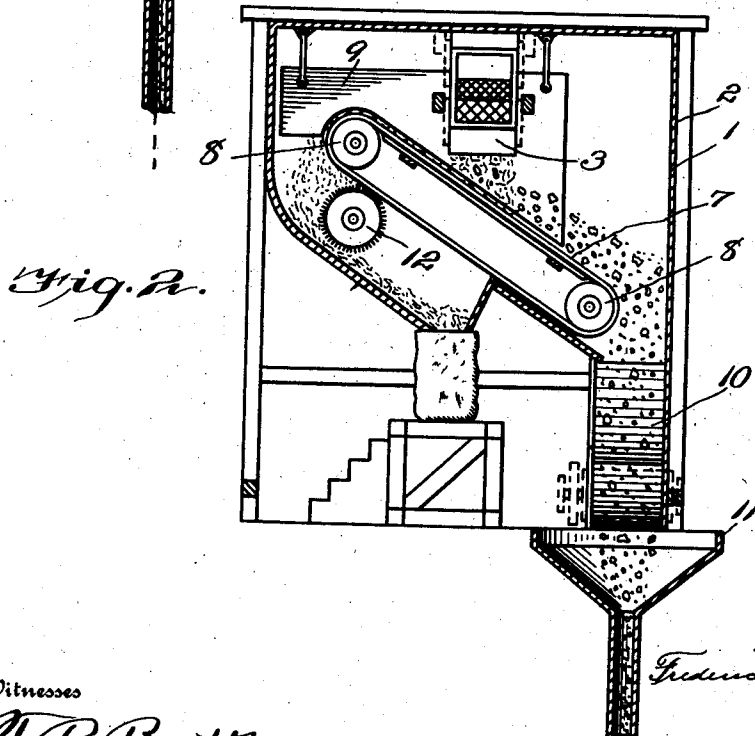
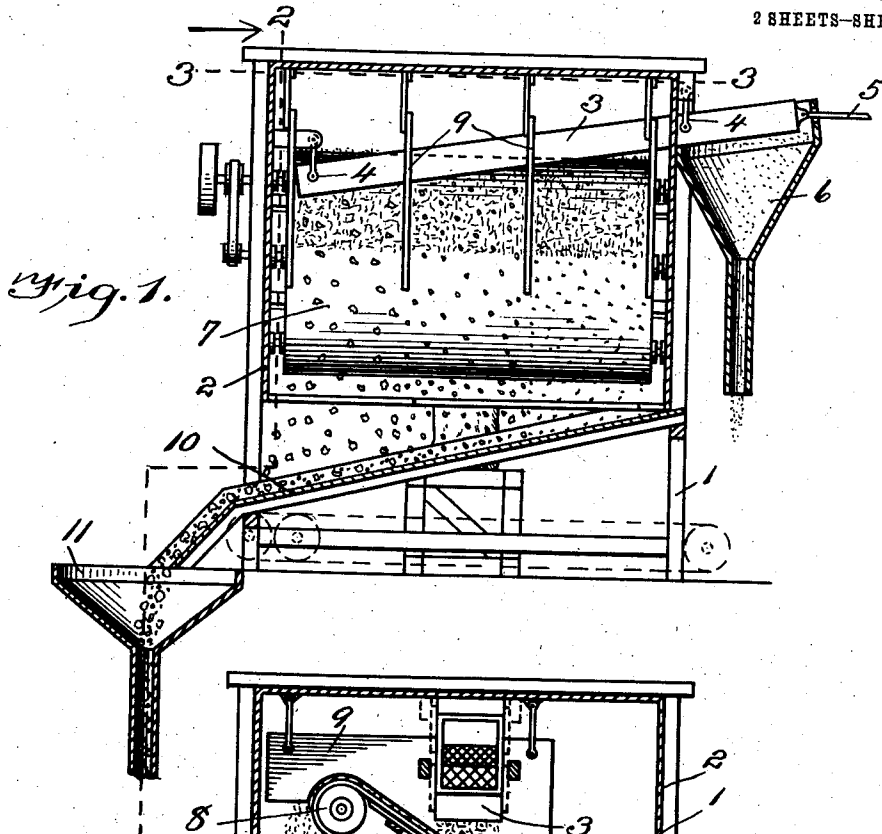


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 ASBESTOS SEPARATOR.
 APPLICATION FILED MAR. 2, 1910.

1,010,779.

Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.



Witnesses

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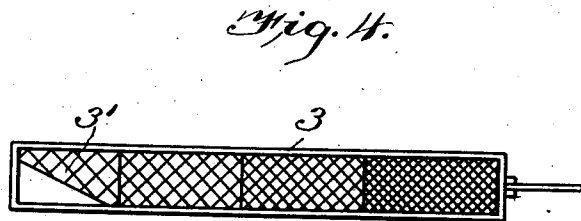
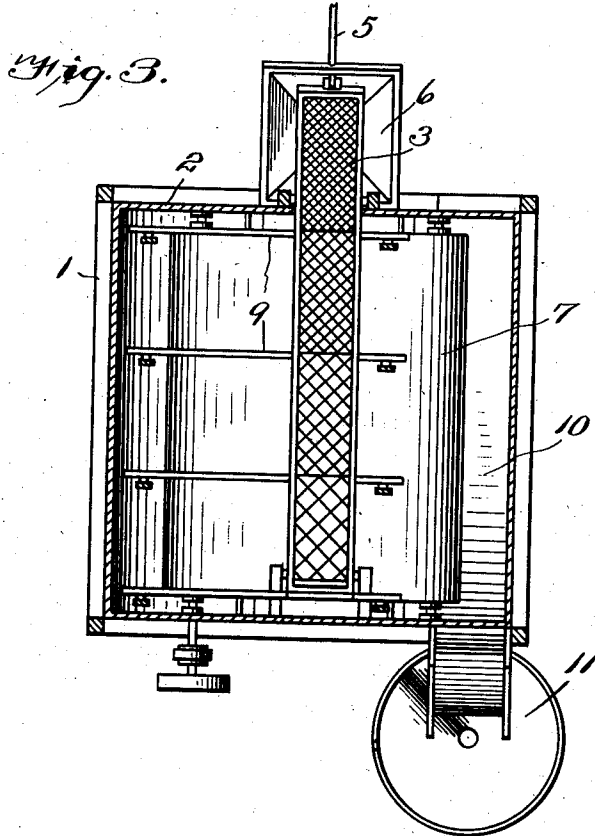
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UNITED STATES PATENT OFFICE.

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ASBESTOS-SEPARATOR.

1,010,779.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed March 2, 1910. Serial No. 546,916.

To all whom it may concern:

Be it known that I, FREDERICK S. McKAY, a citizen of Canada, residing at Sherbrooke, county of Sherbrooke, Province of Quebec, Canada, have invented certain new and useful Improvements in Asbestos-Separators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The invention to be hereinafter described relates to separators, and particularly to asbestos and similar separators.

In order to more clearly disclose the construction, operation and use of the invention, reference should be had to the accompanying drawings forming part of the present application.

Throughout the several figures of the drawings, like reference characters designate the same parts.

In the drawings: Figure 1 is a vertical longitudinal section through the machine. Fig. 2 is a vertical cross section on line 2—2 of Fig. 1, looking in the direction of the arrow. Fig. 3 is a horizontal section on line 3—3 of Fig. 1, and Fig. 4 is a top plan view of the preferred construction of screen.

The general type of asbestos separator heretofore in use has employed suction devices for separating the asbestos from the crushed rock. This, of course, necessitated the use of powerful air pumps and their costly apparatus. The present invention is so constructed as to completely avoid this and many other objections.

A suitable framework 1 of any desired form may be constructed. This framework supports a casing 2, within which the cooperating parts of the separator are mainly supported. Extending within this casing is swingingly suspended an inclined screen or sifter 3, having a graduated mesh or perforations, increasing in size from the upper to the lower end. This screen may be suspended by links 4, or other connections, from the frame. A rod 5 may be used to connect the upper end of the sifter to a pitman, wrist pin, or other moving part of the general machinery of the plant to effect reciprocation of the sifter. The crushed rock fiber will be fed into the

upper end of the sifter, and gravitate slowly toward the lower end as the sifter is reciprocated. As it moves along the sifter the several grades of rock will pass through the different grades of openings in the screen, the largest pieces passing out at the end of the screen. The upper end of the screen projecting beyond the casing 2 and adapted to receive the crushed asbestos rock from the crusher is provided with a very fine mesh for the separation of sand or similar pulverulent matter. This very fine matter contains no fiber of any real value. To that end, a hopper 6 is placed in such position as to receive the material sifted from the upper end of the screen and to conduct it to a waste heap or the like in order that it may not be run through the separator and cause extra work. Beneath the sifter is mounted an inclined traveling apron or belt 7, moving on suitable rolls or cylinders 8. It is desired to keep the several grades or sizes of fiber coming from the sifter separated. To this end, partitions 9 are provided, the distance between two partitions being equal to the length of one of the perforated or screen sections of the sifter. The apron or belt is made of duck or similar fabric on which the asbestos fibers will catch. Beneath the lower end of the apron is mounted an inclined chute 10 leading to a hopper 11 by which the material separated from the fiber may be delivered from the machine to a waste heap or the like.

Beneath the upper end of the lower run of the apron is mounted a combing roll 12 adapted to brush the fibers from the face of the apron. The portion of the casing 2 below the combing roll 12 is formed into an inclined chute by which the separated asbestos fibers may be delivered to bags or other receptacles.

It will be noted that the present machine makes simultaneous use of two principles of separation hitherto not used in this art. The first of these is the tendency of one fiber to stick or adhere to another, and the second is that of gravity separation of relatively heavier parts from relatively lighter ones.

As will appear in Fig. 4, the grating 3' at lower end of the screen 4 is cut off obliquely so that the rock passing therefrom will not fall in the same place on the apron, thus distributing the rock and adding to the life of the apron.

The operation of the machine is as follows: Crushed asbestos rock is fed upon the upper end of the sifter 3, which is reciprocated by any well known connections with any moving part of the machinery of the plant. As the crushed rock gradually settles downward along the screen the several grades of fiber will pass through the various graded portions of the screen and fall between the partitions 9 onto the several sections of the inclined apron or belt, which is driven continuously in an upward direction by suitable belt and pulley or similar connections with the machinery of the plant. As the mixed rock and fiber strikes the inclined fabric belt or apron the rock will bound downward toward the chute 10 while the fiber will stick on the duck or similar material of the belt and be carried upward, being taken from the underface of the apron by the combing roll 12, which may be driven by belt and pulley connections from the upper cylinder or drum of the apron 7. The machine may, of course, be equally well used for separation of chaff from grain, and for many other uses in which the same principles of separation may be employed.

It is clear that changes may be made in the construction, arrangement and disposition of the several parts of the invention, without in any way departing from the field and scope of the same, and it is meant to include all such within this application wherein only a preferred form has been disclosed.

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

1. A separator of the character described, including a plurality of suspended spaced-apart partitions, a reciprocating screen divided into sections of differentiated or graded mesh, and means arranged below said screen for receiving the material passing therethrough, said partitions being ar-

ranged transversely of and adapted to receive said screen in their upper edges along the lines of separation between said sections having their lower edges arranged contiguous and conforming to the upper surface of said material receiving means.

2. A separator for treating asbestos, including a plurality of suspended spaced-apart partitions, an inclined reciprocating screen divided into sections of graded mesh, and traveling means arranged below said screen and at an inclination at right angles to that of said screen for receiving the material passing through the latter, said partitions being arranged transversely of and adapted to receive said screen in their upper edges along the lines of separation between said sections and having their lower edges arranged contiguous to and of a corresponding inclination with that of said material receiving means.

3. A separator for treating asbestos including a plurality of suspended spaced-apart partitions, an inclined reciprocating screen divided into sections of graded mesh, and traveling means arranged below said screen and at an inclination at right angles to that of said screen for receiving the material passing through the latter, said partitions being arranged transversely of and adapted to receive said screen in their upper edges along the lines of separation between said sections and having their lower edges arranged contiguous to and of a corresponding inclination with that of said material receiving means, and means arranged below and at the delivery end of said material receiving means for conveying away the graded material.

In testimony whereof, I affix my signature, in presence of two witnesses.

FREDERICK S. McKAY.

Witnesses:

ALEXINA JONCAS,
G. W. BORLAST.