106-76. OR 1,595,360 EX

Examiner

and of asbestos and cement with mineral oil only

Aug. 10, 1926. 1,595,360

E. O. SCHWEITZER ET AL

INSULATING MATERIAL AND PROCESS OF MAKING SAME

Original Filed Oct. 1, 1919

Fig. 3

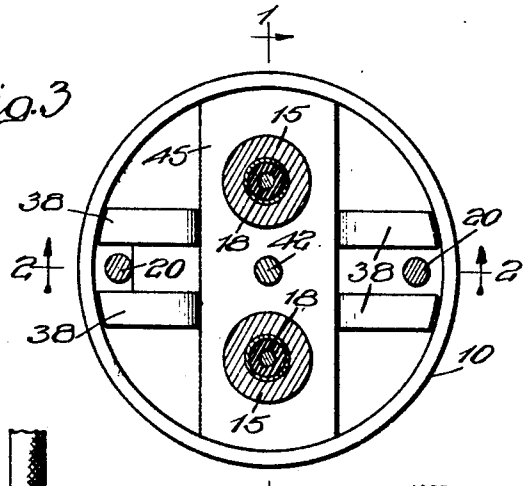


Fig. 2.

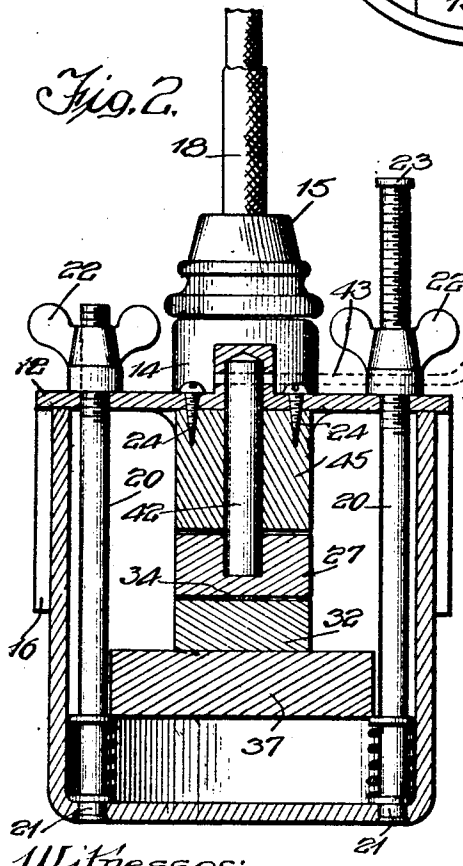
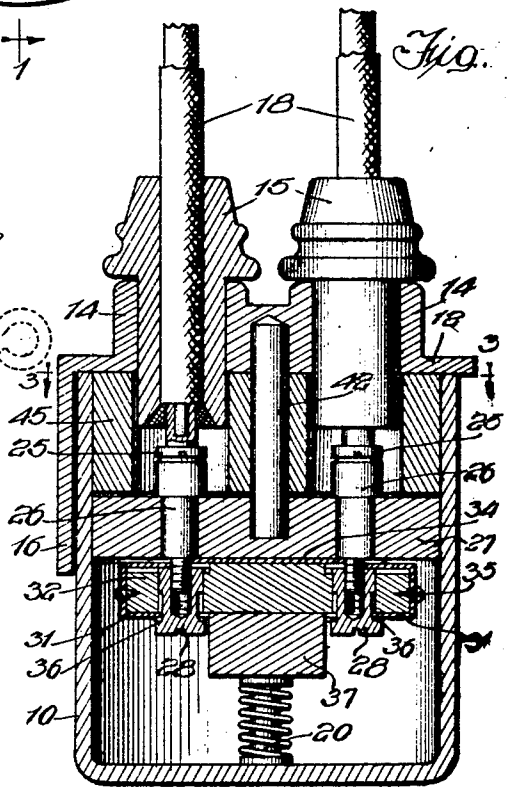


Fig.



Witnesses:
Harry R. Lubcke
W. F. Kilroy

Inventors:
Edmund O. Schweitzer
Alfred Herz
By Brown, Critchlow & Flynn
Attys.

Published by AsbestosClaims.Law
asbestosclaims.law/library/22776/1

Examiner

Patented Aug. 10, 1926. 1,595,360

UNITED STATES PATENT OFFICE.

EDMUND O. SCHWEITZER AND ALFRED HERZ, OF CHICAGO, ILLINOIS.

INSULATING MATERIAL AND PROCESS OF MAKING SAME.

Original application filed October 1, 1919, Serial No. 327,659. Now Patent No. 1,479,558. Divided and this application filed October 31, 1923. Serial No. 671,843.

This invention relates to an improved insulating material which though capable of a wide and varied range of other uses, is particularly adapted for use in compression blocks for electrical circuit breaking apparatus of the type disclosed in our copending application, Serial No. 327,659 filed October 1, 1919.

The present application is a division of our above referred to application.

Previously to our present invention we had employed limestone as the facing for the compression blocks of apparatus of this sort and found that it was satisfactory in insulating and heat resisting properties but that limestone blocks are often shattered by the violence of the explosion of the fuse. Asbestos was also tried but it was found to be not suitable. It seemed to have water of crystallization which impaired its insulating properties and the arc of the fuse tended to make the asbestos more or less of a conductor and seemed to fuse it.

We have made numerous experiments with many materials and have discovered that boiling of a composition board made of asbestos and cement, in transformer oil, provides an improved insulating material which is highly satisfactory for compression blocks and the like. It seems to us that boiling the composition board of asbestos and cement in oil removes some or all of the water of crystallization and removes some of the objectionable chemica's which are contained in the asbestos. We are not able to say definitely just what is actually accomplished but we are able to say that the material when so treated provides an improved insulating material which performs its function of extinguishing the arc very satisfactorily.

In order to acquaint those skilled in the art with the manner of constructing and employing our invention, we shall now describe in connection with the accompanying drawings the material and process of making same and its use in a cut-out of the type disclosed in the parent application, to enable one skilled in the art to make and use the same.

In the drawings:

Figure 1 is a vertical section on line 1—1 of Fig. 3.

Fig. 2 is a vertical section on line 2—2 of Figure 3; and

Fig. 3 is a horizontal section on line 3—3 of Figure 1.

The container for the cut-out shown comprises a tank 10 having a cover 12. Cover 12 has bosses 14 to receive insulators 15 which are cemented therein. At the rear side, cover 12 has a suitable supporting bracket 16 provided with suitable holes or lugs or other suitable means for attaching to a cross arm or any other suitable support. Insulators 15 are preferably cemented in bosses 14 and insulated conductors 18 are led through insulators 15 to the interior of tank 10, these conductors being preferably sealed in place by suitable cement or compound.

Tank 10 and cover 12 are clamped together by bolts or rods 20. The lower ends of bolts 20 are welded to or through the bottom of tank 10 at 21 and their upper ends are screw threaded and pass through cover 2, being engaged by wing nuts 22 for holding the tank and cover in position. One bolt 20 is made longer than the other and is provided with an enlargement 23 at its upper end so that the wing nut on that bolt cannot be removed from the end of the bolt. The threaded portion of the longer bolt permits tank 10 to be dropped far enough to clear the bottom of block 45 on the cover and the pin carried by said block and swung about the bolt to expose the interior of the tank without disconnecting it from the cover.

Block 45 is of insulating material and is secured to the bottom of cover 12 by screws 24. It has two holes which fit over the lower or inner ends of insulators 15. Insulated conductors have stationery contacts 25 mounted on their inner ends for engagement with contacts 26 of the upper fuse block 27. The threaded reduced ends of contacts 26 are engaged by nuts 28, the inner ends of which nuts 28 engage brass or copper straps 31 which pass around the ends of lower compression block 32 for the dual purpose of making good contact with a fusible link 34 connected between contacts 26 and interposed between compression blocks 27 and 32 and retaining nuts 28 against displacement. Straps 31 may be held in place by screws 35.

The compression blocks are not in this particular case, gripped by the heads of nuts 28 as a small clearance space illustrated

Published by AsbestosClaims.Law
asbestosclaims.law/library/22776/2

at 36 (Fig. 1) is left between the heads of the nuts and the adjacent ends of straps 31. The heads of nuts 28 limit the outward movement of block 32 so that only a predetermined movement of the block is possible when fuse 34 between it and block 27 blows.

Compression blocks 27 and 32 are held against fuse 34 by the mounting in which they are supported. This mounting consists of a U-shaped cradle comprising a bottom block or member 37 and vertical side pieces 38. Side pieces 38 form guides for compression blocks 27 and 32 and rods 20 pass up between sides 38 and form guides for the cradle. Springs 30 surround the lower ends of rods 20 and tend to raise the cradle and this tendency is employed to hold the compression blocks against the fuse and to hold contacts 26 against contacts 25 when the parts are in normal circuit closed position. A stem 42 and pin 43 provides for holding blocks 27 and 32 depressed against springs 30 until the casing and cover are secured together so that in case of a short circuit on the line a full arc extinguishing action of the liquid within the container will always be effective.

The present application is directed particularly to the construction of compression blocks 27 and 32 although block 45 and even the mounting cradle which is preferably of wood, may be formed of the same material and in the same manner if desired. In fact the material has a wide and varied range of other uses but in view of its particular suitability for blocks 27 and 32 we have described a particular device to show the relation of such blocks and are describing the insulating material and process of making same in connection therewith.

The compression blocks are formed of blocks or pieces of a composition board of asbestos and cement boiled in transformer oil until the oil has penetrated all parts of the block. The pieces which we employ in this particular connection are about one inch by two inches in cross section and boiling of same for half an hour in a transformer oil, or oil having similar properties, appears to accomplish thorough impregnation. The resulting product is a great improvement upon insulating materials employed for this class of service heretofore. Apparently the treatment of boiling in transformer oil removes some of the objectionable minerals which are contained in the asbestos and at the same time all of the moisture contained within the fibers of the asbestos is removed. The resulting blocks are highly resistant to the action of heat and do not crack under uneven heating, as some of the substances which have previously been employed. The untreated board is of a hygroscopic character, and sometimes contains a relatively large moisture content, but the treatment of boiling in the transformer oil drives off all moisture and removes completely the tendency to absorb moisture. Transformer oil, the properties of which are well known, is, as already pointed out, preferably employed but this may be varied. A light mineral oil having the properties of transformer oil is preferable however.

The supporting cradle is made preferably of wood, although it may be made of the insulating material described if so desired. Block 45 may be made of wood treated with transformer oil or of asbestos board boiled in transformer oil as already indicated.

We claim:

1. An insulating material consisting of a composition board of asbestos and cement treated with mineral oil only.

2. An insulating material consisting of asbestos board impregnated with transformer oil.

3. A compression block of the class described consisting of an asbestos and cement composition impregnated with transformer oil.

4. The method of treating a composition of asbestos and cement which consists in treating it with transformer oil.

5. The method of treating asbestos board to render the same suitable for compression fuse blocks, which consists in boiling the asbestos board in transformer oil until the same has had complete access to all parts of the asbestos.

In witness whereof, we hereunto subscribe our names this 29th day of October, 1923.

EDMUND O. SCHWEITZER.
ALFRED HERZ.

Published by AsbestosClaims.Law
asbestosclaims.law/library/22776/3