

UNITED STATES PATENT OFFICE.

JOHN S. ROSENTHAL, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN THE TREATMENT OF ASBESTUS FOR THE PRODUCTION OF TEXTILE FIBERS.

Specification forming part of Letters Patent No. **130,245**, dated August 6, 1872.

Specification describing Chemical Treatment of Asbestus or Amianthus, and fibrous products of the same, invented by JOHN S. ROSENTHAL, of Philadelphia, Pennsylvania.

Asbestus or amianthus, in its natural state, consists of fibers matted together in an intracile mass, from which coarse fibrous strands only have heretofore been obtained, owing to the brittle character of the mineral and difficulty of disintegration. I have succeeded, however, in obtaining from the mineral the finest silky and elastic fibers, which admit of being carded, combed, and otherwise treated preparatory to being spun into the finest yarns and converted into lustrous fabrics.

I treat the crude asbestus or amianthus with alkali, which has a tendency to distend or open the mass, strengthen the fibers, and render them more elastic. After the mineral has been subjected to the alkali treatment for a proper length of time I rub and agitate it by suitable mechanical appliances, so as to effect a more thorough disintegration of the fibers and render them still more elastic. The filaments may then be washed, carded, and otherwise treated, and spun into yarn of the finest quality, and this yarn may be woven into a lustrous fabric.

In the alkali treatment of the crude mineral many different substances may be used, and therefore I do not desire to confine myself to any specific alkaline substance or composition, or to any specific mode of applying the same. I will, however, explain alkaline treatments which have succeeded in practice. I have, for instance, boiled the asbestus or amianthus in a strong lye of potash for about two hours with good results, which have also

been obtained by boiling the mineral in common urine. I have found the addition of alum to the lye to be attended with advantageous results. Other ingredients may also be added, such as the tin-crystal and crystal-tartar of commerce. After the mineral has been treated with alkali, and either before or after it has been mechanically disintegrated, it may be subjected to a weak solution of sulphuric or other equivalent acid in water, this having the effect of bleaching the fibers and rendering them more lustrous.

I claim—

1. The treatment of asbestus or amianthus with alkali, substantially as and for the purpose herein set forth.

2. As a new article of manufacture and commerce, a tough and elastic asbestus or amianthus fiber obtained by the chemical treatment described, or any equivalent to the same.

3. A tough, elastic, and disintegrated asbestus or amianthus fiber, produced by a chemical and mechanical treatment, substantially as set forth.

4. The treatment of asbestus and amianthus fibers with acid, substantially as and for the purpose specified.

5. As a new manufacture, asbestus and amianthus fiber obtained from the crude mineral by the alkali and acid treatments herein described, or any equivalent to the same.

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

J. S. ROSENTHAL.

Witnesses:

WM. A. STEEL,
LOUIS BOSWELL.