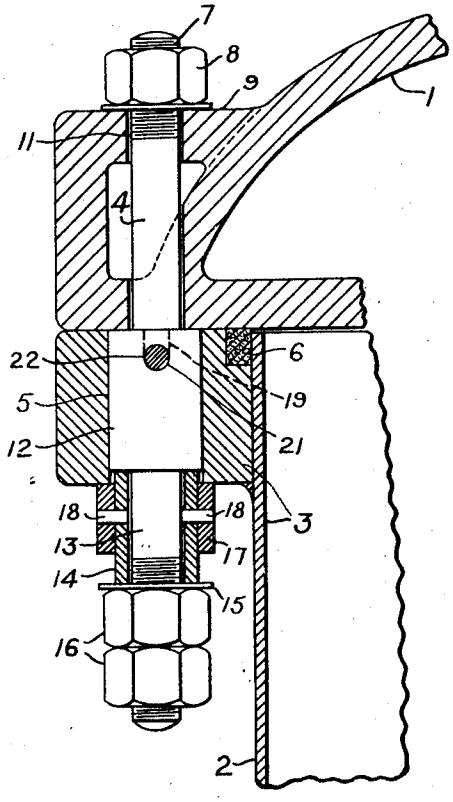
Sept. 24, 1929. H. POFELDT 1,729,085

TRANSFORMER CASING

Filed Dec. 3, 1926



WITNESSES:

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Patented Sept. 24, 1929

1,729,085

UNITED STATES PATENT OFFICE

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TRANSFORMER CASING

Application filed December 3, 1926, Serial No. 152,445, and in Germany February 18, 1926.

My invention relates to electrical protective apparatus and particularly to releasable connections between the casings and covers for such apparatus.

One object of my invention is to provide a frangible connection between the casings and covers for electrical apparatus, such as transformers, circuit interrupters and the like, that are subjected to explosive actions.

A further object of my invention is to provide a connecting bolt for securing the casing and cover of electrical apparatus that shall permit relative movement between the cover and the casing when a predetermined pressure is reached.

A further object of my invention is to provide a connecting bolt for securing the cover and the casing of an electrical apparatus that shall partially fail a sufficient amount to permit a relative movement between the cover and the casing when predetermined pressures are applied thereto.

In electrical apparatus, such as transformers, circuit interrupters and the like, explosions occasionally occur with sufficient violence to separate the cover from the casing or tank, unless provision is made for permitting a slight relative movement between the cover and the casing under such conditions.

I propose to secure such relative movement of the aforesaid members by providing a bolt that is normally held in engagement with a flange secured to the casing by a sleeve that, in turn, is secured to the bolt by a pin connection which is ruptured when the bolt is subjected to an excessive pressure, thereby permitting the cover to move relatively to the casing.

The single figure of the accompanying drawing is a view, partially in elevation and partially in section, of a portion of a casing and cover embodying my invention.

My invention comprises, in general, a cover member 1, a casing member 2 having a flange 3 secured thereto, and a bolt 4 that extends through an opening 5 in the flange 3 for securing the cover member 1 in position against a packing ring 6 in the flange 3.

The bolt 4 is provided, at its upper end, with a thread 7 that cooperates with a nut 8 which bears against a boss 9 on the upper face of the cover 1. The bolt 4 extends downwardly through an opening 11 in the boss 9 and is provided with an enlarged portion 12 that seats in the opening 5 in the flange 3. The diameter of the portion 12 is greater than the diameter of the opening 11 and, accordingly, the bolt 4 cannot be moved upwardly and through the cover 1 for more than a predetermined distance. The lower portion 13 of the bolt 4 has the same diameter as its upper portion.

A collar or sleeve 14 is secured around the portion 13 and extends into the opening 5 in the flange 3. The outer end of the sleeve 14 engages a washer 15 that is secured in place by lock-nuts 16. A second sleeve 17 is mounted exteriorally of the sleeve 14 and is secured thereto by pins 18 of relatively small diameter. The upper end of the sleeve 17 bears directly against the flange 3.

The flange 3 is provided with a notch 19, and the bolt 4 is provided with an opening 21 for the reception of a pin 22 that secures the bolt 4 in its proper angular relation to the casing 2.

Upon the occurrence of predetermined pressures within the casing 2, the cover 1 tends to move upwardly, thereby exerting increased pressure between the sleeve 17 and the flange 3. When the pressure becomes sufficiently great to shear the pins 18, the sleeves 14 and 17 are freed, and the bolt 4 and sleeve 14 are drawn upwardly until the washer 15 engages the lower end of the sleeve 17. Accordingly, the cover member 1 may be raised a sufficient distance from the casing 2 to permit the escape of gas from within the casing to the atmosphere.

While I have shown but a single bolt 4, it is to be understood that the cover and casing are connected by a plurality of such bolts arranged about the periphery of the flange 3. Also, it is to be understood that the members 14 and 17 need not necessarily be sleeves but may be in the form of blocks extending around less than the entire circumference of the bolt 4.

Accordingly, I have provided a frangible connection between the cover and casing of a

container that permits a relative movement of the cover member when excessive pressure occurs in the casing by breaking the frangible connection.

It is to be understood that, while I have shown and described a particular form of my invention, changes may be effected therein without departing from the spirit and scope thereof, as set forth in the appended claims.

I claim as my invention:

1. The combination with two members and a connecting bolt, of a sleeve surrounding the bolt and means for securing the sleeve in position on the bolt, the last mentioned means being broken to permit relative movement of the members when subjected to a predetermined pressure.

2. The combination with two members and a connecting bolt, of a sleeve surrounding the bolt and a pin for securing the sleeve in position on the bolt, said pin being broken to permit relative movement of the members when subjected to a predetermined pressure.

3. The combination with a casing, a cover member therefor, a clamping bolt, and a flange secured to the casing and having an opening through which the bolt extends, of a member mounted on the bolt and bearing against the lower face of the flange and a pin connection for holding the member in place, whereby, upon the occurrence of predetermined pressures within the casing, the pin connection is broken to permit relative movement between the cover and the casing.

4. The combination with a casing, a cover member therefor, a clamping bolt, and a flange secured to the casing and having an opening through which the bolt extends, of a member mounted on the bolt and bearing against the lower face of the flange and a frangible connection for holding the member in place, whereby, upon the occurrence of predetermined pressures within the casing, the connection is broken to permit relative movement between the cover and the casing.

In testimony whereof, I have hereunto subscribed my name this 10th day of November, 1926.

HERMANN POFELDT.