

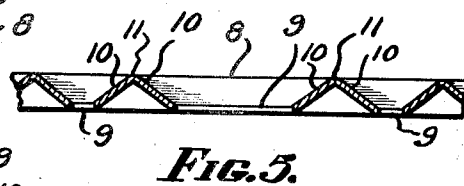
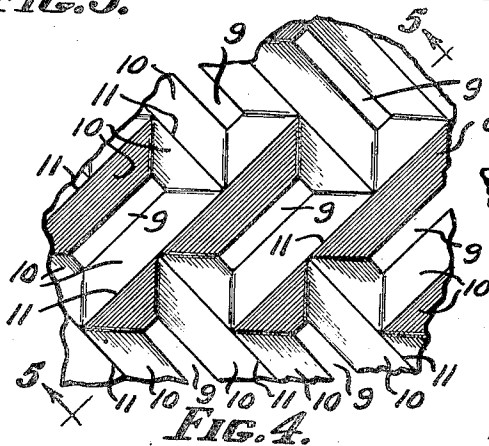
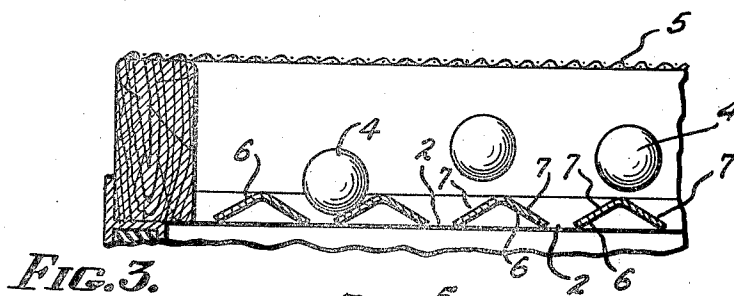
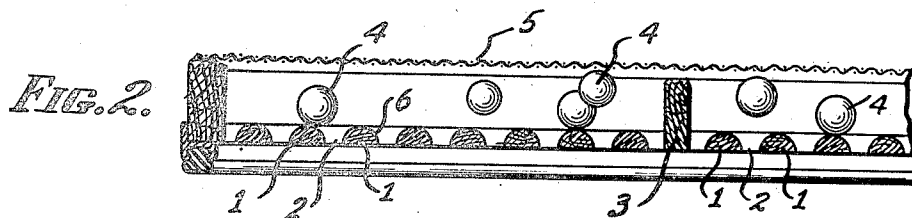
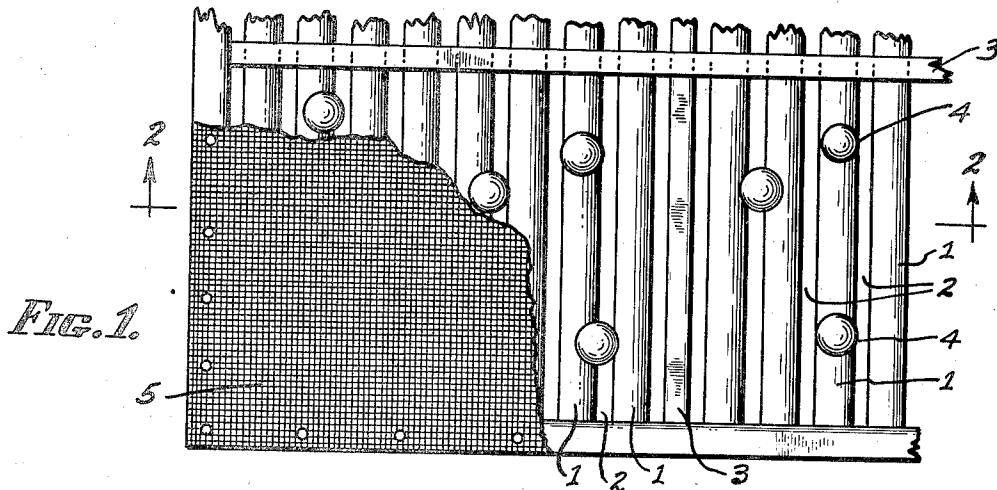
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L. SIMPSON ET AL

2,226,416

CLEANER FOR SIFTING SCREENS

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CLEANER FOR SIFTING SCREENS

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3 Claims. (Cl. 209—382)

Our invention relates to cleaners for sifting screens adapted to be used in connection with various sifting mechanisms and of the type disclosed in Patent No. 218,530, dated August 12, 1879. More specifically our invention relates to the provision of a grid under a screen for retaining balls or other devices and which are so configured as to project the balls against the lower surface of the screen when the screen is moved in the normal screening operation.

It has been the practice heretofore to provide a grid under the screen itself and which is preferably divided into compartments, each retaining a number of resilient balls which impact the lower surface of the screen and thus jar the same, and assist the material in going through the screen. The grid on which the balls rest, of course, must be apertured to permit the screenings to easily fall through the grid so as to be carried out of the screen assembly. The preferred type of resilient ball used in the art is of rubber and due to the abrading action of the material being screened quickly wears itself down to a relatively small diameter. Thus the openings in the grid must be sufficiently small to prevent reduced balls from falling through and being discharged with the screening. It is also desirable to project the balls at different portions of the undersurface of the screen so as to prevent excessive wearing of any portion of the screen due to the impact of the balls.

It is an object of our invention to provide a ball retaining grid which is so configured as to project the balls over practically the whole undersurface of the screen with equal propelling force.

It is a further object of our invention to provide a ball grid so configured that there are no flat or level surfaces substantially parallel to the screen upon which screening may settle, and thus be held back from the discharge chute of the sifting machine.

It is a further object of our invention to provide a ball grid which while having relatively small openings for the screenings to go through, at the same time presents substantial shoulders for projecting the balls against the under side of the screen.

These and other objects of our invention which will be set forth hereinafter or will be apparent to one skilled in the art upon reading these specifications, we accomplish by that certain construction and arrangement of parts of which we shall now describe an exemplary embodiment.

Reference is now made to the drawing which forms a part hereof and in which:

Figure 1 is a plan view with a portion broken away, showing our novel ball grid.

Fig. 2 is a section taken on the line 2—2 of Fig. 1.

Fig. 3 is a section of a modified form of ball grid.

Fig. 4 is a plan view of a second modification of our ball grid.

Fig. 5 is a section taken on the line 5—5 of Fig. 4.

Briefly in the practice of our invention we provide a ball grid having numerous relatively small apertures adjoined by projecting shoulders of a greater width than the apertures. The apertures are relatively small in comparison to the diameter of the balls which we prefer to use. As exemplary but not as a limitation, we prefer to use balls of a diameter of about $1\frac{3}{8}$ inches wherein the apertures of the grid are about $\frac{5}{8}$ inch, while the solid portion of the grid between apertures is approximately $1\frac{1}{8}$ inches. The top or peak of the shoulder is approximately $\frac{3}{8}$ inch and we find that by this ratio of sizes we obtain a relatively vigorous throw of the balls against the under portion of the screen which is normally placed about $2\frac{1}{2}$ inches from the bottom of the grid. The surface of the grid portion comprises shoulders or hills without any flat portion on its upper surface.

Referring to the drawing, we provide a grid composed of parallel half round bars 1, spaced apart as at 2, to form apertures of a less diameter than the diameter of the bars. The grid is divided into compartments by the usual fence or obstruction 3. The balls 4 are placed upon our grid which is usually spaced from the screen 5 a sufficient distance to give ample freedom of movement. The arcuate periphery or shoulder 6 of the bars 1 contacts the balls 4 when the screener is jolted, and thus projects the rubber balls 4 against the screen 5. We prefer to use rubber balls 4 of a substantially greater diameter than our apertures 2.

It may be preferable to use angle bars 6 in place of the half round bars 1 as we have shown in Fig. 3. In this case the angle bars 6 are positioned with the angle portion upwardly and towards the screen 5 and the legs 7 projecting downwardly. The overall width of the bars 6 is greater than the aperture 2 between them. By this construction as well as the construction shown in Fig. 2, there is no flat surface substantially parallel with the screen 5 for retarding or

holding the screened material after it has gone through the screen 5 since it permits the screenings to slide off the legs 7 of the angle bars and through the apertures 2.

5 In another modification of our grid we provide an indented sheet 8 having apertures 9. The portion of the sheet between the apertures is struck up to form hills or angles 10 with the peaks 11 between the apertures. The distance
10 between the apertures is relatively greater than the width of the apertures themselves. By this construction it is apparent that there is no flat surface parallel with the screen and that the struck up portions 10 and 11 contact the balls 4
15 and throw them against the under surface of the screen 5.

It is to be understood that different forms of our preferred form may be made without departing from the spirit of our invention.

20 Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. A ball retaining element for use with sifting screens comprising a perforate surface which is continuous except for apertures therein, said apertures being in at least one direction less than about half the diameter of the balls as initially 5 installed thereon; and the surface between the apertures having no level portions and presenting a series of apices tapering upwardly between the apertures, said apices spaced apart less than twice the diameter of the said balls and having 10 a height less than the diameter of said balls.

2. The structure of claim 1 wherein said surface is formed by parallel spaced bars.

3. The structure of claim 1 wherein said surface is formed of a continuous sheet of indented 15 material having peaked hills and valleys, with the apertures at the bottoms of the valleys.

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