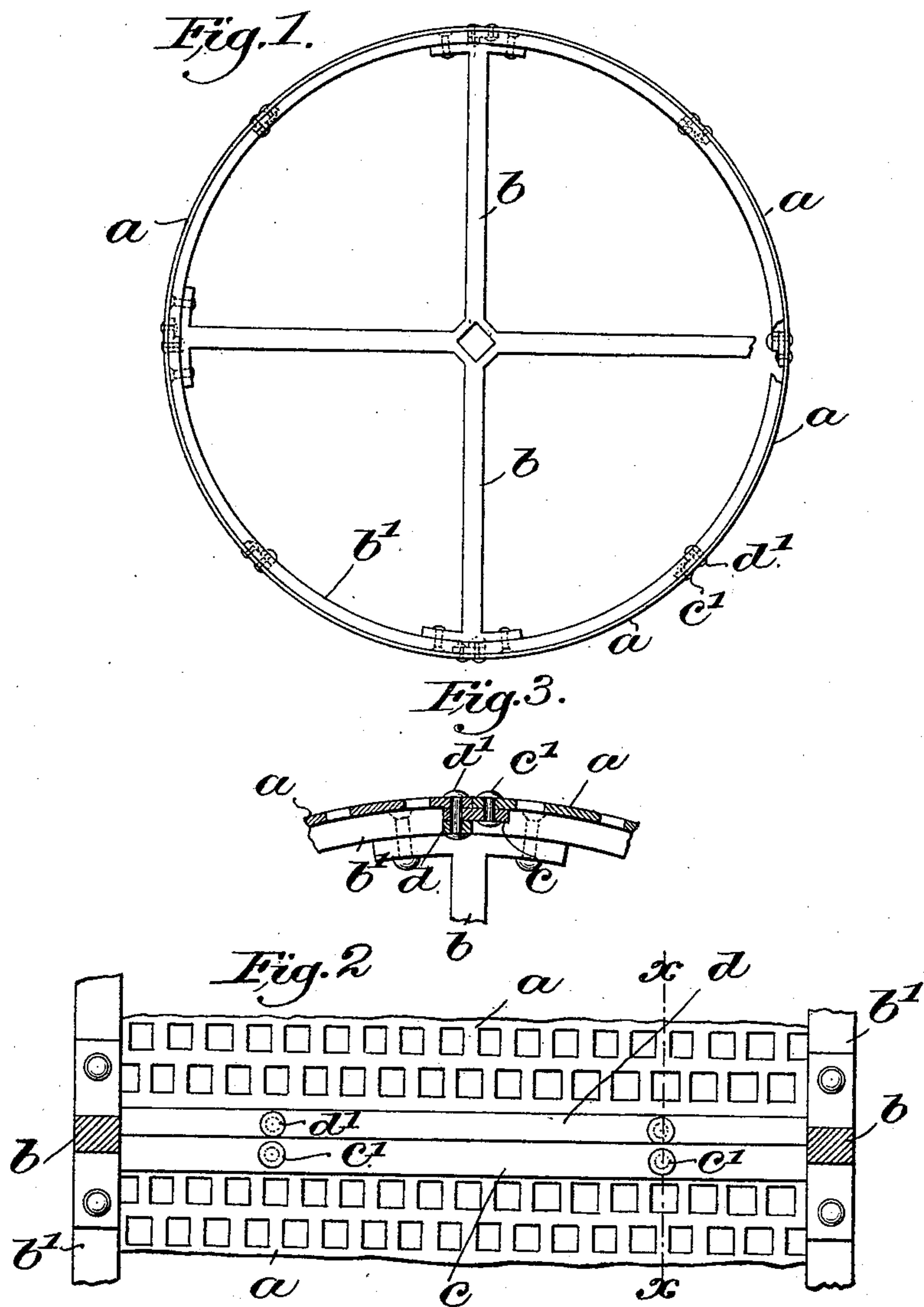


(No Model.)

D. E. PHILLIPS.  
REVOLUBLE SCREEN.

No. 500,508.

Patented June 27, 1893.



Witnesses.  
Louis N. Souell.  
Edward F. Allen.

Inventor.  
David Evans Phillips  
by Crosby & Gregory, attys.

# UNITED STATES PATENT OFFICE.

DAVID E. PHILLIPS, OF MAHANOEY CITY, PENNSYLVANIA, ASSIGNOR TO THE CLINTON WIRE CLOTH COMPANY, OF CLINTON, MASSACHUSETTS.

## REVOLUBLE SCREEN.

SPECIFICATION forming part of Letters Patent No. 500,508, dated June 27, 1893.

Application filed January 21, 1893. Serial No. 459,053. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID E. PHILLIPS, of Mahanoy City, county of Schuylkill, State of Pennsylvania, have invented an Improvement in Revoluble Screens, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

It is now the common practice to screen and sort coal in large quantities by means of circular revolving screens, formed generally, when the screens are of large diameter, of a series of perforated metallic segments, said segments being bolted to a suitable frame-work, the perforations in the screen taken as a whole increasing in size from the inlet to the outlet end in order that coal may be properly screened, the smaller sizes passing through the meshes nearest the inlet end and gradually increasing until the exit is reached. The screens are, as a general thing, large, and the weight of the coal being screened is so great that every provision must be made for increasing the strength and rigidity of the screen. It is also necessary in such screens to provide tumblers upon the interior thereof in order to thoroughly separate or turn over the mass of coal in its passage through the screen, and it is usual to secure the tumblers to the segments. In some cases pieces of wood are bolted to the segments, the bolts extending through some of the perforations, but that is objectionable as the tumblers cover in the aggregate a large number of perforations. Angle irons have also been bolted to the inside of the segments, but they are open to the same objection. It is absolutely necessary to provide tumblers, otherwise the large pieces of coal form in a layer on the bottom next to the segments, the smaller pieces forming on the top, and in the revolution of the screen the lower layer of coal slides over and covers the perforations and prevents the passage of the finer coal therethrough, so that the coal is improperly screened, a large amount of the small coal being carried on and discharged through the larger meshes.

Another objectionable feature in the screens now in common use, is the sagging or separating of the segments at the joints due to the weight of the coal, this sagging increas-

ing with use, and even when the segments are lap-jointed and bolted together the bolts are soon worked loose, and the efficiency of the screen greatly diminished.

This invention has for its object the production of a revoluble screen which shall be free from the foregoing objections and which shall possess increased strength as well as secure better results.

Figure 1, of the drawings represents an end view of a circular screen, partly broken out, with my invention applied thereto. Fig. 2, is a detail enlarged, of portions of two laterally adjacent segments in one section of a screen; and Fig. 3, is a section thereof on the line  $x-x$ , Fig. 2.

As herein represented a series of curved segments  $a$  are supported by a spider having arms  $b$  and a rim  $b'$ , the number of said spiders varying with the length of the screen, the segments being bolted or otherwise secured to the rim  $b'$  in usual manner. The segments are herein shown as butt jointed, and upon the inner side thereof there is shown a series of plates  $c$  secured to the imperforate abutting edges of the segments by suitable bolts or rivets  $c'$ ,  $d'$ , the said plates, as shown in Fig. 2, extending along the longitudinal edges of the segments and covering the joints. In the operation of the screen these protector plates receive the weight of the coal at the joints and act to firmly bind the segments together at such joints, so that the longitudinal joints between the segments which have heretofore been the weakest part of a screen, are rendered as strong as any other part.

In order to provide tumblers which shall not cover any of the perforations of the segments, preferably metallic strips  $d$  are secured to the plates  $c$  by bolts or rivets, and as herein shown, the bolts or rivets  $d'$  are made long enough to extend through the said strips to secure them firmly in place. These strips form a series of inwardly extended projections along the protector plates, and in the revolution of the screen they engage and carry up along the side of the screen the under layer of coal, thus turning it over and discharging it so that the meshes are more fully uncovered. By this arrangement the screen is



strengthened and tumblers are provided at little cost and with the addition of few parts.

It is obvious that any particular tumbler, or any cover plate when worn out may be readily and quickly replaced. If desired, the tumblers might be welded to the protector plates and form an integral part thereof.

By the construction herein shown and described, the segments may be abutted together making a perfectly cylindrical screen, the segments tending to hold each other in place and every perforation in the screen is entirely unobstructed.

I claim—

1. In a revoluble screen, a series of screen segments, combined with a flat protector-plate secured to and to connect the contiguous longitudinal edges of adjacent segments and covering the joints between them, and an in-

wardly extended projection on said plate to form a tumbler, substantially as described.

2. In a revoluble screen, a series of screen segments having imperforate edge portions, and end supports for said segments, combined with a series of flat protector plates each secured to the imperforate edge portions of and to cover the abutting longitudinal edges of adjacent segments, and inturned projections extended along and secured to each plate to form a series of tumblers for the screen, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID E. PHILLIPS.

Witnesses:

DANL. L. MOLL.

JOHN W. PHILLIPS.