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METHOD OF MAKING METAL COVERED GASKETS

Original Filed March 2, 1935

Fig. 1.

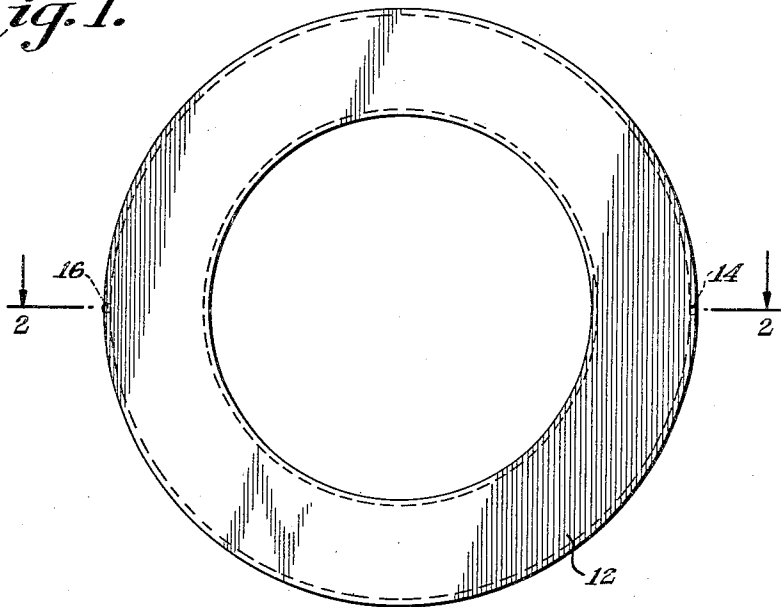
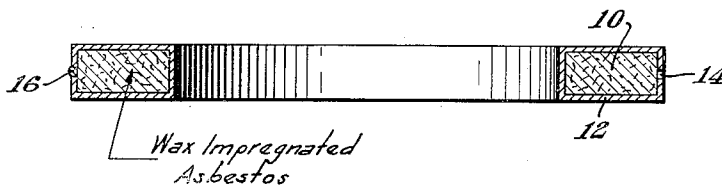


Fig. 2.



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METHOD OF MAKING METAL COVERED
GASKETS

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8,985. Divided and this application November
30, 1935, Serial No. 52,285

2 Claims. (Cl. 204—8)

This invention relates to a method of making metal covered fibrous gaskets, particularly gaskets for use when unusually high fluid pressures and temperatures are being dealt with, such as in the treatment of hydrocarbon oils. The primary object of the invention is the provision of improved gaskets of this type which are compressible, which have no joints or overlapping seams and which will withstand extremely high pressures and temperatures.

This is a division of a copending application Serial No. 8,985 filed March 2, 1935.

It has been fairly common in the manufacture of metal covered gaskets to cut or stamp a blank from some suitable fibrous material such as asbestos and then to mechanically cover this blank with relatively thin metal. The metal cover is usually preformed in two or more parts which parts are applied to the asbestos base and then held thereon by crimping the seams of the cover. A disadvantage which attaches to the use of this form of metal-asbestos gasket is the fact that the asbestos may not be completely enclosed by the metal jacket. This disadvantage becomes serious especially in large sizes and when the gaskets are used against high liquid pressures. It has been found that the liquid often finds its way through the seams of the jacket into the asbestos which soaks it up and may allow it to pass through to the low pressure side. Another disadvantage of this form is that the gasket being made of preformed parts is not sufficiently resilient or compressible when in use.

It has also been known to cover a stamped asbestos blank with a protective metal coating by electroplating the surface of the blank. The finished metal coat, however, follows the contour of the blank exactly and, consequently, lacks a desired smoothness of surface.

In accordance with the present invention a blank of some suitable fibrous material such as asbestos is first saturated with a wax of low melting point and then slightly compressed between suitable plates of the desired shape. After the wax has set, the impregnated blank is removed and dusted with graphite or other suitable electrically conductive powder after which the entire blank is electroplated. One or more small holes are then made in the edge of the metal coating and the gasket is heated slightly above the melting point of the wax. The liquid wax may thus be removed through the openings which are subsequently sealed by any suitable means.

For a further understanding of the invention reference may be had to the accompanying

drawing in which Figure 1 is a plan view of the finished gasket while Figure 2 is a section taken on line 2—2 of Figure 1.

The two figures of the drawing illustrate a circular metal covered asbestos gasket made in accordance with this invention. A blank 10 of asbestos fibre of the desired configuration is saturated with a wax of low melting point and before the wax has set the blank is placed between a pair of flat plates, not shown, disposed in parallel relation and separated a desired distance. The upper and lower surface of the wax impregnated blank will thus be rendered smooth and flat and after the wax has set the plates may be removed. Any excess wax on the edges of the blank may be scraped off after which the blank is ready for the plating process.

The entire surface of the wax impregnated blank is rendered electrically conductive by dusting with powdered graphite. The blank is then electroplated in the well known manner by immersing it in an electrolytic bath, the graphited surface of the blank forming the cathode. The anode, of course, will be formed of the metal with which it is desired to cover the blank, such as for instance copper, nickel or chromium. After the proper thickness of the metal plate 12 has been deposited on the surface of the blank the gasket will be removed from the plating bath and one or more small openings 14 may then be punched or drilled through the metal coating, preferably through the edge portion thereof. The gasket is then heated to a temperature somewhat above the melting point of the wax, whereupon the liquefied wax will flow out of the asbestos through the openings 14. This operation may, of course, be assisted by the application of suction or air pressure. The openings 14 are preferably then sealed by any suitable material such as solder 16 and the gasket is ready for use. For purposes of illustration, only one of the openings 14 is shown in the drawings as sealed with solder 16. Due to the provision of the openings 14 the wax is readily removed from the asbestos fibre without producing any deformation of the gasket, the parallel surfaces of which will remain flat and smooth.

Through the carrying out of this method a gasket will be formed which will not only be uniform in thickness but will have exceedingly flat surfaces on both faces. Due to the removing of the wax saturant the body of asbestos will be porous and compressible thus rendering the gasket suitable for use at high pressures. The fact that the wax is removed also makes the

gasket safe for use where high temperatures are involved.

Obviously many modifications and variations of the invention, as hereinbefore set forth, may be made without departing from the spirit and scope thereof, and therefore only such limitations should be imposed as are indicated in the appended claims.

I claim:

10 1. The method of making metal covered asbestos gaskets which comprises saturating a porous blank of asbestos fibre with a wax of low melting point, slightly compressing the saturated blank between two flat plates until the wax
15 saturant has set so as to provide smooth surfaces on said blank, removing said plates and dusting the entire surface of the blank with an electrically conductive powder, electroplating the powdered surface with a suitable metal, forming a

small opening in the metal coating and heating the gasket above the melting point of the wax so that the wax will flow out of the asbestos fibre through said opening, and then filling said opening with sealing material so as to hermetically seal the asbestos.

2. The method of manufacturing a gasket which comprises impregnating a blank of porous material with a wax which is solid at normal temperature, compressing said impregnating blank between flat plates until the wax saturant has set so as to form smooth surfaces on the blank, coating the smooth impregnated blank with an electrically conductive powder, electroplating said coated blank with metal, and there-
15 after removing the wax from said blank by heating the metal coated blank to a temperature above the melting point of the wax.

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