Oct. 15, 1929. W. F. FRISCH 1,731,894

CASING FOR TRANSFORMERS

Filed March 31, 1928

Fig. 1.

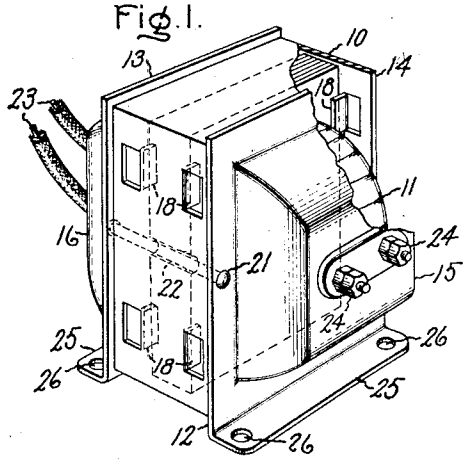


Fig 2.

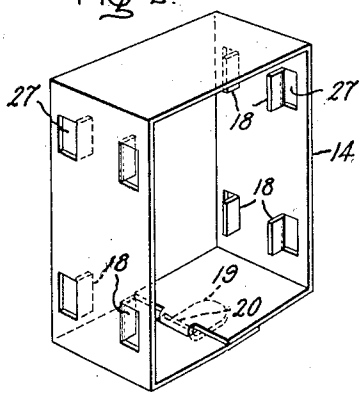
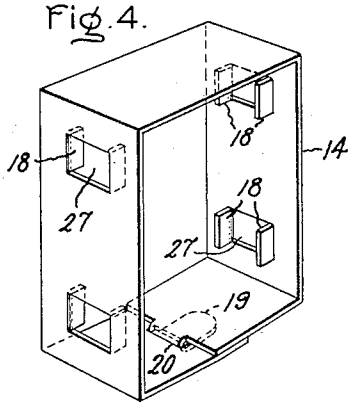


Fig. 4.



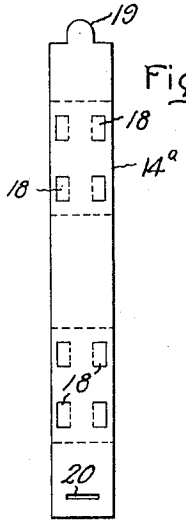


Fig. 3.

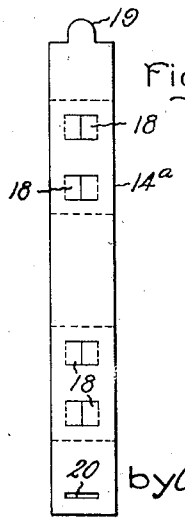


Fig 5.

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UNITED STATES PATENT OFFICE

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CASING FOR TRANSFORMERS

Application filed March 31, 1928. Serial No. 266,398.

My invention relates to casings for transformers and has for its general object an improved construction therefor which results in a very compact and economical arrangement of parts.

More specificially, by invention relates to casings for transformers of small size, such for example, as those of the bell ringing type; one of the specific objects of my invention then being to produce an improved casing which is simplified in construction and assembly and which is durable and attractive in appearance.

Another object of my invention is the provision of means integrally formed with the stamped sheet metal casing for engaging the core of the transformer to hold it in place.

Still another object of my invention is to provide an improved casing having openings for ventilating and cooling the transformer core and windings.

For a more complete understanding of the nature and objects of my invention reference should be had to the following detailed description when taken in connection with the accompanying drawing in which Fig. 1 is a perspective view of a transformer provided with a casing which embodies my invention, a portion of the casing being cut away to show the core and windings; Fig. 2 is a perspective view of the body member of the casing; Fig. 3 is a plan view on a reduced scale of a strip of stamped sheet metal from which the body member shown in Fig. 2 is formed; Fig. 4 is a perspective view of a modified form of the body member; and Fig. 5 is a plan view on a reduced scale of a strip of stamped sheet metal used to form the modified body member shown in Fig. 4.

Referring now to the drawing, 10 denotes the core of a transformer having windings 11. The casing for the transformer includes two end members or walls 12 and 13 and a body member 14. The end members 12 and 13 have belled-out portions 15 and 16 respectively to accommodate the portions of the windings 11 which extend from the faces of the core 10. The core 10 is held against longitudinal movement by the ears 18. The body member 14 is formed from a strip 14^a of sheet metal stamped as shown in Figs. 3 and 5. The ears are spaced from the adjacent end walls or members 15 and 16 and position the transformer in spaced relation to these end walls. The strip 14^a has small ears 18 formed by cutting away three sides and bending them at right angles to the plane of the strip. The spacing of the ears 18 is determined by the thickness of the core 10 and this spacing is such that the ears 18 are in gripping relation to the core 10. The strip 14^a has the tongue 19 formed at one end and the slot 20 formed at the other end. When the strip 14^a is placed around the core 10 of the transformer, the tongue 19 is passed through the slot 20 and bent back upon itself to secure its ends together as shown in Figs. 2 and 4. In assembling my casing on the transformer, the strip 14^a is wrapped around the core 10 in such a manner that the ears 18 engage with the sides of the core 10 to hold it firmly against longitudinal movement and by means of the tongue 19 and the slot 20 the body member 14 is firmly held in close engagement with the outside of the core 10. The end members 15 and 16 are now placed over the open ends of the body member 14 and these sections of the casing are held in place by bolts or rivets 21 which pass through slots 22 formed in the core 10.

The end members 15 and 16 are provided with openings for the leads 23 of one winding and with binding posts 24 to which the leads from the other winding are attached. The end members 15 and 16 are also provided with mounting flanges 25 having holes 26 to enable the transformer to be secured to a suitable support.

The bending of the ears 18 forms ventilating openings 27 in the body member 14 of the casing, these openings admitting air to the transformer to cool it. When the ears are formed as indicated in Figs. 1, 2 and 3, the outside air will have direct access to both sides of the core and to the windings. When the ears are formed as indicated in Figs. 4 and 5, the outside air will have direct access to portions of the edges of the core directly opposite the openings and the openings may be made as large as desired so long as they are

not too large to weaken the body member 14 of the casing too much. As shown in Fig. 1, the transformer may be supported by the rivets 21 so that the edges of the core are spaced from the body member 14 of the casing. This permits the air to reach the entire outer surface of the transformer, whether the ears 18 and openings 27 are formed as shown in Figs. 1, 2 and 3 or as shown in Figs. 4 and 5. The strip 14^a may be of any desired width to provide proper ventilating space within the casing.

It will be obvious that various changes in the details, materials, and arrangements of parts, herein described and illustrated for the purpose of explaining the nature of the invention, may be made by those skilled in the art within the principle and scope of the invention as expressed in the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. The combination with a transformer, of a casing enclosing the transformer, said casing having integral inwardly bent ears leaving ventilating openings in the casing, each of said ears extending inwardly from one of the casing walls and in spaced relation to an adjacent wall, and said ears engaging and positioning the transformer within the casing and in spaced relation to said adjacent casing wall.

2. The combination with a transformer, of a casing enclosing the transformer, said casing being formed in sections and having ventilating openings, and means for securing said casing sections together, said securing means supporting said transformer in spaced relation to the casing.

3. The combination with a transformer, of a casing enclosing the transformer, said casing being formed in sections, one of said sections having ventilating openings, and means for securing said casing sections together, said securing means supporting said transformer in spaced relation to said casing section having the ventilating openings.

4. The combination with a transformer, of a casing enclosing the transformer, said casing being formed in sections, one of said casing sections having integral inwardly bent ears leaving ventilating openings in the casing, and means for securing said casing sections together, said ears and securing means supporting and positioning said transformer within the casing.

5. The combination with a transformer, of a casing enclosing the transformer, said casing being formed in sections, one of said casing sections having integral inwardly bent ears leaving ventilating openings in the casing, and means for securing said casing sections together, said ears and securing means supporting and positioning said transformer within the casing and in spaced relation to said casing section having the ventilating openings.

In witness whereof, I have hereunto set my hand this 29 day of March, 1928.

WILLIAM F. FRISCH.