

UNITED STATES PATENT OFFICE.

HENRY W. JOHNS, OF NEW YORK, N. Y.

PROCESS OF DEMAGNETIZING ASBESTUS.

SPECIFICATION forming part of Letters Patent No. 461,579, dated October 20, 1891.

Application filed March 28, 1891. Serial No. 386,845. (No specimens.)

To all whom it may concern:

Be it known that I, HENRY W. JOHNS, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented a certain new and useful product or manufacture—i. e., the Process of Demagnetizing Asbestos—of which the following is a specification.

My invention consists in a new and improved process for the manufacture or production of demagnetized asbestos. For a long time there has existed a demand for such a product, it being useful for various manufactures, and various attempts have been made to demagnetize asbestos, no method, so far as I am aware, having been successful. It has been attempted to dissolve the iron by subjecting the asbestos to the action of an acid or a combination of acids. The result of this process has been exceedingly unsatisfactory and has resulted in the destruction of the asbestos fiber because the acids not only dissolve, or rather partially dissolve, the magnetite, but also dissolve the siliceous and the magnesia, which are the main constituents of asbestos, so that the resulting product is not properly asbestos at all. In other words, all the strength and vitality and most of the constituent elements of the asbestos having been destroyed or modified by the action of the acids, there remained nothing but a pulpy mass, which could be molded into certain forms, it is true, but which had no strength or fiber and was useless for the purposes for which demagnetized asbestos is mainly desired.

As the acid process has proved unsuccessful, it is now the practice to remove the magnetite from asbestos manually by picking out one by one the iron particles. This is an exceedingly laborious and expensive process.

By my invention I quickly, easily, and in a very effective manner remove the magnetite, and I do not alter in any respect the several constituents of the asbestos.

I proceed as follows: First I crush the asbestos and reduce it to a loose fiber. During the crushing process the magnetite is loosened; but it remains in the mass. I then subject this mass to violent agitation in a chest or

box with an opening at each end—that is to say, I feed it to a suitably-constructed machine by any suitable device and subject it to the action of any suitable disintegrating device, such as an opener, a picker, a rapidly-rotating brush, or a series of these devices or their equivalent, whereby it is completely torn apart or shredded, so that the fibers of the asbestos pass almost separately through the box. During this operation the particles of magnetite, which, being small in area and heavy as compared with the fibered material, are not influenced so much by the air-blast which is generated, but are influenced more by gravity, drop to the bottom of the box or machine, and the fine fibers, free from magnetite, are carried over the end of the machine.

In case any fine particles of magnetite should be retained by the asbestos, I sometimes assist the action of gravity by placing in the bottom of the box or of an additional box of similar construction or projecting up into it and extending across the box from side to side, or otherwise, as preferred, a series of strong magnets. These may be permanent magnets or electro-magnets, and they may be stationary, but are preferably movable upon a belt or equivalent device, so that as they become coated with the particles of iron they may be automatically cleaned. In this way, there being a sufficient length or area of magnets relative to the quantity of the asbestos fiber passed through the box, all the particles of magnetite, even in the form of dust, are drawn to and held by the magnets; but the asbestos fiber, entirely freed from the magnetite, goes over into a suitable receptacle.

It will be observed that this process, whether the magnets are used or not, is a mechanical, not a chemical, process, and that I do not in any way affect the asbestos except to remove the magnetite.

The perfect result I have attained is largely due to the construction of the separating or fiberizing machine, which of itself almost completely removes the magnetite, and which I do not herein claim nor describe more fully because that is to form the subject-matter of another application for Letters Patent.

I claim—

1. The mechanical process herein described of demagnetizing asbestos, consisting in crushing or fibering the asbestos and then subjecting the mass while under agitation to the action of an air-blast, substantially as set forth.
- 5 2. The mechanical process herein described of demagnetizing asbestos, consisting in crushing or fibering the asbestos and then subjecting the mass while under agitation to the ac-

tion of an air-blast and magnets, substantially as set forth. 10

Signed at New York, in the county of New York and State of New York, this 18th day of March, A. D. 1891.

HENRY W. JOHNS.

Witnesses:

PHILLIPS ABBOTT,
J. E. HOFFMAN.