

(No Model.)

G. W. CROSS.
SCREEN.

No. 523,515.

Patented July 24, 1894.

Fig. 1.

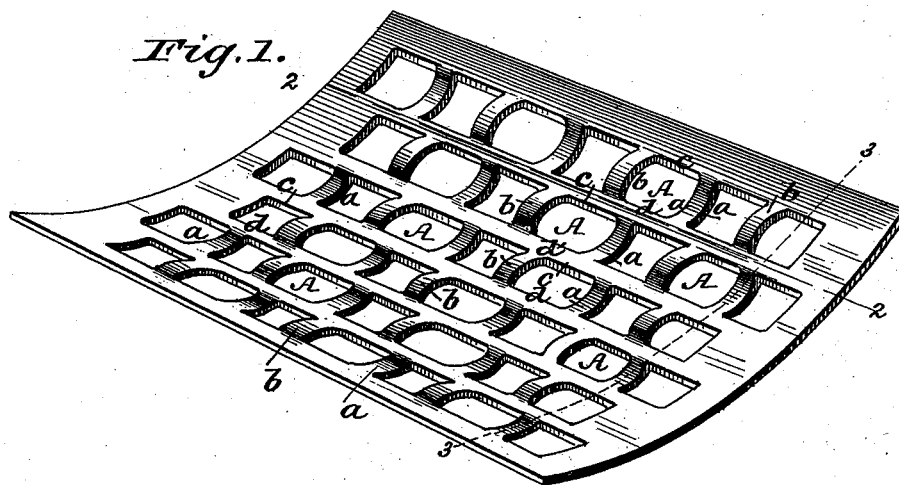


Fig. 2.

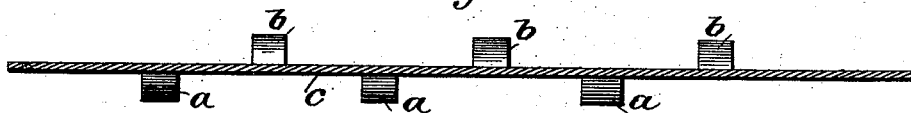


Fig. 3.

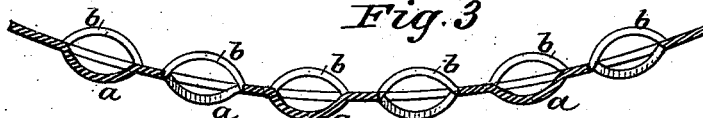
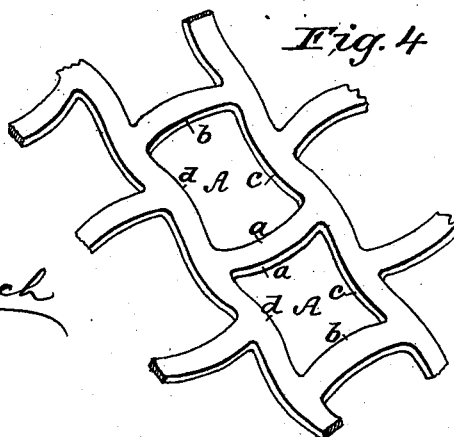


Fig. 4.



WITNESSES:

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GEORGE W. CROSS, OF PITTSBURGH, PENNSYLVANIA.

SCREEN.

SPECIFICATION forming part of Letters Patent No. 523,515, dated July 24, 1894.

Application filed March 26, 1894. Serial No. 505,148. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. CROSS, of Pittston, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Improvement in Screens, of which the following is a specification.

My invention relates to screens for screening coal, gravel, ores, &c., which are formed by punching interstices in stout sheet metal, as a substitute for the meshes existing in screens of woven wire, which are more commonly used. A woven wire screen gives an effective screening action, but it wears out rapidly, and the wires are not strongly stayed at the points where they cross. Screens punched of heavy sheet metal, while possessing a greater longevity, are by reason of their smooth surfaces not so effective in screening, because they allow the coal to slide or scour, instead of tumbling which is necessary to the best screening action. In my previous Patent No. 513,890, dated January 30, 1894, I have sought to secure the combined advantages of the longevity of the punched screen, with a better tumbling and screening effect of the coal, and to that end rectangular interstices were punched in a plate, in which two of the parallel sides of any interstice were made convex, and the other two parallel sides concave, on the working face.

My present invention follows the same general principle of securing a better tumbling effect in a punched sheet metal screen, but it constructs the screen with interstices, any one of which has one side of its two parallel sides convex, and the other side of its two parallel sides concave, *i. e.*, the parallel sides are oppositely bent; and also in arranging these interstices in staggered or alternating series, *i. e.*, with the interstice of one series opposite the separating bar of two interstices in the next row, all as will be hereinafter more fully described.

Figure 1 is a perspective view of one of the plates or sections of my improved screen. Fig. 2 is a section through the same on line 2—2. Fig. 3 is a section at right angles on the line 3—3, and Fig. 4 is a detail showing a modification.

These plates may be made either in curved or perfectly flat sections according to whether they are to be made up in cylindrical form, or flat inclined chutes. The plates are of

stout sheet metal, from one thirty-second to three-eighths of an inch thick, and the interstices are substantially rectangular, being only slightly rounded at the corners to prevent cracks in punching, and to give greater strength to the web of metal. Each interstice A has one side *a* of its two parallel sides *a* and *b* bent downwardly or concave with reference to the working face, and the other side *b* of its two parallel faces *a* and *b* bent up, or convex with reference to the working face. The other two sides *c* and *d* of each interstice are, as shown in Figs. 1, 2, and 3, perfectly straight and parallel, *i. e.*, they are neither concave nor convex. They may, however, be alternately concave and convex on the opposite sides of any interstice as shown in Fig. 4. In punching the rows of interstices also they are so arranged that any one interstice is opposite to the separating bar between two interstices of the next row, so as to give an alternated or staggered relation for the interstices.

From the above description it will be seen that the screen sections are integral, or made of a single piece of metal, and, while very strong and enduring, give a most effective screening action.

Instead of punching the screen from sheet metal, as I prefer to do, they may be cast if desired to give good results.

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

1. A metal screen having an integral web portion with rectangular interstices, the two parallel sides of any one interstice being, the one concave, and the other convex with relation to the working face, substantially as shown and described.

2. A metal screen having an integral web portion with rectangular interstices, the two parallel sides of any one interstice being the one concave and the other convex with relation to the working face, and the interstices of one row being opposite to the connecting bars or webs of the adjacent rows substantially as shown and described.

GEORGE W. CROSS.

Witnesses:

EDW. W. BYRN,
SOLON C. KEMON.