

J. N. McGIBBON.
SIEVE CLEANING DEVICE.
APPLICATION FILED OCT. 21, 1907.

949,026.

Patented Feb. 15, 1910.

Fig. 1

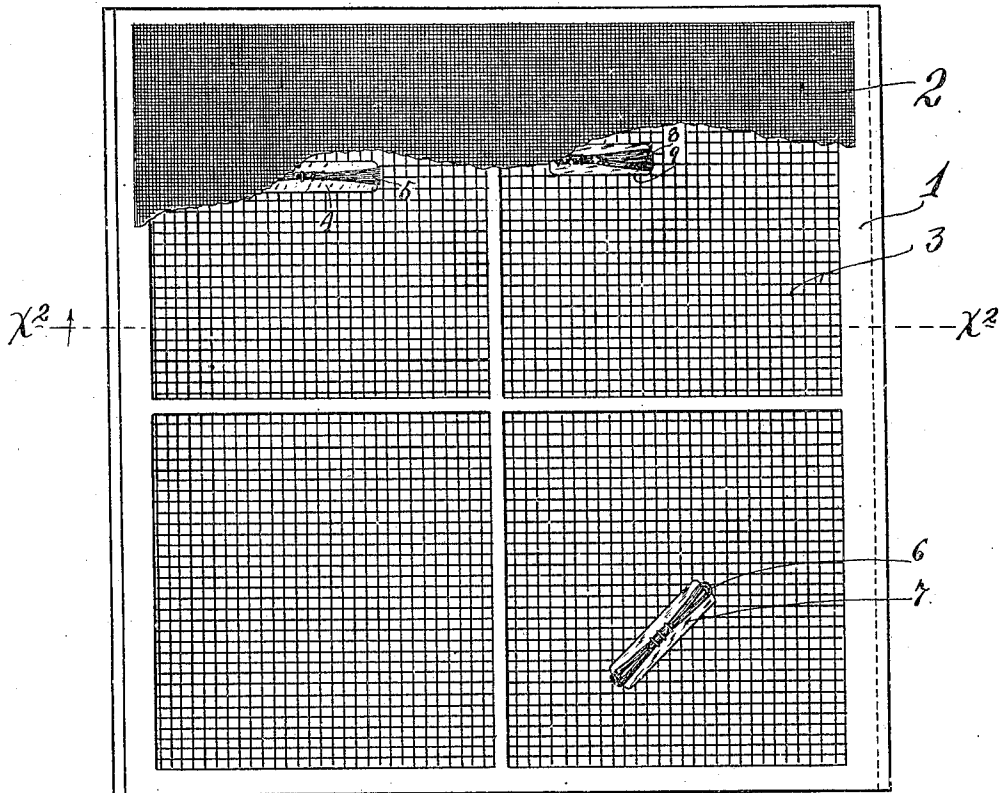


Fig. 2.

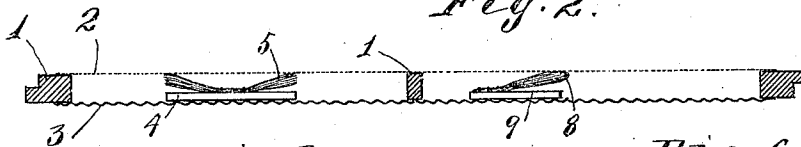


Fig. 3

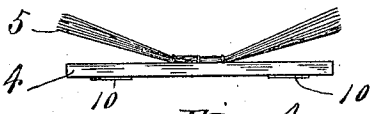


Fig. 4

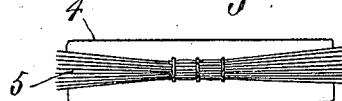


Fig. 5.

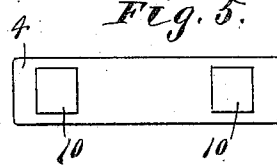


Fig. 6.

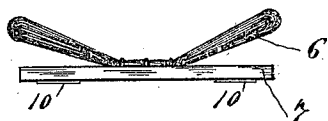


Fig. 7.



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UNITED STATES PATENT OFFICE.

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SIEVE-CLEANING DEVICE.

949,026.

Specification of Letters Patent.

Patented Feb. 15, 1910.

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To all whom it may concern:

Be it known that I, JOHN N. MCGIBBON, a citizen of the United States, residing at Sauk Center, in the county of Stearns and State of Minnesota, have invented certain new and useful Improvements in Sieve-Cleaning Devices; and I do hereby 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.

My invention has for its object to provide a simplified and improved sieve cleaning device especially adapted for use in connection with bolting cloth sieves, such as used in flour bolters and similar machinery.

To the above ends the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In sieves of the character above indicated, it is customary to place coarse wire screen below the bolting cloth, parallel therewith, and in quite close position thereto, and to support upon such underlying reticulate support loose sieve cleaning devices for action on the under surface of the bolting cloth, to keep the fine meshes of the bolting cloth clean. Usually these sieve cleaning devices have been in the form of small flat pieces of leather, wood, or similar material having vertically projecting bristles for engagement with the under surface of the bolting cloth. In practice it has been found that these vertically projecting bristles frequently will project up through the fine meshes of the bolting cloth and become practically immovable. Furthermore, the vertically projecting bristles in these devices have not hitherto been extended beyond or even to the outer edge portions of the shoe or holder and, hence, would not clean the entire surface of the bolting cloth, but would leave narrow marginal portions adjacent to the sieve frame uncleaned and clogged with flour.

My invention has for its object to remove the above objectionable features and to provide a simple and cheap cleaning device of generally increased efficiency.

Several forms of my improved device are illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a

plan view showing the frame, bolting cloth and underlying reticulate support of the flour bolting screen of the standard construction. Fig. 2 is a transverse section taken on the line $x^2 x^2$ of Fig. 1. Fig. 3 is a view in side elevation, showing one form of the improved sieve cleaner. Fig. 4 is a plan view of the cleaner shown in Fig. 3. Fig. 5 is a bottom plan view of the cleaner shown in Figs. 3 and 4. Fig. 6 is a view in side elevation, showing a slightly modified form of the cleaner; and Fig. 7 is a view in side elevation, showing still another form of my improved cleaner.

Of the parts of the sieve, the numeral 1 indicates the frame, the numeral 2 the bolting cloth and the numeral 3 the underlying reticulate support, which latter is preferably of the usual wire screen construction, of such coarse mesh that it does not in any way interfere with the precipitation of the flour that is passed through the bolting cloth.

Describing first the form of the cleaner shown in Figs. 3, 4 and 5, the numeral 4 indicates the shoe or body portion of the cleaner, the same being, as shown and preferred, of oblong form. This so-called shoe 4 is preferably constructed of leather, but may be constructed of wood or any other quite stiff or rigid material which is capable of sliding over the reticulate support 3, and of carrying a brush of the proper construction. To the central portion of the upper surface of this shoe 4, long bristles 5 are intermediately secured with their end portions projecting upward at an oblique angle to the face of said shoe. For important reasons, the ends of the bristles 5 project beyond the ends of the shoe 4 and the bristles at one end project higher above the shoe than at the other end. The former noted feature permits the bristles to engage with the entire surface of the bolting cloth, since the movement thereof will not be stopped by engagement of the shoe with the sieve frame, and the latter feature causes the bristles at one end to engage the bolting cloth with greater pressure than at the other end, when the cleaner is applied in working position on the reticulate support 3, as shown at the left in Figs. 1 and 2, so that under gyratory motion of the sieve the said cleaner will be caused to travel and to take a rotary motion.

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In the form of the device shown in Fig. 6, the bristles 6 which are intermediately secured to the shoe 7, are looped or folded at the projecting end portions of the brush 5 and are brought back and secured to the central portion of the shoe 7. The modified form of the cleaner shown in Fig. 7 is like that shown in Fig. 6 except that one end thereof is cut off. In this form of the device the bristles that make up the brush are indicated by the numeral 8 and the shoe to which they are secured is indicated by the numeral 9.

In some instances it is desirable to apply smooth metallic wearing clips 10 to the bottom of the shoe, as shown in Figs. 3 and 5.

In Fig. 1, all three forms of the cleaning device are shown as in operative position on the sieve. The form of the device best shown in Figs. 3 and 4 is best adapted for use in connection with very fine bolting cloth, while the forms of the device best shown in Figs. 6 and 7 are better adapted for use in connection with coarse bolting cloth. The folded bristles will not project through the meshes of the coarse bolting cloth.

When the cleaning devices described are applied as shown in Figs. 1 and 2 and the sieve is given the usual vibratory or gyratory motion, they will be caused to rotate and to travel over the entire surface of the underlying reticulate support and, hence, will operate upon and clean the entire surface of the bolting cloth. The bristles of the cleaning brush project at such angle to the bolting cloth that they serve in a sense as a spring to keep the shoe upon the underlying support and, hence, prevent jumping and turning over of the cleaning device. At the same time, without tendency to force their way through the meshes of the bolting cloth, the bristles of the brush are kept pressed against the under surface of the said bolting cloth.

The bolting cloth, when lightly loaded, will stand considerably higher above the underlying supporting screen than when heavily loaded. A heavy load will cause the bolting cloth to sag an eighth of an inch or more. With cleaning devices as hitherto constructed, with the bristles extending vertically, the bristles, under a light load on the cloth, will frequently not engage the cloth at all, and, when the bolting cloth is heavily loaded, the bristles will be caused to project

through the meshes of the cloth and thus lock the cleaning devices against movement, so that in both instances the cleaning devices fail to operate to clean the cloth.

With my improved cleaning device, where- in the bristles of the brush are extended at an oblique angle to the shoe, and, hence, to the bolting cloth, variations of an eighth of an inch or even a great deal more in the distance between the bolting cloth and the underlying supporting screen, simply change slightly the angle of the bristles, and the bristles automatically adapt themselves to varying sag of the bolting cloth produced by light and heavy loads, without varying perceptibly the pressure of the bristles against the under surface of the cloth. My improved cleaning devices are, therefore, operative under all conditions.

From what has been said it will be understood that the projection of the bristles of the brush at an oblique angle to the shoe and to the bolting cloth, is a highly important feature. Furthermore, so far as I know, this is a broadly new feature in sieve cleaning devices and, hence, I desire to claim the same broadly. In practice, cleaning devices of the kind above described have been found highly efficient for the purposes had in view.

What I claim is.

1. A sieve cleaning device comprising a shoe and a brush, said brush being made up of a multiplicity of bristles intermediately secured to said shoe and with the ends of said bristles projecting upward and in opposite directions at an oblique angle to said shoe and the bristles at one end of said shoe projecting higher above the shoe than at the other end, substantially as described.

2. A sieve cleaning device comprising a shoe and a brush, said brush being made up of a multiplicity of bristles intermediately secured to said shoe and with the ends of said bristles projecting upward and in opposite directions at an oblique angle to said shoe and with their free ends looped or folded the bristles at one end of said brush projecting higher above said shoe than at the other end, substantially as described.

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

JOHN N. MCGIBBON.

Witnesses:

L. R. BARTO,
G. HILLIARD.