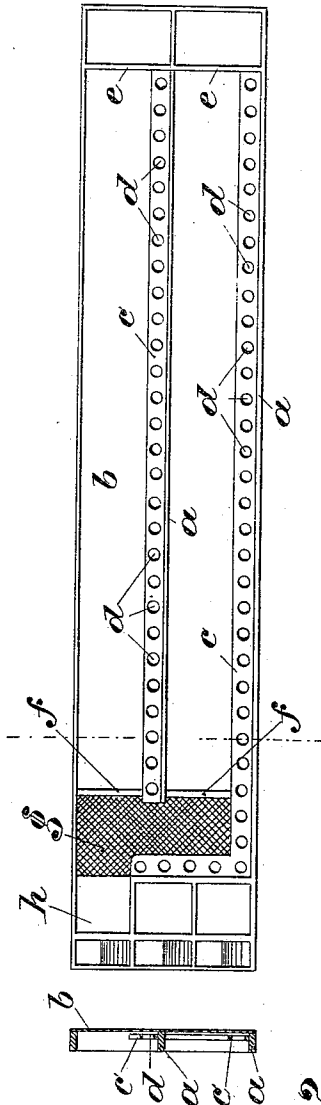


(No Model.)

A. BEHRINGER.
SIFTING APPARATUS.

No. 546,911.

Patented Sept. 24, 1895.



Witnesses:
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Inventor:
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By
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UNITED STATES PATENT OFFICE.

ANTON BEHRINGER, OF BRAUNSCHWEIG, GERMANY.

SIFTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 546,911, dated September 24, 1895.

Application filed March 30, 1895. Serial No. 543,860. (No model.) Patented in Hungary November 6, 1894, No. 1,512; in Belgium November 15, 1894, No. 112,495; in Austria November 29, 1894, No. 44/6,123; in Spain January 11, 1895, No. 16,547; in Portugal January 23, 1895, No. 1,942, and in France February 18, 1895, No. 242,676.

To all whom it may concern:

Be it known that I, ANTON BEHRINGER, engineer, a subject of the King of Bavaria, residing at Braunschweig, in the Duchy of Braunschweig and German Empire, have invented new and useful Improvements in Sifting Apparatus, (for which I have obtained Letters Patent in Austria, No. 44/6,123, dated November 29, 1894; in Hungary, No. 1,512, dated November 6, 1894; in France, No. 242,676, dated February 18, 1895; in Belgium, No. 112,495, dated November 15, 1894; in Spain, No. 16,547, dated January 11, 1895, and in Portugal, No. 1,942, dated January 23, 1895,) of which the following is a specification.

My invention relates to improvements in sifting apparatus. It is a well-known fact, based on the nature of the apparatus, that the material fed onto the bottom of a circularly-oscillating flat sieve moves after overcoming the frictional resistance without further impelling cause merely in a circular path resulting from the peculiar motion of the entire sifting apparatus, and that said material has no tendency to move onward in the direction of the length of the sieve. Endeavors have been made to produce this very necessary onward movement of the material in the channels or gutters of flat sieves by means of various peculiar devices, all of which, however, had more or less considerable disadvantages. These disadvantages consist, mainly, in the fact that the construction of the said devices entails the formation of more or less large angles in which material is caught and becomes fixed, so that it finally putrifies or spoils. Special conveyers have also been employed in the sifting-channels of the collecting-bottoms; but such conveyers are liable to breakdowns from various causes and require constant supervision.

Now the present invention relates to conveying means for effecting in an extremely simple manner the onward travel of the material in the horizontal channels of a flat sieve. The arrangement also has the advantage that the sieve-bottom is kept cleaned by reason of the peculiar manner in which the material being sifted is thrown up and down by the

conveyer, and moreover the rate of onward movement of the material being sifted can be accelerated to different extents at different places on the sieve.

My conveyer is illustrated in its application to a flat sieve in the accompanying drawings, in which—

Figure 1 is a plan view, and Fig 2 a cross-section.

The conveyer consists of bars *c*, arranged at one side *a* of each of the longitudinal channels above the sieve *b*, parallel to the sifting-surface *b*, and at a suitable distance—say, one inch—therefrom. These bars *c* are each formed with circular, rectangular, or other suitably shaped apertures *d* and operate as follows: In addition to the circularly-oscillating motion of the ground material on the sieves, the pendulating or vibrating movement of the flat sieve produced by its mode of suspension imparts to the said material an up-and-down hopping or jerky motion in a direction perpendicular to that of the circular motion. This hopping or jumping motion is partly interrupted by the bar *c*, so that the tangential motion produced by the circular motion combines with the jumping motion to form a resultant motion, which causes the particles of material being sifted situated next to the bar to execute a progressive onward jumping movement; but when material being sifted jumps through an aperture *d* it falls over the bar *c*, from which it glides off in consequence of the circular motion of the flat sieve. In this way the bar *c* scatters the material falling off it over the sifting-surface. Consequently by the use of the bar *c*, having apertures *d*, there is produced a movement of the material passing through the apertures in consecutively-connected cycloidal curves. The material to be sifted, being thus caused to fall back upon the sifting-surface, causes the said surface to vibrate or oscillate and thus effects the cleaning of the same. The material to be sifted is fed in at *e* and passes very quickly to the outlet *f*, and may thence be conducted onto a grating *g*, which allows the finer portions to fall through it and serves to guide the remainder to the outlet *h*. Ac-

2
cording as the apertures d are made larger or smaller, the speed of the onward movement of the material being sifted will be caused to vary at determined points of the flat sieve, 5
increase in the size of the apertures acting to diminish the speed of the onward movement of the material being sifted.

As will be obvious, my invention can be applied to sieves of the kind referred to having only one longitudinal sifting-channel and 10
also to sieves having more than two such channels, there being one conveying bar or device to each channel.

What I do claim as my invention, and desire 15
to secure by Letters Patent, is—

1. The combination with a circularly oscillating flat sieve, of a perforated bar arranged above and parallel to one side of the sifting surface of the sieve and fixed relative thereto, 20
substantially as described.

2. The combination with a circularly oscillating flat sieve, of a bar provided with a series of graduated perforations and arranged above and parallel to one side of the sifting surface of the sieve, substantially as described. 25

3. The combination with a circularly oscillating flat sieve having a plurality of parallel longitudinal channels, of a plurality of perforated bars, one for each channel, arranged above and parallel to one side of the sifting surface of each of said channels, substantially 30
as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ANTON BEHRINGER.

Witnesses:

JULIUS SECKEL,
AGNES KELLY TINGLE.