B. H. LEATHER.

WATERPROOF CONSTRUCTION.

APPLICATION FILED MAR. 24, 1908.

968,573. Patented Aug. 30, 1910.

Fig. 1.

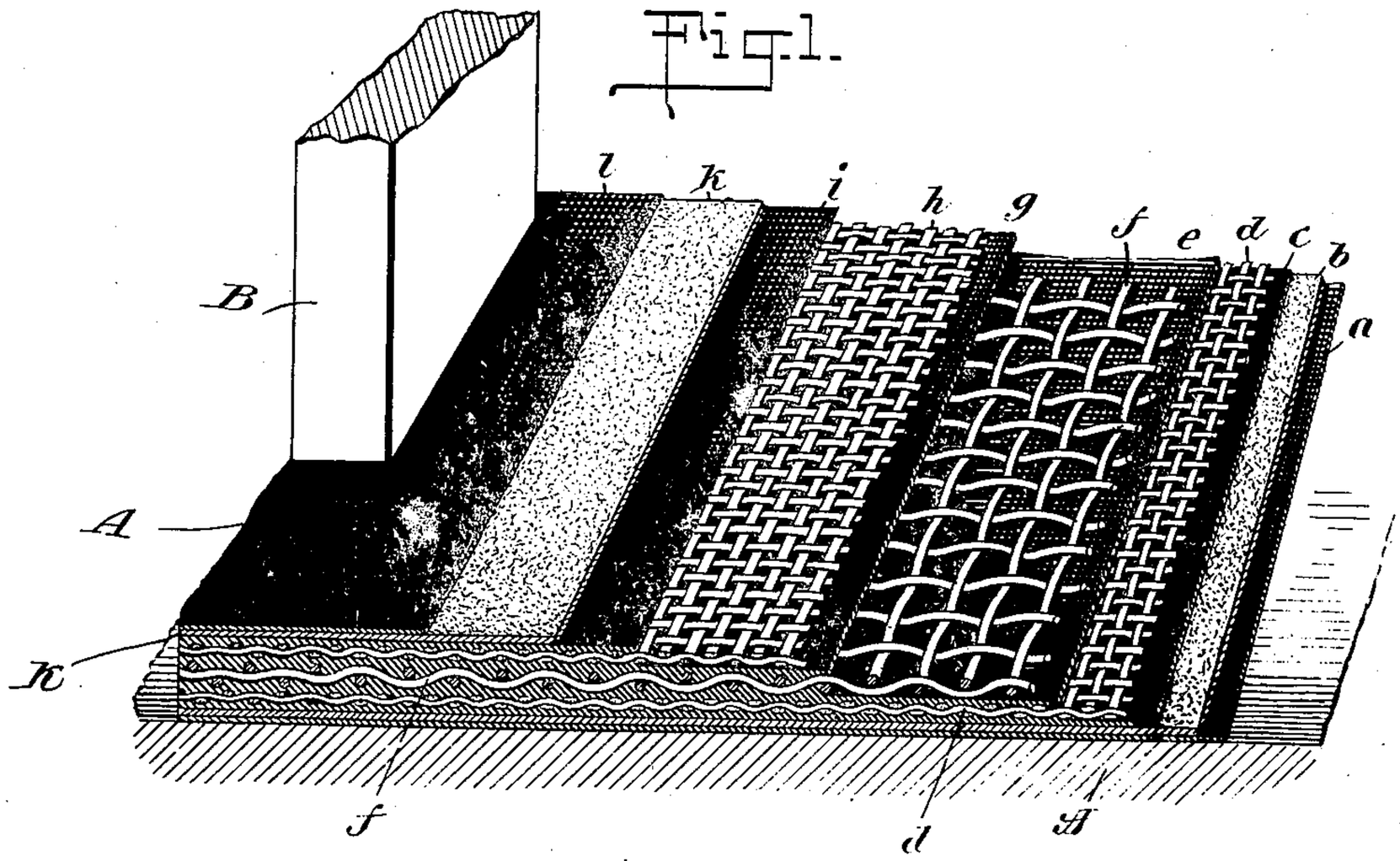
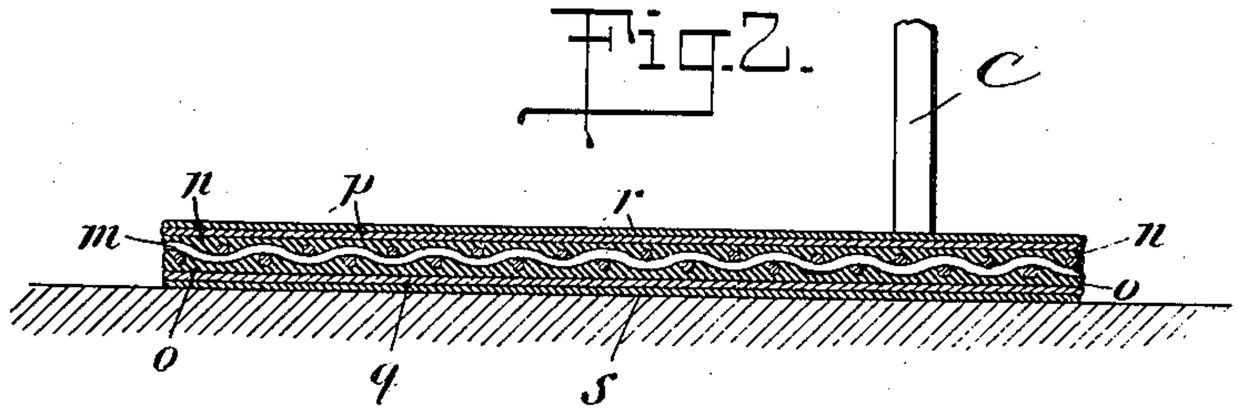


Fig. 2.



WITNESSES

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WATERPROOF CONSTRUCTION.

968,573. Specification of Letters Patent. Patented Aug. 30, 1910.

Application filed March 24, 1908. Serial No. 422,891.

To all whom it may concern:

Be it known that I, BASIL H. LEATHER, a subject of the King of Great Britain, and a resident of Bathbeach, borough of Brooklyn, county of Kings, State of New York, have made and invented certain new and useful Improvements in Waterproof Constructions, of which the following is a specification.

My invention relates to an improvement in protective or waterproof coatings or coverings, and more particularly to that class thereof in which the coating or covering is adapted to be used in connection with foundation work, tunnels, subways, vault, or other similar structures, wherein it is necessary to protect the structure from the deteriorating effects of water or dampness and wherein the coating or covering is liable to be subjected to pressure.

Heretofore, in this class of construction, it has been found that the pitch, tar or other waterproofing material which is employed in coatings of this description, and which is more or less plastic under ordinary temperature, will, under the application of pressure, be displaced laterally, or be squeezed out from under the point or points at which the pressure is applied, whereby the waterproofing qualities of the coating under said point or points will be materially lessened if not altogether destroyed.

The object of my invention is to provide means embedded within the waterproofing material, whereby this displacement or squeezing out of said material due to the pressure to which it is subjected, will be effectually prevented, in consequence of which the waterproofing qualities of my improved coating or covering will not be impaired at the point or points of pressure.

Other objects of my invention are to provide a coating or covering of this character which may be quickly and economically laid, and which will be strong and durable.

With these and other objects in view, my invention consists in certain novel features of construction, as will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings Figure 1 is a perspective view, partly in section of my improved covering or coating and a portion of the superstructure, and Fig. 2 is a sectional view of a modified form of the coating, the superstructure being shown in elevation.

Referring to Fig. 1 of the drawing, in which the preferred construction of my improved covering or coating is shown, A indicates a portion of the structure upon which the coating is to be superimposed, and which may be the foundation work of a building, or it may be a tunnel, subway, vault or any other similar structure. The covering or coating, which is preferably laid *in situ*, is laid or built up in the following manner:— First, a layer of waterproof binding material, *a*, such as tar, pitch, asphalt, or other bituminous or waterproof material, is spread or laid upon the surface of the structure A, and a layer or sheet of imperforate fabric *b*, such as felt or paper, is laid thereupon, after which a second layer of the waterproof binding material *c* is spread upon the exposed surface of the imperforate fabric *b* thereby embedding the latter in the binding material. Upon this second layer is placed or laid a sheet or layer of porous or perforated fabric *d*, such as burlap or coarse canvas, which is covered with a third layer *e* of the waterproof binding material, some of which will pass through the perforations or interstices in the fabric *d*, whereby the latter is thoroughly embedded within the binding material. Upon the third layer of the waterproofing material *e*, is spread or laid a sheet or layer of reticulated metal *f*, which may consist of wire-netting, wire-mesh, expanded-metal, or any other similar material, and over and upon the reticulated metal *f*, a fourth layer *g* of the binding material is laid, some of which will pass through the meshes or openings in the metal sheet to thoroughly embed the same therein. The coating or covering is then completed by being built up or laid in a manner the inverse of that described, that is to say, upon the layer of binding material *g* is placed a sheet or layer of the porous fabric *h*, then a fifth layer of the binding material *i*, then a sheet or layer of the imperforate fabric *k*, and finally a sixth layer of the binding material *l*. B represents the superstructure of any suitable form which is supported upon the upper surface of the covering.

It will of course be understood without further illustration, that two or more layers of the imperforate fabric, separated by a layer of the binding material, could be employed in place of the single layers or sheets *b* and *k* shown, without in any way depart-

ing from the spirit of my invention, in case a thicker or heavier covering should be desired.

In Fig. 2, I have shown a modified construction of my improved coating or covering, which is adapted to be used in lighter work, and in which the pressure exerted upon the covering or coating will be comparatively low. When these conditions exist, I may omit the layers of perforated or porous fabric, in which case the coating or covering would comprise a layer or sheet of reticulated metal *m* embedded between the layers *n* and *o* of the binding material, the layers or sheets of the imperforate fabric *p* and *q* and the outer layers of binding material *r* and *s*, the whole being laid in a manner similar to that described above with respect to Fig. 1. C represents the superstructure of any suitable form which is supported upon the upper surface of the covering. While this modified form of covering or coating gives good satisfaction, I prefer, especially for heavier work, to construct the coating in the manner shown in Fig. 1, as the porous or perforated fabric protects the imperforate fabric from being cut or in any way mutilated by the sheet of reticulated metal. In both instances, however, it will be seen that a sheet or layer of reticulated metal is employed, which is embedded within the binding material, and the strands thereof will effectually prevent lateral movement or displacement of the binding material which is more or less plastic at ordinary temperature, when pressure is applied to the outer surface of the coating or covering, such as would be caused by the erection of a superstructure thereon, whereby the waterproofing qualities of that portion of the coating or covering which lies under the point or points of pressure will be unimpaired.

It will also be seen that both modifications comprise a plurality of layers or sheets which are embedded within and separated from one another by the waterproof binding material.

While I have shown my improved coating or covering as being applied to a flat surface, it will of course be understood that it is equally well adapted to be applied to curved or irregular surfaces, owing to the flexibility or resiliency of the reticulated metal.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a construction of the class described, in combination, a foundation or the like, a superstructure supported thereon, a normally plastic waterproof binding material interposed between said foundation and said superstructure, and means embedded within said material for preventing lateral movement thereof by reason of the pressure exerted by said superstructure.

2. In a construction of the class described, in combination, a foundation or the like, a superstructure supported thereon, a normally plastic waterproof binding material interposed between said foundation and said superstructure, and a sheet of reticulated metal embedded within said material for preventing lateral movement thereof by reason of the pressure exerted by said superstructure.

3. In a construction of the class described, in combination, a foundation or the like, a superstructure supported thereon and a protective covering interposed between said foundation and said superstructure, said covering consisting of a normally plastic waterproof binding material having a layer of reticulated metal and a layer of fabric embedded therein.

4. In a construction of the class described, in combination, a foundation or the like, a superstructure supported thereon, a protective covering interposed between said foundation and said superstructure, said covering consisting of a normally plastic waterproof binding material having a layer of reticulated metal embedded therein, a layer of fabric embedded within said material adjacent one side of said layer of metal, and a second layer of fabric embedded within said material adjacent the other side of said layer of metal.

5. A protective covering of the character described consisting of a waterproof binding material having a layer of reticulated metal and a layer of imperforate fabric embedded therein, said layers being spaced from one another and means interposed between said layers for protecting the fabric from being mutilated by the reticulated metal when the covering is subjected to pressure.

6. A protective covering of the character described consisting of a waterproof binding material having a layer of reticulated metal and a layer of imperforate fabric embedded therein, said layers being spaced from one another, and a layer of fabric interposed between said first and second mentioned layers for protecting the imperforate fabric from being mutilated by the reticulated metal when the covering is subjected to pressure.

7. A protective covering of the character described, comprising a layer of reticulated metal, a layer of porous fabric and a layer of imperforate fabric, all of said layers being embedded within, and separated from one another by a waterproof binding material, said layer of porous fabric being positioned intermediate said layer of reticulated metal and said layer of imperforate fabric, substantially as described.

8. A protective covering of the character described, comprising a layer of reticulated metal, a layer of porous fabric on either side thereof and separated therefrom by a layer of waterproof binding material, a layer of imperforate fabric adjacent each of said layers of porous fabric and separated therefrom by a layer of waterproofing material, and a layer of waterproof binding material covering each of said layers of imperforate fabric, substantially as described.

Signed at New York, borough of Manhattan, in the county of New York and State of New York, this 21 day of March A. D. 1908.

BASIL H. LEATHER.

Witnesses:

MATTHEW C. MURPHY,

SAM'L E. MILLER.