

(No Model.)

2 Sheets—Sheet 1.

G. W. CROSS.
SCREEN.

No. 541,595.

Patented June 25, 1895.

Fig 1

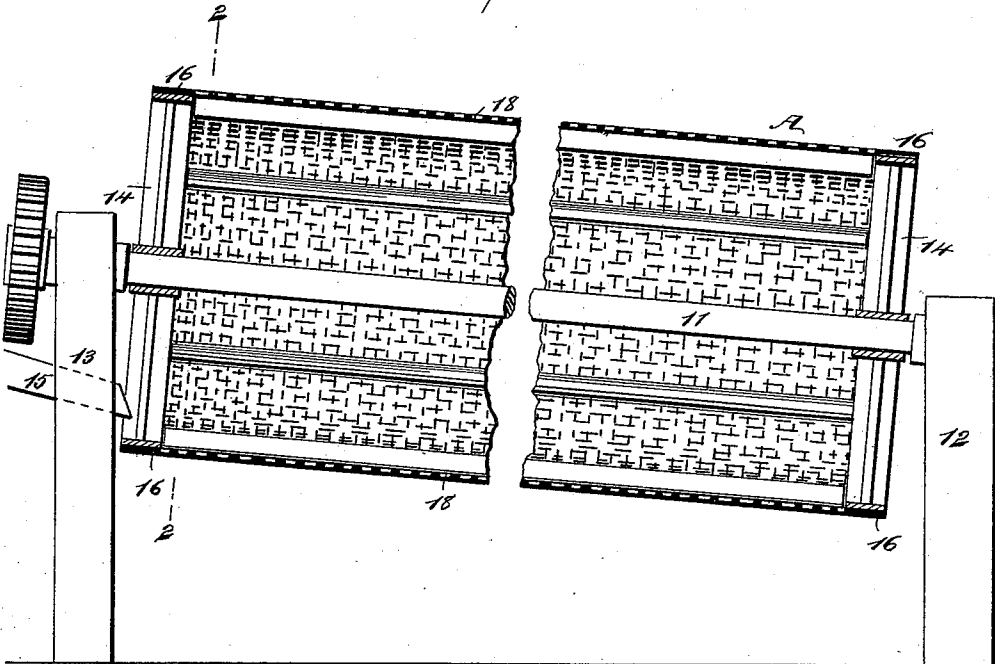


Fig 2

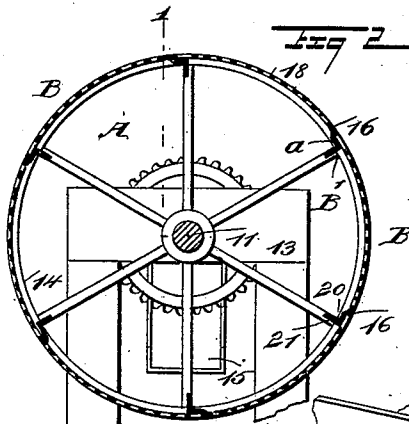
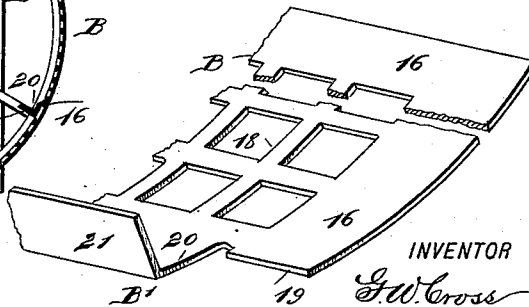


Fig 3



WITNESSES:

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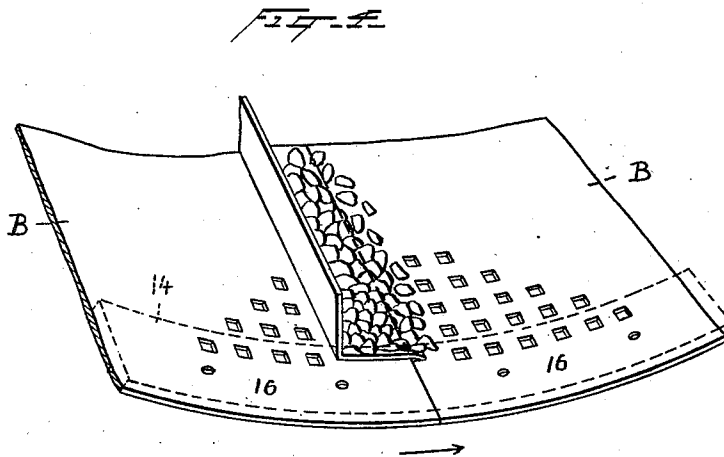
(No Model.)

2 Sheets—Sheet 2.

G. W. CROSS.
SCREEN.

No. 541,595.

Patented June 25, 1895.



Witnesses
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John R. Taylor.

Inventor
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UNITED STATES PATENT OFFICE.

GEORGE W. CROSS, OF PITTSBURGH, PENNSYLVANIA.

SCREEN.

SPECIFICATION forming part of Letters Patent No. 541,595, dated June 25, 1895.

Application filed March 8, 1894. Serial No. 502,870. (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 Revolving Screens, of which the following is a specification.

My invention relates more particularly to revolving screens such as are employed for the screening of coal; and its object is to produce a screen which will be provided with means for tumbling the coal as the screen rotates, and will be well adapted for all character of work, including the screening of wet coal, in which the acid of the mine water quickly corrodes the rivets or bolts which have heretofore usually been employed to secure the edges of the screen segments together and to the protector and tumbler plates which have been placed over the seams between the screen segments.

In screens of the character alluded to, the protector and tumbler plates soon become loose and not only fail to serve the purpose for which they are intended, but permit the opening of the seams between the screen segments where the longitudinal edges abut, and the escape of the fine coal therethrough.

In carrying out my invention I construct the screen segments of punched sheet metal plates, which, as is well known, possess some degree of resiliency, and overlap the adjoining imperforate margins of such plates, except at their ends, where they are supported upon the spider heads or bands the overlapping longitudinal margin on the inner side of the seam being offset and turned inwardly. This inwardly turned edge not only stiffens the screen segment, but also acts as a tumbler bar to resist the sliding motion of the coal within the screen, and to tumble the coal so as to produce effective screening. The screen segments are secured at their ends to circular spider heads or bands by bolts, as usual, but no bolts or rivets are employed to connect the overlapping edges between these heads or bands.

When the segments are secured in position, the lap of the edge of one over the edge of the other prevents the coal from escaping through the joint. As an additional safeguard, however, the screen is rotated so that the angle formed by the inwardly turned edge at each

overlapping seam will take the strain caused by the weight of the coal, the effect of which is that owing to the resiliency of the sheet metal plates the edge of the adjacent segment is protected and the flanged portion of the overlapping edge is made to bind more closely upon the said adjacent segment. Thus my improved screen is not only more effective in action, but is cheaper and more durable in construction.

In the accompanying drawings, forming a part hereof, Figure 1 is a longitudinal section of the screen on line 1 1 of Fig. 2. Fig. 2 is a transverse section on line 2 2 of Fig. 1. Fig. 3 is a detail perspective view of a portion of one screen-segment, and Fig. 4 is a similar view showing the joint between two screen-segments.

The screen A is usually constructed of a number of sections, each section being made up of several curved screen segments B which are supported at their ends by circular spider heads or bands 14. These circular spider heads or bands, are mounted upon a shaft or other support 11, rotating in bulk-heads or fixed bearings, 12 and 13 and arranged in an inclined position, so that the coal which is delivered at the upper end by a chute 15, travels down the screen as it rotates, and is discharged from the lower end of the screen.

The screen segments B are made of sheet metal plates, punched to provide proper perforations 18 and having an imperforate margin 16.

According to my improvement the adjacent longitudinal edges of the screen segments B are overlapped, the trailing longitudinal edge of each segment being on the inner side of the joint. The body of each screen segment on its trailing side is provided with an extension B' integral with the segment, which extension is offset inwardly from the body of the plate, and is provided with an outwardly turned edge 21 forming an angle or L-shape with the body 20 of the extension. The extension B' stops short of the imperforate margin 16 at the ends of the screen segments, such ends being provided with shoulders 19, which abut against the straight leading side edge of the adjoining screen segment on the spider rim or band as shown in Fig. 4. The screen segments are secured to the circular spider heads

or bands 14 by their end margins as shown in Fig. 4, no bolts or rivets being used to secure the overlapping longitudinal edges of the screen segments between the said heads or bands.

In operation the direction of rotation of the screens is as indicated by the arrow in Fig. 4. The angle produced by the parts 20 and 21 of the extension B' forms a pocket *a* which receives the coal in the rotation of the screen, and the pressure exerted on that angle forces the extension B' outwardly, thus guarding additionally against the escape of the small coal through the joint. The absence of bolts or rivets to connect the overlapping edges between the spider heads obviates the difficulty arising from the corroding of such rivets or bolts by the acid of the mine water.

What I claim is—

1. In a rotating screen, the combination of perforated screen segments, more or less resilient, and having imperforate margins, supported at their ends and overlapping but unsecured along their longitudinal edges, the longitudinal edge of the inner plate at each

joint being turned inwardly, substantially as set forth.

2. In a rotating screen, the combination of perforated screen segments, more or less resilient, and having imperforate margins, supported at their ends, their longitudinal edges abutting at the points of support and overlapping but unsecured between the points of support, the edge of the inner plate at each joint being turned inwardly, and such inwardly turned edge forming a trailing pocket for tumbling the coal, substantially as set forth.

3. The screen segment B, of sheet metal having a perforated body and an imperforate margin 16, one side of the longitudinal edge of the plate being provided with an angular offset extension B' formed integral with the body of the plate, and with shoulders 19 at the ends of this side of the plate, substantially as set forth.

GEORGE W. CROSS.

Witnesses:

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