Dec. 5, 1939. E. W. DILLARD 2,182,660

TRANSFORMER SUPPORT

Filed Jan. 24, 1939

Fig. 1.

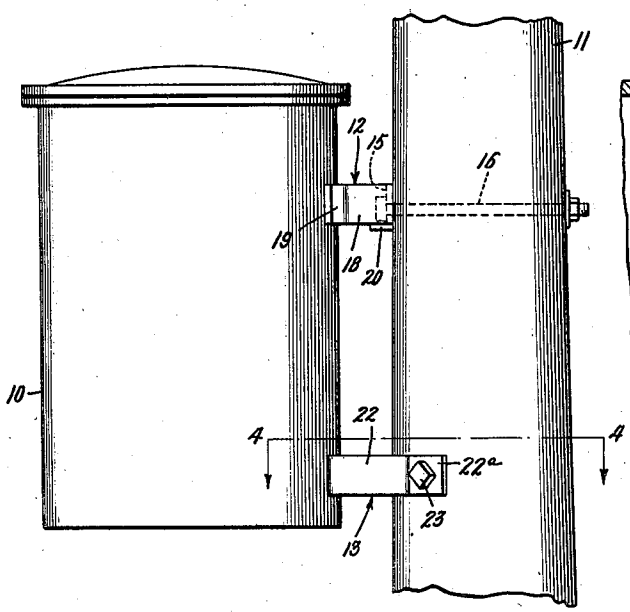


Fig. 2.

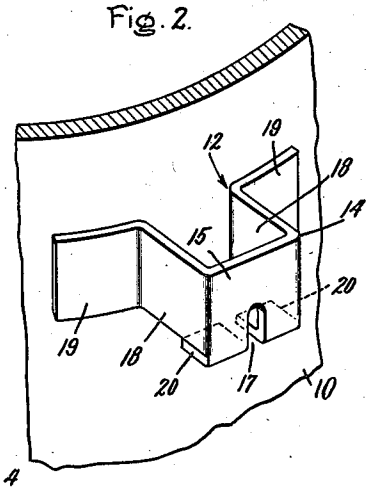


Fig. 4.

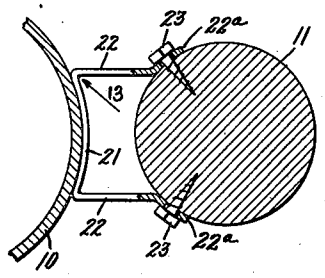


Fig. 3.

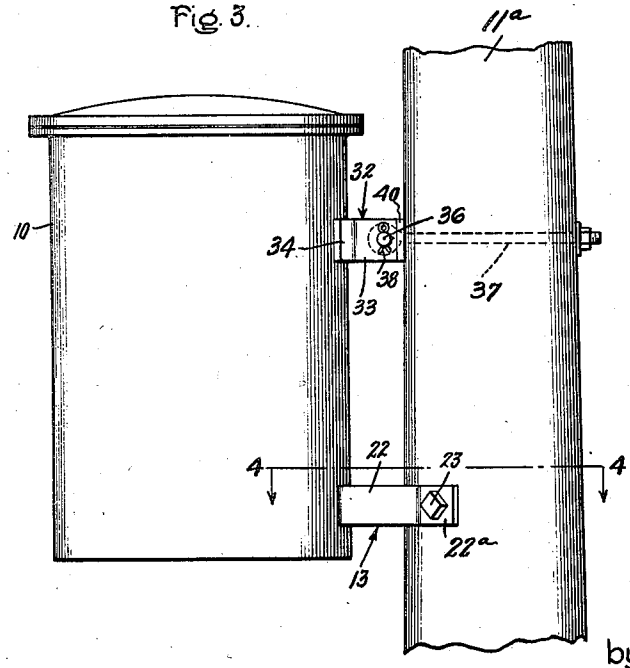
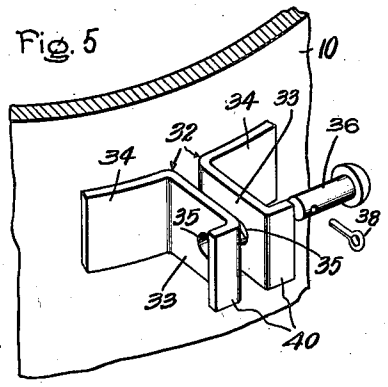


Fig. 5



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Patented Dec. 5, 1939

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UNITED STATES PATENT OFFICE

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TRANSFORMER SUPPORT

Edward W. Dillard, Wellesley, Mass.

Application January 24, 1939, Serial No. 252,615

4 Claims. (Cl. 248—221)

My invention relates to hangers or other devices for supporting electrical transformers in elevated positions on poles.

Poles which support transformers are not infrequently struck by automobiles or trucks which are out of control. Such a blow may cause the entire pole to vibrate or to move suddenly and violently, and to such an extent that a transformer supported thereon may break loose and fall to the ground.

The general object of my present invention is to provide a simple and economical but mechanically strong and reliable support or hanger which will not only hold a transformer securely under normal conditions but which will also support the transformer under abnormal conditions, as when the pole or other structure on which the transformer is mounted is subjected to violent shock, with resultant vibration or other abrupt movement.

A severe blow near the bottom of a pole which supports a transformer may not only tend to jar the transformer loose horizontally but may also cause the transformer to jump upwardly. This sudden upward displacement of the transformer may free it from the pole and allow it to drop to the ground.

Another object of my invention is to provide a simple transformer support or hanger which will effectively prevent detachment of the transformer from the pole as a result of upward movement of the transformer when the pole is violently jarred.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

Preferred forms of the invention are shown in the drawing, in which

Fig. 1 is a side elevation of a transformer secured to a pole by a support or hanger constructed in accordance with my invention;

Fig. 2 is a perspective view of a portion of the hanger shown in Fig. 1;

Fig. 3 is a view similar to Fig. 1 but showing a modified construction;

Fig. 4 is a partial sectional plan view, taken substantially along the line 4—4 of Fig. 1 or Fig. 3; and

Fig. 5 is a perspective view of a portion of the hanger shown in Fig. 3.

The transformer 10 shown in Fig. 1 is secured on a pole 11 by a support or hanger formed in upper and lower parts 12 and 13.

The upper part 12 of the hanger preferably comprises a heavy sheet metal member 14 having a central portion 15 which is spaced from the transformer and which is secured to the pole 11 by a through-bolt 16, extending through the pole and through an open slot 17 in the lower edge of this central portion 15. The member 14 has two spaced sides 18 connecting the central portion 15 to outwardly extending flanges 19 which are welded or otherwise secured to the side of the casing of the transformer 10, preferably somewhat above the center of gravity of the transformer.

The offset lower edge portions 20 of the center portion 15 of the member 14 are bent toward the transformer 10 to form flanges which, when assembled with a bolt 16 on a pole 11, underlie the head of the bolt 16, so that the member 14 and the bolt 16 are locked together and cannot be vertically separated.

The through-bolt 16 and the upper member 14 thus form the main or upper support of the transformer 10, with the upper end of the slot 17 resting on the bolt 16 and largely supporting the weight of the transformer, and with the flanges 20 engaging under the head of the bolt 16 to prevent upward displacement of the transformer, even in the event that the bolt 16 should become somewhat loosened.

The lower part 13 (Fig. 4) of the hanger includes a center portion 21 which is welded or otherwise secured to the casing of the transformer 10, and two spaced arms 22 having out-turned ends 22a fitting against the surface of the pole 11 and secured thereto by lag screws 23. The spaced arms 22 and out-turned ends 22a provide means for securing the casing of the transformer 10 to the pole 11 at widely spaced lower points, so that swinging or sidewise displacement of the transformer with respect to the pole 11 is effectively prevented. Any such sidewise or angular displacement of the transformer would of course tend to weaken the main or upper support, with the possibility that the transformer might break away and fall to the ground.

It is obvious that this three-point suspension, shared between the upper and lower parts 12 and 13 of the hanger, attaches the transformer to the pole in a manner which is exceptionally secure under any conditions which may arise.

In another and sometimes preferred form of the invention, as shown in Fig. 3, the lower part 13 of the hanger is like that shown in Figs. 1 and 4 and the description of this part of the hanger need not be repeated.

The upper part 32 of the hanger shown in Fig. 3 includes two spaced side portions or brackets

33 having their ends nearest the transformer bent outwardly to form flanges 34 which are welded or otherwise secured to the casing of the transformer. The spaced side portions 33 are provided with openings 35 for a stud 36 which passes through the eye of an eye-bolt 37 extending through the pole 11a. The eye of the bolt 37 is located between the two side portions 33 of the hanger and is locked to said side portions by the stud 36. A cotter-pin or other securing device 38 may be used to retain the stud 36 in holding position.

The ends of the side portions 33 (Fig. 5) are formed with outwardly projecting flanges 40, which flanges are held tightly against the face of the pole 11a and prevent the side portions 33 from digging into and damaging the pole, which might start possible decay.

Each form of the invention thus provides a very simple and economical support or hanger, which does not require the use of cross-arms or auxiliary braces and which also avoids any necessity for cutting into the side of the pole to provide a flat surface to accommodate the hanger, with obvious weakening.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A transformer support comprising an upper supporting structure rigidly and permanently secured to the upper part of a transformer, a lower supporting member separate from the upper supporting structure, said lower member having a central portion rigidly and permanently secured to said transformer and having two horizontally spaced pole-engaging braces effective to prevent side sway of the transformer, and means to secure said upper structure and said spaced braces to a pole at three substantially spaced points only, which points are disposed in triangular relation, with no two in vertical alignment.

2. A transformer support including an eye-bolt to pass through a pole, an upper supporting structure secured to the transformer and comprising two spaced side portions provided with aligned transverse openings, a stud extending through said openings and through the eye of said eye-bolt and locking said parts together, and a lower supporting structure separate from the upper supporting structure and secured to the transformer and engaging and secured to said pole at two laterally spaced points.

3. A transformer hanger including an eye-bolt to pass through a pole, an upper supporting structure secured to the transformer and comprising two spaced side portions provided with aligned transverse openings, a stud extending through said openings and through the eye of said eye-bolt and locking said parts together, the outer ends of said spaced sides being angularly displaced to provide bearing surfaces engaging said pole, and a lower supporting structure separate from the upper supporting structure and secured to the transformer and engaging and secured to said pole at two laterally spaced points.

4. Means to secure a transformer to a pole including a bolt to pass through said pole, an upper supporting member having two spaced sides secured to said transformer and having an outwardly offset central portion, said central portion having a downwardly open slot to receive said bolt, and the lower edge of said central portion having integral in-turned flanges extending under the head of said bolt and preventing relative upward displacement of the transformer, and a lower supporting structure separate from the upper supporting member and secured to the transformer and engaging and secured to said pole at two laterally spaced points.

EDWARD W. DILLARD.