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[54] **INTEGRAL SUPPORT AND MAGENTIC SHIELDING MEANS FOR CATHODE RAY TUBES**
5 Claims, 2 Drawing Figs.

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[50] **Field of Search** 178/7.8, 7.82; 315/8; 307/101

[56] **References Cited**

UNITED STATES PATENTS

2,565,327	8/1951	Shaw	178/7.8
2,851,679	9/1958	Wayne	178/7.8
3,240,985	3/1966	Ammerman et al.	178/7.82X
3,404,228	10/1968	McLeod, Jr. et al.	178/7.8

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ABSTRACT: An integral supporting structure and magnetic shielding means for cathode-ray tubes includes a metal member and a wire member means in surrounding relationship to a cathode-ray tube. The metal member includes peripheral spaced bracket members each having a foot member extending forward thereof and a fastener member extending inwardly and rearwardly thereof. The wire member means engages the fastener member of each bracket member and is in pressure contacting relationship with the cathode ray tube.

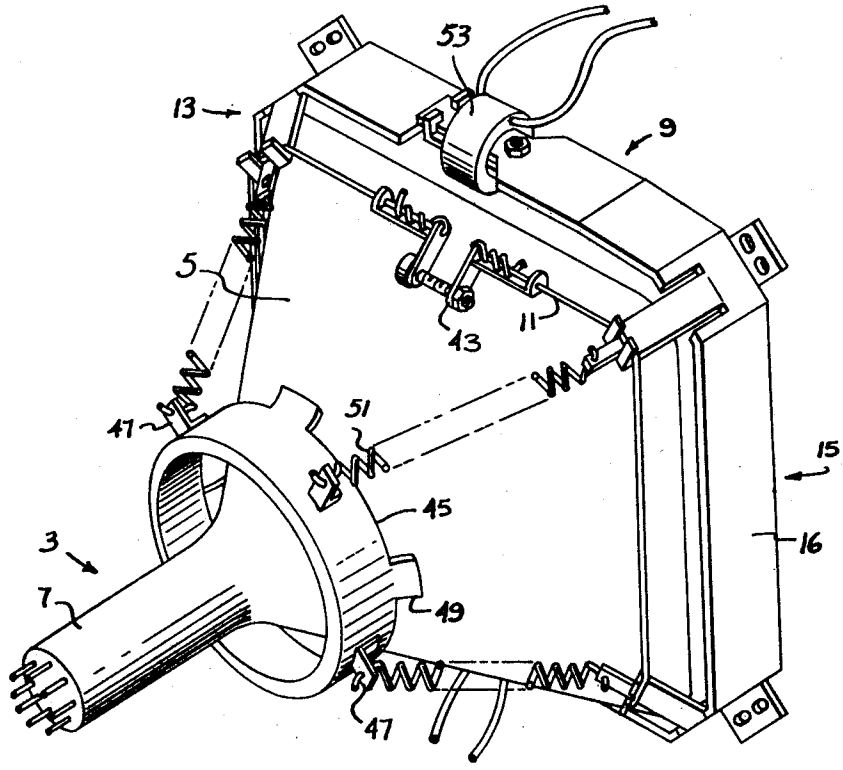
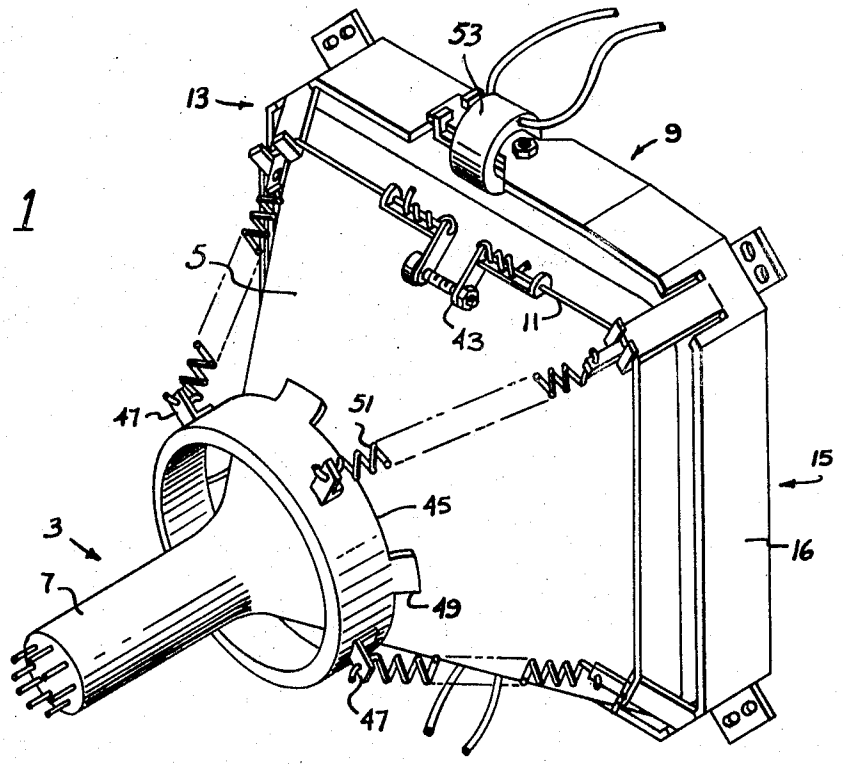


Fig. 1



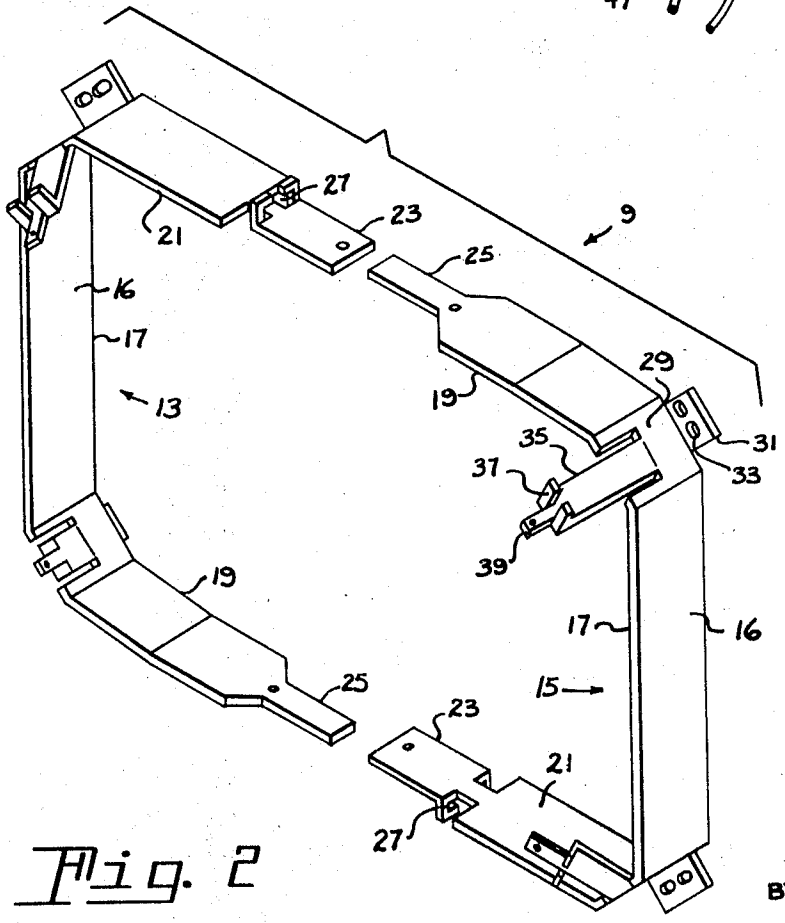


Fig. 2

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INTEGRAL SUPPORT AND MAGENTIC SHIELDING MEANS FOR CATHODE RAY TUBES

BACKGROUND OF THE INVENTION

In cathode ray tube systems and particularly in television receivers, numerous stray voltages, currents and magnetic fields, including the earth's magnetic field, tend to adversely affect the performance of the system. Thus, it has become a common procedure to include a metal shield in surrounding relationship to the cathode ray tube and to affix a plurality of so-called degaussing coils to the metal shield to effect neutralization of the undesired magnetic fields.

Also, cathode ray tubes are generally rather cumbersome objects, not particularly adapted to ease of support and mounting within a cabinet. Moreover, the necessity for inclusion of the above-mentioned metal shielding and degaussing apparatus further complicates the problems of cathode ray tube support within a cabinet.

OBJECTS AND SUMMARY OF THE INVENTION

An object of the present invention is to provide an enhanced integral supporting structure and magnetic shielding means for a cathode ray tube. A further object of the invention is to provide improved support for a magnetic shielding means and a cathode ray tube. A still further object of the invention is to provide a simple and inexpensive integral support and magnetic shielding means for a cathode ray tube.

These and other objects, advantages and capabilities are achieved in one aspect of the invention by a metal member having integral spaced bracket members each with foot and fastener members and in surrounding relationship to a cathode ray tube and a wire member means in engagement with the fastener members and in pressure contacting relationship with the cathode ray tube.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates an integral supporting structure and magnetic shielding means in cooperative engagement with a cathode ray tube; and

FIG. 2 illustrates a preferred embodiment of an integral cathode ray tube supporting structure and magnetic shielding means.

DESCRIPTION OF THE PREFERRED EMBODIMENT

For a better understanding of the present invention, together with other and further objects, advantages and capabilities thereof, reference is made to the following disclosure and appended claims in connection with the accompanying drawings.

Referring to FIGS. 1 and 2 of the drawings, a cathode ray tube 3 includes the usual screen portion (not shown), funnel portion 5, and neck portion 7 extending along a longitudinal axis. In surrounding relationship to the screen portion (not shown) of the cathode ray tube 3 is an integral supporting structure and magnetic shielding means including a metal member 9 and a wire member means 11.

As can best be seen in FIG. 2, the metal member 9 includes a pair of substantially identical U-shaped metal portions 13 and 15 each having a bottom section 17 and upstanding sections 19 and 21 respectively affixed to opposite ends of the extending substantially normal to the bottom section 17. Each of the upstanding sections 19 and 21 terminates in a tongue portion 23 and 25 with one of the tongue portions 23 formed to provide a slot 27 suitable for cooperative engagement with the other tongue portion 25. Thus, the cooperative engagement capabilities of the tongue portions 23 and 25 facilitate engagement of the U-shaped metal portions 13 and 15, whereby the addition of a single fastening means to each jointure of the tongue portions 23 and 25 serves to effect engagement therebetween, thereby reducing assembly time and expense.

Also, each of the substantially U-shaped metal portions 13 and 15 includes a planar surface 16 extending substantially

parallel to the longitudinal axis of the cathode ray tube 3 and a plurality of spaced integral bracket members 29. Each of the bracket members 29 includes a foot member 31 extending forward of the metal portions 13 and 15 and in a plane substantially normal to the longitudinal axis of the cathode ray tube 3. These foot members 31 include an attachment means 33 and are formed for affixture to a cabinet such that relatively rigid support of the metal member 9 is effected.

Extending rearwardly and inwardly from each of the bracket members 29 of the U-shaped metal portions 13 and 15, is a fastener member 35. Preferably, each of the fastener members 35 includes a pair of hook-shaped lug members 37 and an apertured lug member 39. Also the apertured lug member 39 separates the hook-shaped lug members 37 to effect uniformity of force distribution as will become evident hereinafter.

Referring to FIG. 1, a wire member means 11 is engaged by the hook-shaped lug members 37 of all of the bracket members 29. Also, the wire member means 11 includes a circumferential adjustment means 43 whereby pressure contact between the wire member means 11 and the funnel portion 5 of the cathode ray tube 3 is effected and maintained.

Preferably, not necessarily, a yoke ring member 45 is disposed in surrounding relationship to the funnel portion 5 of the cathode ray tube 3 in the vicinity of the neck portion 7. This yoke ring member 45 includes a plurality of circumferentially spaced apertured lugs 47 and a plurality of protuberances 49 formed to contact the funnel portion 5 of the cathode ray tube 3.

Extending intermediate each one of the spaced apertured lugs 47 of the yoke ring member 45 and the apertured lug member 39 of each of the integral bracket members 29 is a spring means 51. The spring means 51 operates in cooperation with the yoke ring member 45 and the bracket members 29 to enhance support of the cathode ray tube 3. Also, the metal member 9 affixed to a cabinet by the foot members 31 and in cooperation with the wire member means 11 affixed to the integral bracket members 29 and in pressure contact with the cathode ray tube 3 serves to support and magnetically shield the cathode ray tube 3.

Additionally, it may be noted that the tongue portions 23 and 25 of each of the U-shaped metal portions 13 and 15 are formed not only for cooperative engagement to provide a surrounding metal member 9 but also to readily receive and rigidly support degaussing coils 53. As is well known, these degaussing coils 53 are operable in a manner such that stray magnetic fields including the earth's magnetic field are substantially neutralized whereby operation of the cathode ray tube 3 is achieved without deleterious effect due to external magnetic forces.

Thus, there has been provided a unique integral support structure and magnetic shielding means for a cathode ray tube. The apparatus is simple and inexpensive of materials, tooling, and assembly time. Not only does the structure include substantially identical half-sections necessitating but a single tool but also includes novel and unique engagement of the magnetic shield and a rigid support for accessory degaussing apparatus.

Also, integral spaced brackets not only facilitate rigid support of the cathode ray tube and shielding means but also enhance structural reliability and dependability. Moreover, the structure is consistent and uniform with a minimum of required assembly time and training.

While there has been shown and described what is at present considered the preferred embodiment of the invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention as defined by the appended claims.

We claim:

1. In a cathode ray tube system having a cathode ray tube with screen, funnel, and neck portions extending along a longitudinal axis, an integral supporting structure and magnetic shielding means for the cathode ray tube comprising:

a metal member in substantially surrounding relationship to the screen portion of said cathode ray tube, said metal member including two substantially identical U-shaped metal portions each having a bottom section and an upstanding section affixed to opposite ends of the bottom section with the upstanding sections terminating in portions formed for engagement therebetween and cooperative engagement of the U-shpaed metal portions and a plurality of spaced integral bracket members each having a foot member extending forward of said metal member in the direction of said screen portion and in a plane substantially normal to said longitudinal axis and a fastener member extending inwardly and rearwardly of said metal member toward said neck portion of said cathode ray tube; and

wire member means engaged by said fastener member of each of said bracket members and in surrounding and pressure-contacting relationship with said funnel portion of said cathode ray tube whereby said cathode ray tube is supported within a cabinet by said wire member means and magnetically shielded by said metal member.

2. The integral supporting structure and magnetic shielding means of claim **1** wherein the terminating portions of said upstanding portions are in the form of tongue portions with one

tongue portion of said upstanding portions of each of said U-shaped metal portion is formed to provide a slot for receiving a tongue portion of the other U-shaped metal portion whereby the U-shaped metal portions are cooperatively engaged.

3. The integral supporting structure and magnetic shielding means of claim **2** wherein said tongue portions are formed to receive a degaussing coil.

4. The integral supporting structure and magnetic shielding means of claim **1** wherein said metal member has a substantially planar surface extending substantially parallel to said longitudinal axis of said cathode ray tube, said fastener member of each of said bracket members includes at least one hook-shaped lug portion formed for engagement with said wire member means, and said wire member means includes adjustment means for varying the circumference thereof to effect said pressure contacting relationship with said funnel portion of said cathode ray tube.

5. The integral supporting structure and magnetic shielding means of claim **1** including a yoke ring member surrounding said funnel portion of said cathode ray tube in the vicinity of said neck portion and spring means affixed to and extending intermediate said yoke ring member and said fastener member of each of said bracket members of said metal member.