Patented Nov. 1, 1932 1,885,113

UNITED STATES PATENT OFFICE

THOMAS JENKINS, OF NORRISTOWN, PENNSYLVANIA, ASSIGNOR TO NORRISTOWN MAGNESIA & ASBESTOS COMPANY, OF NORRISTOWN, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

WATER AND FLAMEPROOF PAPER

No Drawing. Original application filed November 12, 1930, Serial No. 495,267. Divided and this application filed May 20, 1932. Serial No. 612,657.

This is a division of my application Serial No. 495,267 filed November 12, 1930, for Letters Patent of the United States for improvement in heat insulating coverings; the paper herein claimed being advantageously employed as the outer casing for such coverings for steam and hot water conduits and containers in installations for heating buildings and for other purposes.

The principal ingredient of my improved paper is asbestos fibers. Ordinarily, paper formed of such fibers is characterized by a dusty gray appearance due to the natural color of such fibers and is highly absorbent of moisture which causes such ordinary paper to be rapidly disintegrated when subjected to moisture unless provided with an exterior coating of some other material, as paint, which coating is almost as costly as the paper itself because of the naturally porous and absorbent nature of such paper, which necessitates the application of an abnormally large amount of paint per unit of surface to cover it. It is the purpose and effect of my invention to produce such a paper which is not only substantially flameproof because of the high percentage of its asbestos content but is substantially waterproof and essentially different in coloring from the natural asbestos fibers; the natural dusty color of the fibers being suppressed and modified by inclusion therewith of a metallic oxide capable of chemical reaction and combination with the other ingredients of the paper to permanently impart to the paper a pleasing and ineradical color without material increase of the cost of production of such improved paper as compared with the ordinary asbestos paper. For instance, I find it convenient to make the paper composition of certain ingredients which, in the dry state, are in the following proportions:

	Per cent
Asbestos fibers	93
Wood cellulose	3
Starch	2
Iron oxide	2
Sodium silicate	.50
Alum	.25

The dry materials aforesaid are mixed in about three times their bulk of water to form a pulp which is then formed into sheets, conveniently by ordinary paper making means. When such sheets are dried, the metallic oxide combines with the other ingredients to form a moisture resistant binder for the asbestos fibers and impart a permanent pleasing pink tint to the composition throughout the entire thickness of the sheets, so that they retain their distinctive coloring without any superficial coating and despite subjection to such wear as would remove the ordinary painted coating.

Although the composition aforesaid is self-colored with a pleasing effect, it is adapted to receive any desired coating or decorating material. For instance, liquid coating material may be sprayed thereon or otherwise applied thereto at much less cost than such coatings may be applied to ordinary asbestos paper, because the binder aforesaid has rendered my improved paper non-absorbent so that it may be covered by a minimum amount of any ordinary paint.

I prefer to use the oxides of iron in my composition not only because of their affinity for the silicate therein which cause them to react and combine therewith to form an insoluble binder for the asbestos fibers, but because any desired color of the composition may be attained by the use thereof. Although I prefer to use the iron oxide (peroxide) which will produce the pleasing pink tint above contemplated for casings for pipe coverings, because that tint harmonizes with any color scheme; other shades and tints from black to pale yellow may be produced by the employment of iron oxide. However, other metallic oxides may be employed to react with the silicate and alum constituents of the composition to form binders having the desired waterproof quality.

Therefore, I do not desire to limit myself to the precise details of construction, arrangement, or method of procedure herein set forth, as it is obvious that various modifications may be made therein without departing from the essential features of my invention, as defined in the appended claims.

I claim:

1. A pink tinted water and flameproof paper including asbestos fibers ninety-three per cent.; wood cellulose three per cent.; starch two per cent.; iron oxide two per cent.; sodium silicate one-half of one per cent.; and alum one-fourth of one per cent.

2. A water and flameproof paper including asbestos fibers; wood cellulose; starch; iron oxide; sodium silicate; and alum.

3. A water and flameproof paper of which the principal ingredient is asbestos fibers; said fibers being held together by a binder including the insoluble residue of the reaction of iron oxide and sodium silicate.

4. A water and flameproof paper of which the principal ingredient is asbestos fibers; said fibers being held together by a binder including the insoluble residue of the reaction of a metallic oxide with sodium silicate.

5. A water and flameproof paper of which the principal ingredient is asbestos fibers; said fibers being held together by a binder including the insoluble residue of the reaction of an oxide with a silicate and alum.

6. A water and flameproof paper of which the principal ingredient is asbestos fibers; said fibers being held together by a binder including the insoluble residue of the reaction of a metallic oxide with a silicate.

7. A water and flameproof paper, the principal ingredient of which is asbestos fibers; said fibers being held together by a binder including the insoluble residue of the reaction of iron oxide and a derivative of sodium.

8. A water and flameproof paper, the principal ingredient of which is asbestos fibers; said fibers being held together by a binder including the residue of the reaction of an oxide and a silicate of different metals.

In testimony whereof, I have hereunto signed my name at Norristown, Pennsylvania, this tenth day of May, 1932.

THOMAS JENKINS.