No. 730,963. PATENTED JUNE 16, 1903.

N. POULSON.

FIREPROOF FLOORING.

APPLICATION FILED JAN. 16, 1903.

NO MODEL.

Fig. 1.

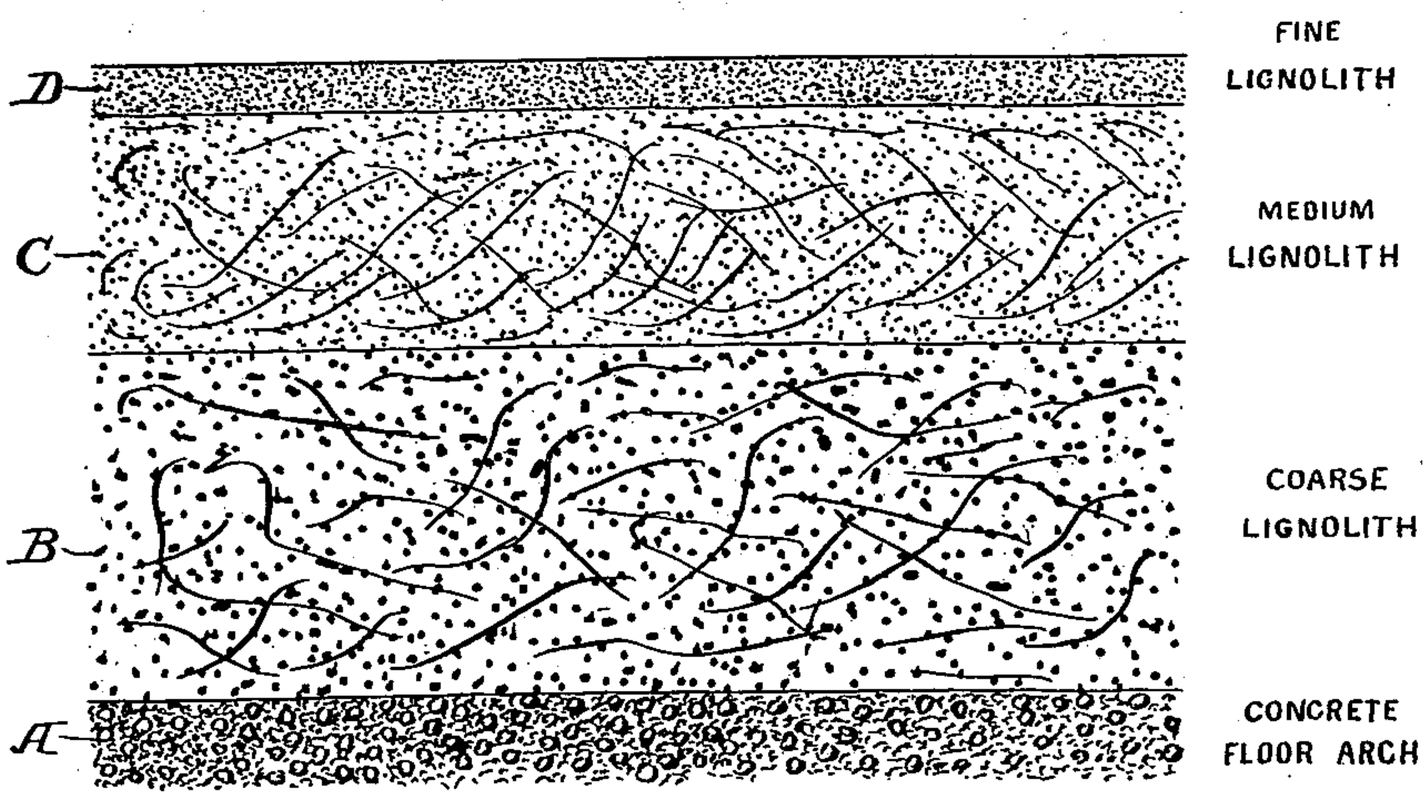
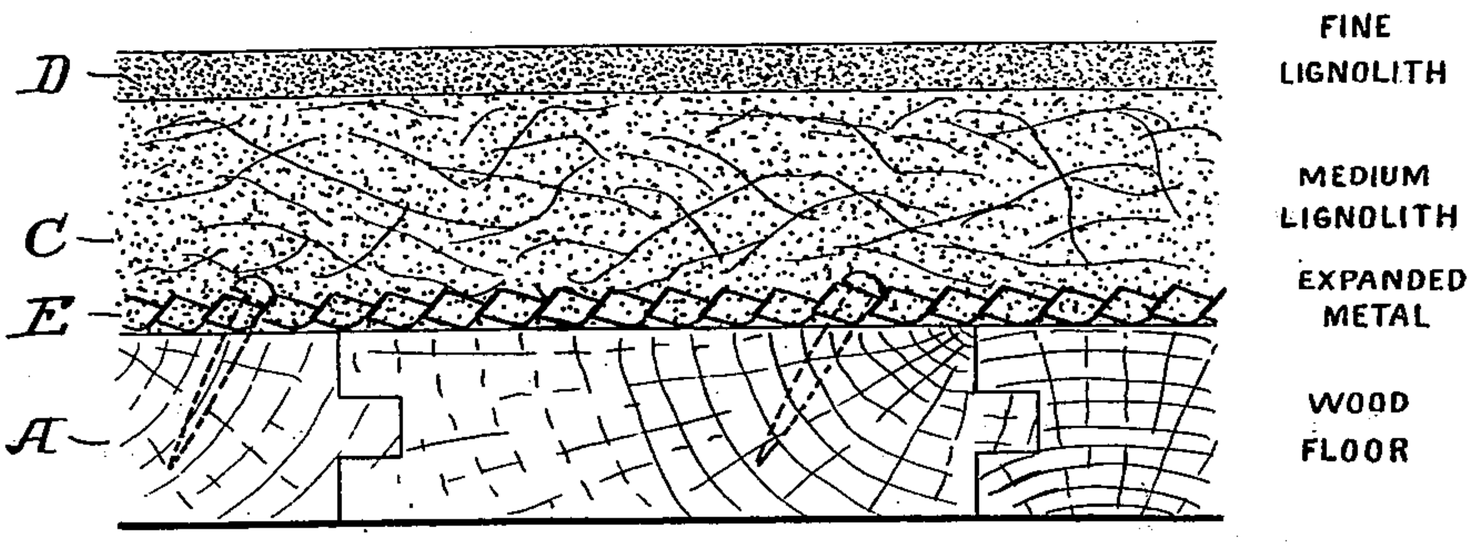


Fig. 2.



Witnesses
J. G. Stinkel
Wm. Gillman, Jr.

Inventor
Niels Poulson
By Poulson Freeman
Attorneys

No. 730,963. Patented June 16, 1903.

UNITED STATES PATENT OFFICE.

NIELS POULSON, OF BROOKLYN, NEW YORK.

FIREPROOF FLOORING.

SPECIFICATION forming part of Letters Patent No. 730,963, dated June 16, 1903.

Application filed January 16, 1903. Serial No. 139,349. (No model.)

To all whom it may concern:

Be it known that I, NIELS POULSON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Fireproof Flooring, of which the following is a specification.

My invention relates to fireproof floorings, but intended for use wherever concrete, asphalt, or other like floorings have been employed; and my invention consists of a flooring illustrated in the accompanying drawings, in which—

Figure 1 is a section through a flooring consisting of three layers and illustrating my invention. Fig. 2 is a similar view showing a two-layer structure.

The flooring is laid upon a base A, which may be of earth, masonry, concrete, wood, or otherwise, according to circumstances. The flooring consists in all cases of a plurality of layers—that is, a surface layer D and one or more layers B or B and C—the layer B being the foundation layer, and the layer C, which is sometimes used, intervening between the layers B and D. The surface layer is of cement, under which term I include any of the compositions generally employed for surfacing—as, for instance, compositions of Portland cement and sand, with or without other materials, and constituting a hard, durable, and solid body of material.

It has been found that the surface layers when supported directly on the base or upon foundation layers of solid unyielding material are extremely liable to warp and crack, especially as in such cases the main body of material is in the surfacing, which must be comparatively thick, a factor which adds very materially to the cost of the structure. I have found that this warping and cracking are avoided by the use of one or more layers below the foundation which are semi-elastic—that is, capable of yielding to a very slight degree as the surface layer expands or contracts—so as not to break the connection between the surface layer and that beneath, but sufficiently solid and unyielding to effectively support the surface layer. Thus the surface layer may be made relatively thin, but is so supported that it will not break, while the foundation layer is thicker, but consists in great part of fibrous material, which not only secures a slight degree of elasticity, but greatly reduces the cost and weight of the structure as a whole.

While different materials or ingredients may be employed for the foundation layer, I prefer to make use of a composition of oxid and chlorid of magnesium and fibrous material, as excelsior, in the proportion of two parts of oxid of magnesium, one and one-half parts of chlorid of magnesium, and one part of excelsior. These proportions may, however, be varied and any suitable earthy matters and fibrous materials may be used. These materials are mixed and packed to secure a body of sufficient solidity, but not so as to render the same hard and inflexible. When an intermediate layer is employed, the fibrous material may be comminuted—for instance, in the form of sawdust—and packed so as to receive greater solidity than in the foundation layer. In either case the composition is so prepared that the fibrous material can contract and expand with the surface layer without warping or breaking. These sublayers may be two or three inches thick, if necessary, so that the great body of the structure is greatly reduced in weight and of comparatively inexpensive material.

The surface layer, much thinner than heretofore, may be of cement or of magnesia compounds alone or may contain such a proportion of fine sawdust or wood-pulp as will add to its flexibility without practically impairing its hardness, strength, and solidity.

When the flooring is placed on a wood base, as in Fig. 2, expanded metal E is first nailed to the wood, and the foundation layer is placed on the expanded metal, thus securing a firm connection between the foundation layer and the base.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. The combination in a flooring, of a foundation layer composed of earthy material com-

bined with fibers to form a semi-elastic body, a second layer also of earthy and fibrous materials but more solid than the foundation layer, and a surface layer of cement, substantially as set forth.

2. A fireproof flooring consisting of a layer of cement combined with a supporting layer of semi-elastic material, a wood base and expanded metal connected to the base and embedded in the foundation layer, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NIELS POULSON.

Witnesses:
HENRY M. LARSON,
CHARLES S. COOKE.