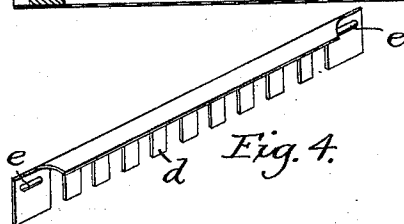
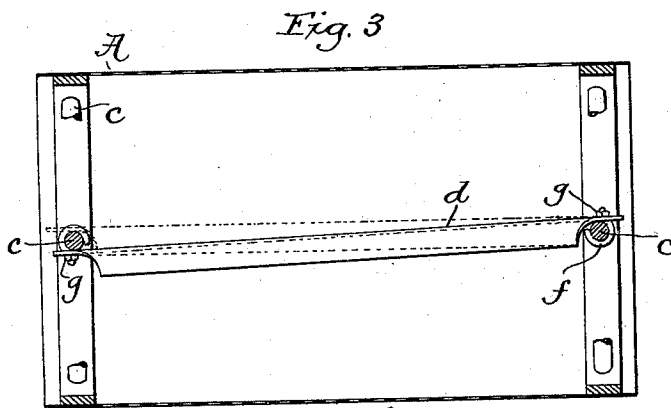
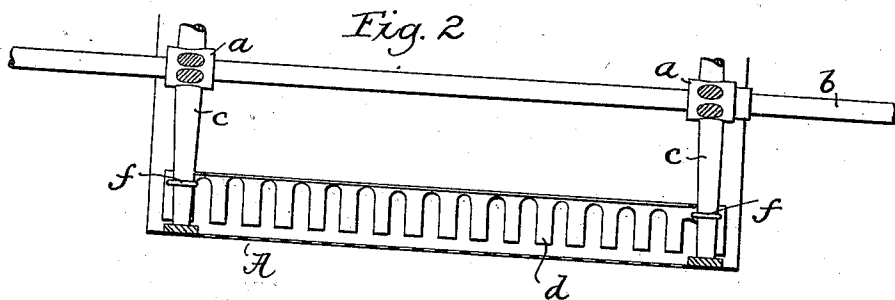
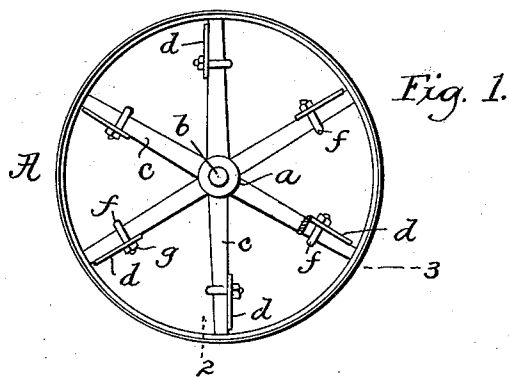


(No Model.)

C. LAW.
REVOLVING SCREEN.

No. 561,595.

Patented June 9, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES LAW, OF PITTSBURGH, PENNSYLVANIA.

REVOLVING SCREEN.

SPECIFICATION forming part of Letters Patent No. 561,595, dated June 9, 1896.

Application filed June 14, 1894. Serial No. 514,627. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LAW, a citizen of the United States of America, residing at Pittston, county of Luzerne, State of Pennsylvania, have invented certain new and useful Improvements in Revolving Screens, of which the following is a specification.

This invention relates generally to revolving screens, and more particularly to a means of modifying the flow or passage along the screen of the material being screened.

It has been found in the practical use of revolving screens that the material being screened usually collects in a mass near the lowest part of the screen and passes outward improperly screened or sized because of the lack of the required amount of agitation to bring all the particles of the material against the screening-surface, and also because in some cases it passes outward too quickly and in other cases in an attempt to prevent the too rapid passage the material is unduly retarded.

The object of the present invention is to provide exceedingly simple and cheap means by which the proper screening of the material is insured and by which the speed of the passage of the material through the screen may be controlled. Its further object is to provide means adapted to these purposes which may be easily and readily applied to existing screens without requiring any change in their structure or their dismantling; and to these ends the improvements consist in the novel constructions and arrangements of parts hereinafter fully set forth.

The accompanying drawings illustrate a practical embodiment of the invention, in which—

Figure 1 is an end view of a cylindrical and rotary screen provided with the invention. Fig. 2 is a horizontal section of the same, taken on the line 2 2 of Fig. 1. Fig. 3 is a similar section taken on the line 3 3 of Fig. 1, showing the improvement applied in two different positions by full and dotted lines. Fig. 4 is a perspective view of the improvement removed from the screen.

The improvement may be applied to any form of revolving screen A, whether it be made up of perforated screen-plates or wire-netting, corrugated screen-plates, or other-

wise, and whether the screen be one already in use or entirely new. The screening-surface is usually supported by a spider consisting of a hub *a*, secured to a longitudinal shaft *b*, with a number (six are shown) of radial arms or spokes *c* extending from the hub and secured to the screening-surface, as in Fig. 1.

The improvement consists of a toothed or rake-shaped bar *d*, of a length adapted to extend longitudinally of the screen and be connected to similar spokes *c* of distant spiders carrying the screen. In the preferred form of the toothed bar *d* it is made of sheet metal of L or angle shape in cross-section, one web of the L of greater depth than the other web, the greater depth web being cut to form the teeth and the other web standing at an angle to the toothed portion, serving to stiffen the bar and prevent the material being operated upon bending it out of shape or disturbing its position.

At each end of the bar more or less of the stiffening-web is cut away, as seen in Fig. 4, to enable the toothed portion to lie against the spoke, the stiffening-web thus extending between the two distant spokes and acting as a brace therefor at those points. To connect the toothed bar *d* to the spokes, the bar near its ends is formed with the holes or slots *e* arranged to receive the ends of hook-shaped bolts *f*, the hook embracing the spoke *c* and the end of the bolt having a securing-nut *g*, thus rigidly and at the same time removably and adjustably connecting the toothed bar to the screen, so that in the latter case its position with respect to the screening-surface may be regulated according to the size of the material being screened.

In some instances the toothed bar *d* will be connected to the spokes *c* in a line parallel to the longitudinal axis of the screen, as indicated by dotted lines in Fig. 2, in which case the material which, owing to its weight, usually accumulates in mass near the lowermost portion of the screen will during the revolutions of the screen be repeatedly agitated by the passage therethrough of the toothed bar, and at the same time the toothed bar will act to carry more or less of the material upward over the working face of the screen to a distance approximating ninety degrees of the screen circumference, so that

the tendency of the material to pack is prevented and all its pieces or particles are brought in a loose manner against the screen-surface, causing it to be thoroughly sized in its passage through the screen. In other instances it may be necessary, owing to the kind of material being screened or to the pitch of the screen being used, to retard its movement through the screen. In such case the toothed bar *d* will be arranged at an angle or inclined to the longitudinal axis of the screen, as indicated by full lines in Fig. 2, one end of the bar being secured to the forward side of one spoke and the other end to the rear side of the other spoke, so that during the revolutions of the screen and the movement of the toothed bar through the material being screened the material, while being lifted by the bar, will be thrown or guided backwardly repeatedly, and thus retard its passage and delay its final delivery from the screen. In still other instances the incline of the toothed bar may be reversed, or, in other words, inclined in the direction of movement of the material through the screen, so as to aid its passage through and final delivery from the screen.

It is obvious that there may be as many toothed bars employed as there are spokes, and I have shown six of such bars; but in some instances only one or two such bars may be all that will be required.

It will be noticed that the stiffening-web of the toothed bar is so positioned as to extend rearwardly from the front or working face of the toothed portion, so that it never acts to retain any material on the bar to finally drop it vertically onto the bottom of the screen, which with some material would be exceedingly objectionable. In practice the toothed bar will be secured to the spokes with the

ends of teeth out of contact with and a short distance from the screen-surface. The teeth of the bar also are formed the entire width of the toothed portion, the stiffening-web forming a sustaining and carrying back of the bar proper, so that the entire active face of the bar is toothed and only a narrow web is left, which can form only a very limited resting-place for the material, and by which it is liable to be carried bodily onward, in contradistinction to a simple raking action on the material, which is especially desirable and is accomplished by this improvement.

What is claimed is—

1. The herein-described toothed bar of angle shape in cross-section one web of the bar being toothed and the other web forming the back and stiffening portion of the bar and having holes or slots in its ends and hook-shaped bolts embracing the screen-spokes for securing the bar to the arms or spokes of a revoluble screen.

2. The combination with a revoluble screen and its carrying-spokes, of a longitudinally-arranged toothed bar extending longitudinally within the screen and having its ends independently adjustable radially of the screen with the teeth projecting toward the screen-surface, as set forth.

3. The combination with a revoluble screen and its carrying-spokes, of a longitudinally-arranged toothed bar extending between distant spokes and adjustably secured to said spokes to vary the position or pitch of the bar, as set forth.

In witness whereof I have hereunto signed my name in the presence of two witnesses.

CHARLES LAW.

Witnesses:

GEO. H. GRAHAM,

E. L. TODD.