantially in electrical quadrature, the improvement which comprises said support being formed in two parts, one of said windings comprising two electrically connected saddle-type sections and the other of said windings comprising two electrically connected toroidal-type sections, each of said support parts carrying one section of each of said windings, each of said support parts together with its associated winding being movable as a unit away from the other support part together with its associated windings, and means for securing said yoke support parts in assembled position, each of said support parts comprising a magnetizable core part engageable with the core part on the other support part when said support parts are assembled to define a substantially continuous magnetizable core, the engaging surfaces of said core parts having a mating irregular shape.

3. In a deflection coil assembly comprising a support which is adapted to be received around the neck of a television tube and which carries two individual deflection windings arranged substantially in electrical quadrature, the improvement which comprises said support being formed in two parts, one of said windings comprising two electrically connected toroidal-type sections, each of said support parts carrying one section of each of said windings, each of said support parts together with its associated windings being movable as a unit away from the other support part together with its associated windings, means for securing said yoke support parts in assembled position, and stop means operatively connected to said support parts for limiting the degree to which they may be separated.

4. In a deflection coil assembly comprising a support which is adapted to be received around the neck of a television tube and which carries two individual deflection windings arranged substantially in electrical quadrature, the improvement which comprises said support

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being formed in two parts, one of said windings comprising two electrically connected saddle-type sections and the other of said windings comprising two electrically connected toroidal-type sections, each of said support parts carrying one section of each of said windings, each of said support parts together with its associated windings being movable as a unit away from the other support part together with its associated windings, and means for securing said yoke support parts in assembled position, said support parts comprising a frame member and a magnetizable core part, and cooperating means operatively connected to said frame member and core part for fixing their relative positions.

5. In a deflection coil assembly comprising a support which is adapted to be received around the neck of a television tube and which carries two individual deflection windings arranged substantially in electrical quadrature, the improvement which comprises said support being formed in two parts, one of said windings comprising two electrically connected saddle-type sections and the other of said windings comprising two electrically connected toroidal-type sections, each of said support parts carrying one section of each of said windings, each of said support parts together with its associated windings being movable as a unit away from the other support part together with its associated windings, and means for securing said yoke support parts in assembled position, said support parts being pivotally connected to one another at a given point and separable from one another at another point, and stop means operatively connected to said support parts for limiting the degree to which they may be separated.

6. In a deflection coil assembly comprising a support which is adapted to be received around the neck of a television tube and which carries two individual deflection windings arranged substantially in electrical quadrature, the improvement which comprises said support

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being formed in two parts, one of said windings comprising two electrically connected saddle-type sections and the other of said windings comprising two electrically connected toroidal-type sections, each of said support parts carrying one section of each of said windings, each of said support parts together with its associated windings being movable as a unit away from the other support part together with its associated windings, and means for securing said yoke support parts in assembled position, each of said support parts including terminals electrically connected to the winding sections on said support part and engageable with corresponding terminals on the other support part when said support parts are assembled together, thereby to achieve electrical connection between each pair of winding sections.

7. In the deflection coil assembly of claim 1, stop means operatively connected to said support parts for limiting the degree to which they may be separated.

8. The deflection coil assembly of claim 2, in which said core parts are formed from an initially continuous ferrite core split along the lines of parting of said core parts to define said engaging surface.

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