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ASBESTOS PAPER

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*Fig. 1.*



*Fig. 2.*

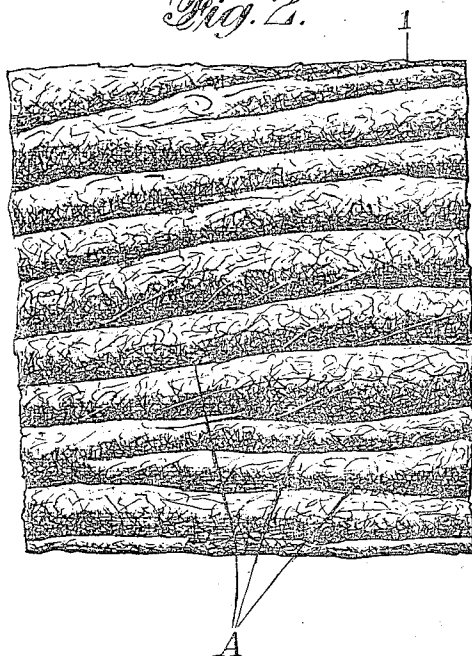
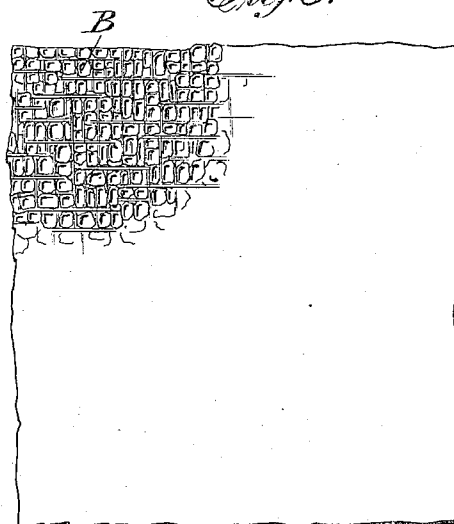


*Fig. 3.*



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## UNITED STATES PATENT OFFICE.

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## ASBESTOS PAPER.

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*To all whom it may concern:*

Be it known that I, WILLIAM J. MOELLER, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton, State of Ohio (whose post-office address is Wyoming, Ohio), have invented new and useful Improvements in Asbestos Paper, of which the following is a specification.

My invention relates to an improvement in, and process for, manufacture of asbestos paper. Heretofore in the manufacture of asbestos paper it has been found necessary in order to get the requisite strength to combine a substantial quantity of fibrous matter other than asbestos with the asbestos and as a result the product has been less satisfactory than it would have been had the paper been composed more nearly of all asbestos. It has also been found in use of asbestos paper that it would tend to break at the point where a slight strain was put on it and attempts, which were unsatisfactory, were made to overcome this by using a heavier paper than was desirable. This use of a heavy paper gave very little advantage, by added strength, but that was more than counteracted by using the heavy paper which had the disadvantage of increasing the weight of the finished product. Asbestos paper as heretofore made has had substantially no elasticity and could not be stretched to any appreciable extent in any direction. I have sought to and have, overcome these objections by my improved asbestos paper and process of manufacture of same, and have obtained a paper which is capable of a great variety of uses. A paper which may be used in much lighter weights, for a given purpose, than heretofore with increased efficiency in resultant products.

In the drawings Fig. 1 is a greatly enlarged sectional view of asbestos paper embodying my invention taken on line 1-1 of Fig. 2.

Fig. 2 is a plan view thereof of one surface.

Fig. 3 is a plan view of the other surface.

In the carrying out of my process in the manufacture of my improved asbestos paper, I proceed in the ordinary way of making asbestos paper and either while the pulp sheet is being formed or later, but before being dried, I subject one surface of it to means for irregularly crêping or crinkling that surface, and the opposite surface to

means for providing it with an innumerable number of adjoining small indentations, after which the sheet is dried without removing the indentations or the ridges or crêping of the surfaces. As a result of this method some of the fibrous material or pulp forming the paper is piled, or laid, up in irregular ridges or elevations A of different or varying heights and depths. On one side of the ridges A the surface is comparatively smooth while on the opposite side it is rough and uneven and has a quantity of the fibres collected there. The finished product has one surface composed of an innumerable number of comparatively small indentations B, while the opposite surface is uneven or irregular and has lines or ridges A having the fibrous or stock material piled up to form same. The finished paper is of likewise varying thickness. This crêping of the surface of the paper results in a rearrangement of the asbestos fibres, curling or folding some while causing others to take positions at various angles to the longitudinal length of the paper.

The preferred form of my improved asbestos paper having one surface provided with a crêped or crinkled effect and the opposite surface formed of an innumerable number of indentations is capable of being embossed without breakage because of the fact that the crêping or piling up of the pulp material and the consequent rearrangement of the fibres in the same either with or without the indentations of the opposite surface permits the stretching of the paper in any direction without breakage.

In the preferred form of my improved paper the crêped surface has a mottled effect caused by the portions of the surface on one side of a ridge being smooth and the portion on the other side of the ridge being rough or uneven.

Of course if desired both surfaces of my paper could be crêped either in the same or opposite directions so that if the surface was rough at a given place the opposite surface at same point would be smooth, but I have found that a very satisfactory product is obtained by crêping one side and providing the opposite side with innumerable small indentations.

In the preferred form of my invention shown in the drawings, or in the modifications referred to where both surfaces are

crêped, a minute examination of a cross section would show a rearrangement of the fibres in the paper into a plurality of planes depending upon the pressure used in crêping and indenting the surfaces.

Claims—

1. A paper containing a major proportion of mineral fibres and having a crêped-like surface.
2. A paper containing a major proportion of mineral fibres and having one surface crêped-like, the opposite surface being provided with innumerable small adjoining indentations.
3. A paper containing a major proportion of asbestos fibres with a suitable binder, and having one surface thereof composed of irregularly arranged elevations and depressions.
4. A paper composed of asbestos fibre with suitable binder, and having a surface thereof composed of irregularly arranged elevations and depressions, the opposite surface having an innumerable number of small indentations.

In testimony whereof, I have signed my name to this specification.

WILLIAM J. MOELLER.