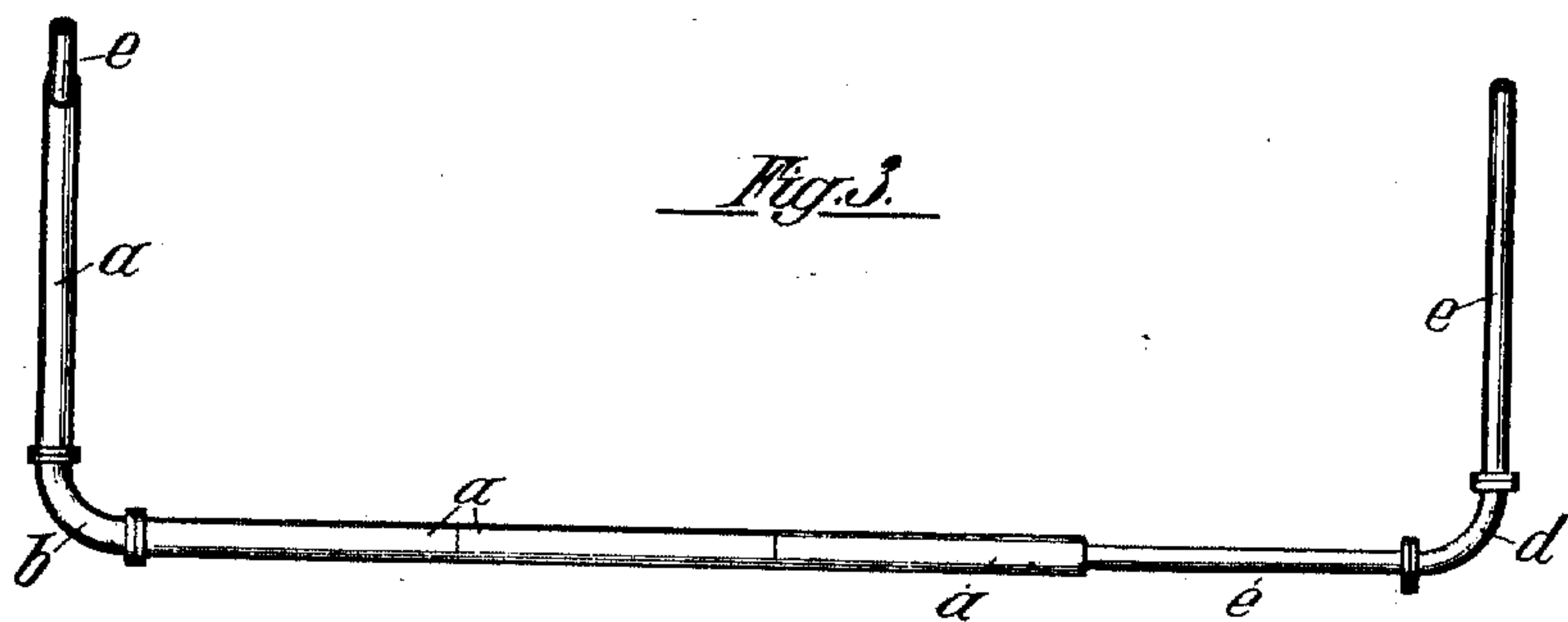
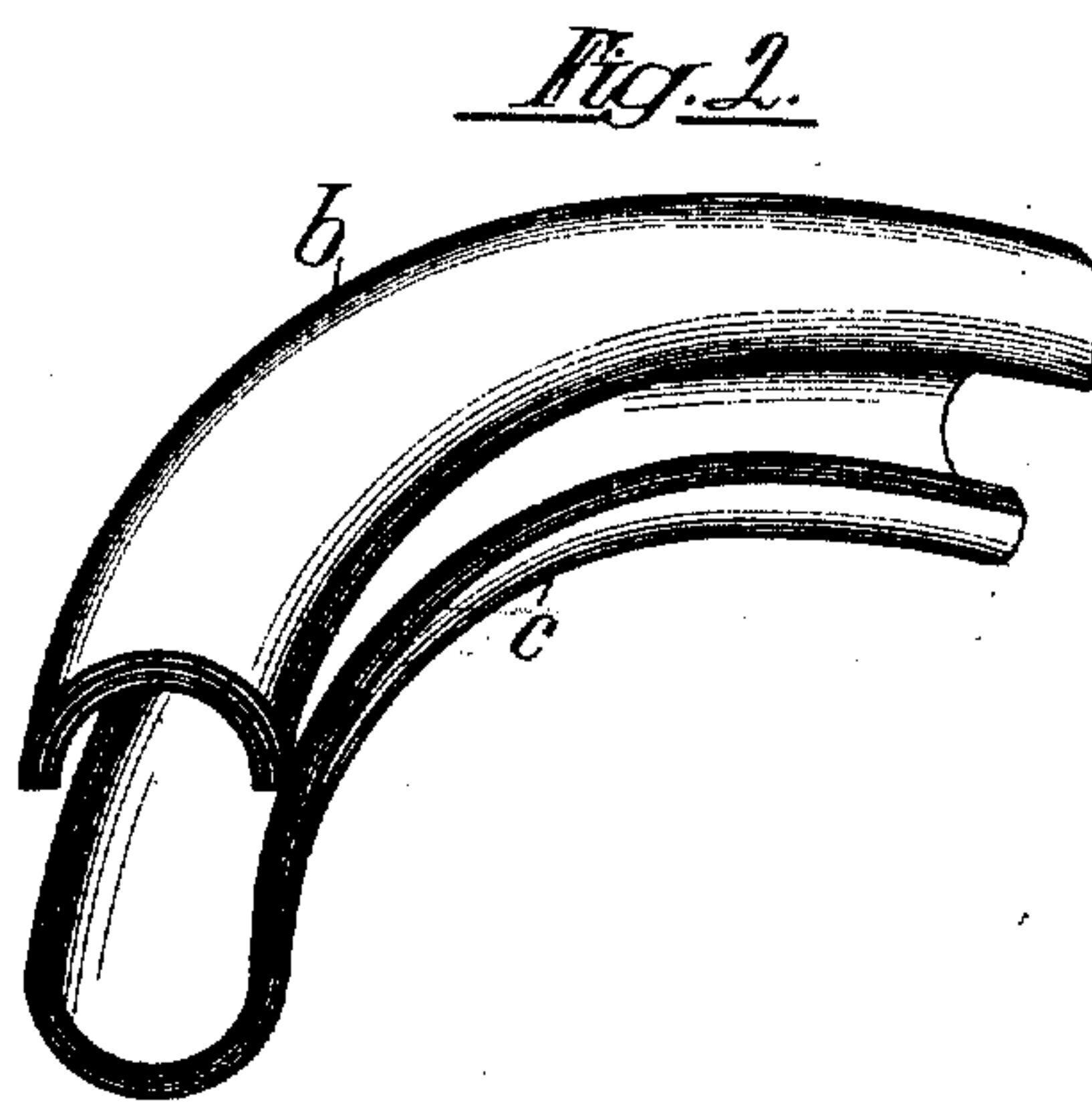
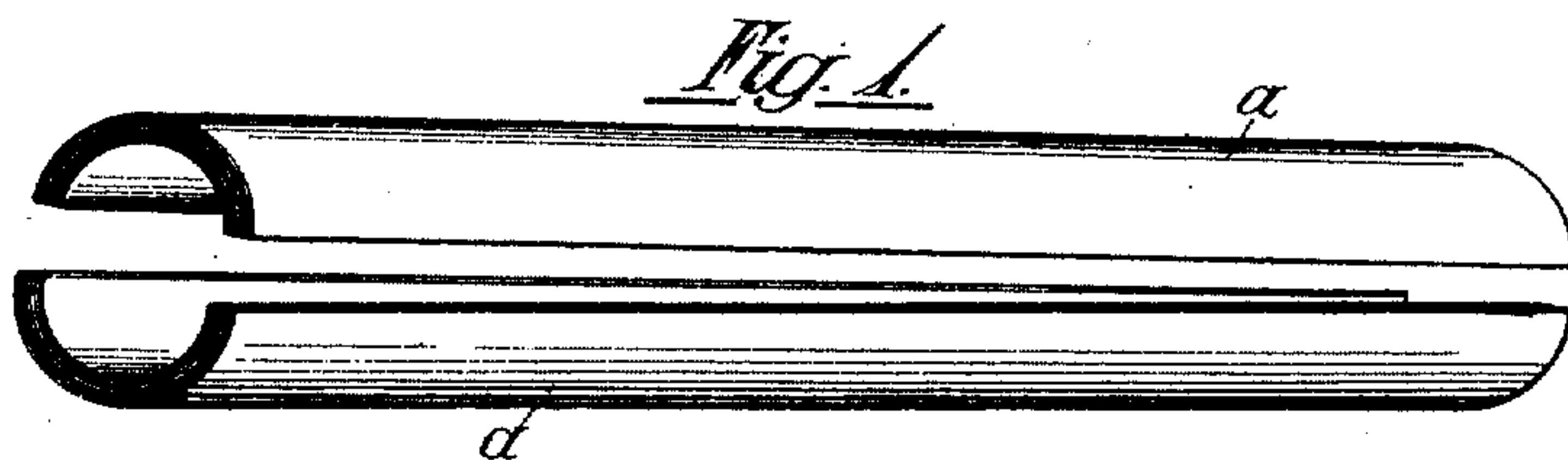


H. KUMPF.  
INSULATING MEANS FOR PIPES AND THE LIKE.  
APPLICATION FILED JULY 26, 1905.

990,658.

Patented Apr. 25, 1911.



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# UNITED STATES PATENT OFFICE.

HEINRICH KUMPF, OF STUTTGART, GERMANY.

INSULATING MEANS FOR PIPES AND THE LIKE.

990,658.

Specification of Letters Patent. Patented Apr. 25, 1911.

Application filed July 26, 1905. Serial No. 271,394.

*To all whom it may concern:*

Be it known that I, HEINRICH KUMPF, citizen of the German Empire, residing at Stuttgart, in the Kingdom of Württemberg, Germany, have invented certain new and useful Improvements in and Connected with Insulating Means for Pipes and the Like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to non-conducting covering employed for insulating steam pipes and the like, and has for its principal object to provide an insulating covering that is flashed with fire-proofing and which will fully protect the pipe from exposure to low temperature with the resultant condensation of steam.

A further object of the invention is to provide a non-conducting and incombustible covering that is formed of felt saturated with a fire-proof composition, such for instance as chlorid of magnesium or chlorid of aluminum and magnesite, which, when dried, will hold the sheets or strips of felt in any shape to which they have been molded.

With these and other objects in view, my invention consists in the construction and combination of elements hereinafter described and particularly pointed out in the claim.

Figure 1 is a perspective view of a pipe covering designed for the protection of a straight pipe, and shown as formed in two sections. Fig. 2 is a similar view showing a covering designed for use on an elbow, or curved pipe. Fig. 3 shows a set of pipes partly protected by the improved covering.

In carrying out the invention, sheets or strips of felt are cut into proper shape and saturated in a binding material or substance that preferably is of such nature as to render the felt non-inflammable. For instance, a solution of chlorid of magnesium or chlorid of aluminum and magnesite burned and ground. The magnesite, of course, when burned becomes magnesia. The magnesia or ground magnesite re-acts with the magnesium chlorid to produce magnesium oxychlorid, which serves to cement together particles of felt.

In preparing the covering, the magnesite

is stirred into the chlorid of magnesium until a thin milky liquid is formed. The felt in the form of sheets is then laid into the liquid or solution and the liquid will be taken up by the felt. After this, the felt is then pressed in a suitable apparatus so that a greater part of the solution is removed from the felt thus leaving the fabric impregnated with a small quantity of oxychlorid of magnesium. The sheets of felt with the comparatively small quantity of the liquid therein, are placed into suitable molds and pressed into shape and allowed to dry while in the mold, so that the felt will retain the general shape of the mold, but said molded covering will be pliable so that the same may be to a certain extent shaped to a part to which it is to be applied.

The molds are shaped to conform to the pipes or other articles to which the covering is to be applied, and while coverings may be made in the form of complete tubes, they are preferably sectional in order to permit ready application to pipes already in place.

In the construction shown in Fig. 1, the covering comprises two sections, *a, a*, each approximately semi-circular in cross section, and designed to be applied to a straight pipe; while in Fig. 2, the sections, *b, b*, are shaped for application to an elbow, or curved pipe. In the construction shown in Fig. 3, the coverings *a, b*, are shown as applied to a number of connected pipes *c, d*.

Having thus described the invention, what is claimed is:—

As an article of manufacture, a pliable pipe covering adapted for application in sections to a pipe or other article, comprising strips or sheets of felt impregnated with a small quantity of oxychlorid of magnesium formed by a mixture of chlorid of magnesium and ground magnesite or magnesia, the strips of felt being shaped or molded to the desired form and the felt fibers being molded or held pliable in the form to which they are molded by the binding action of the oxychlorid of magnesium.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

HEINRICH KUMPF.

Witnesses:

A. L. DRAUTZ,  
RUDOLF BRECHT.