

R. V. BINGAY.
SAFETY VALVE OR BLOW-OFF.
APPLICATION FILED OCT. 17, 1919.

1,415,216.

Patented May 9, 1922.

Fig. 1.

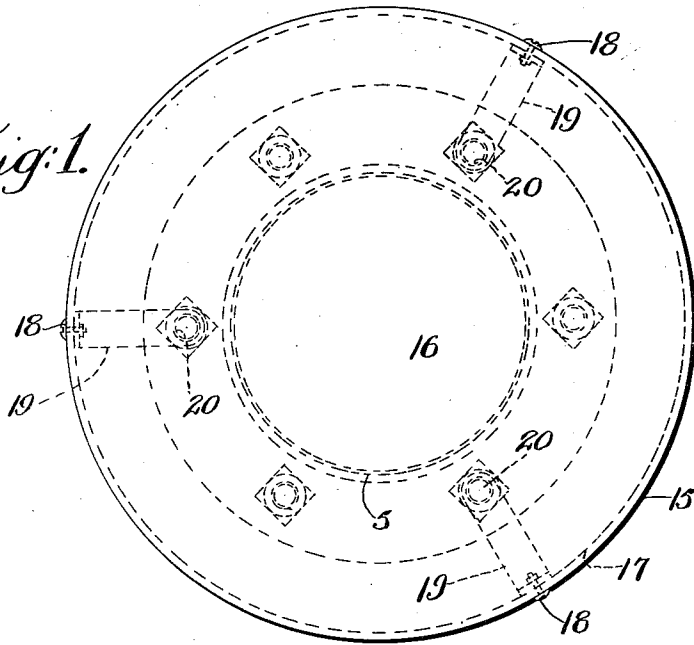
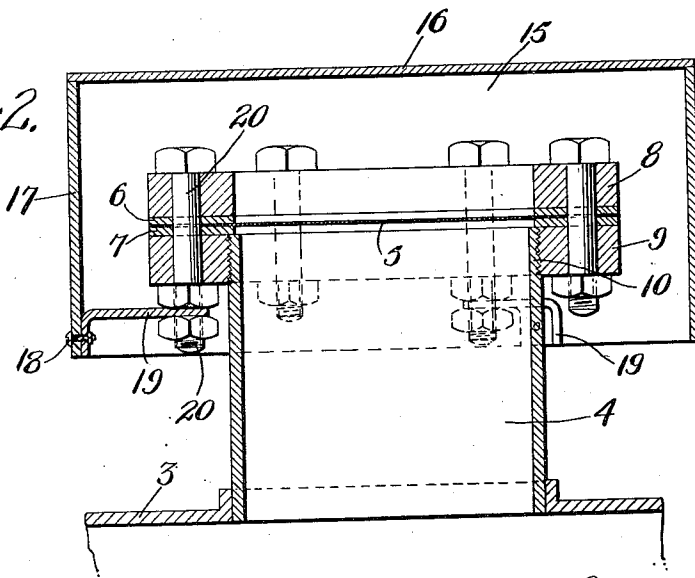


Fig. 2.



Inventor
Robert V. Bingay
By *his Attorneys*
Edwards, Sager & Power

UNITED STATES PATENT OFFICE.

ROBERT V. BINGAY, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO PITTSBURGH TRANSFORMER COMPANY, A CORPORATION OF PENNSYLVANIA.

SAFETY VALVE OR BLOW-OFF.

1,415,216.

Specification of Letters Patent.

Patented May 9, 1922.

Application filed October 17, 1919. Serial No. 331,323.

To all whom it may concern:

Be it known that I, ROBERT V. BINGAY, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Safety Valves or Blow-Offs, of which the following is a specification.

This invention relates to safety blow-offs and particularly to means for relieving the sudden excess pressure sometimes developed in electrical transformers, due for instance to short circuit within the transformer casing. The object of the invention is to provide a blow-off normally maintaining the transformer casing tightly sealed and readily opened by an excessive internal pressure and providing a large and direct outlet from the interior of the transformer so as to prevent dangerous overpressure.

A rise in pressure in a transformer sometimes occurs so suddenly and powerfully as to amount to an explosion, so that it is of utmost importance that a quickly releasing outlet of practically no resistance be instantaneously provided. Prior pressure relief means have been unsatisfactory, particularly in constraining the outflow to a curved or tortuous path and thus impeding it and causing dangerous excessive pressure within the transformer. With the device of this invention the release is immediate and the outflow straight and unimpeded.

In the accompanying drawings:

Fig. 1 is a plan view of one embodiment of my invention, and

Fig. 2 is a vertical sectional view of the same.

In the embodiment shown 3 is a top por-

tion of a transformer casing into which opens the cylinder 4 closed at the top by the diaphragm 5 which is preferably a very thin sheet of aluminum or similar material. The diaphragm 5 is held between gaskets 6 and 7 and clamping rings 8 and 9 bolted together as shown, the lower ring 9 being screwed at 10 onto the upper end of the cylinder 4.

To protect and house the parts a cap 15 is provided having top 16 and side flange 17 and fastened in place by pins or screws 18 and arms 19 carried by clamping bolts 20.

In case of accident causing an excessive rise in pressure in the transformer the thin diaphragm 5 is ruptured and the cap 15 is blown off, shearing the pins or screws 18 which are made very thin and weak and preferably of brass or other soft metal. By this blow off the excessive pressure within the casing is given immediate and direct access to the outside through a short straight passage. None of the parts can become fastened or rusted in place against easy release, the whole device is readily reassembled by replacing the broken diaphragm and screws, and under normal conditions an air-tight, weather proof seal is maintained and the diaphragm protected from accidental injury.

I claim:—

The combination with a container having an outlet, of a fragile diaphragm closing said outlet, and a protective cap member releasably held in place and adapted to automatically open and permit unobstructed outflow through said outlet upon rupture of said diaphragm.

ROBERT V. BINGAY.