(No Model.) 2 Sheets—Sheet 1.

G. A. TRUE.

SAND SCREEN.

No. 509,706. Patented Nov. 28, 1893.

Fig. 1.

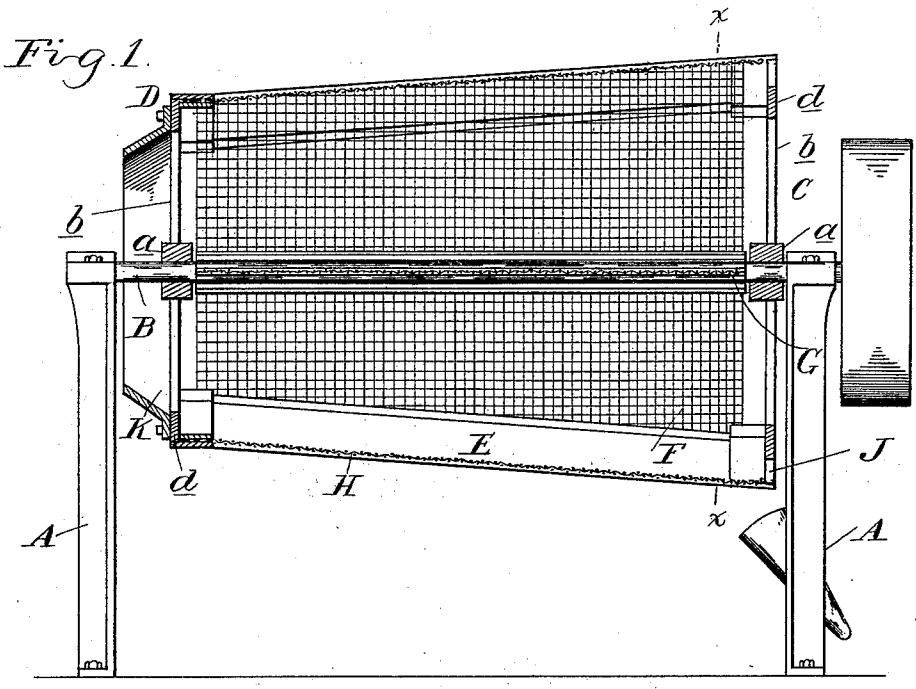
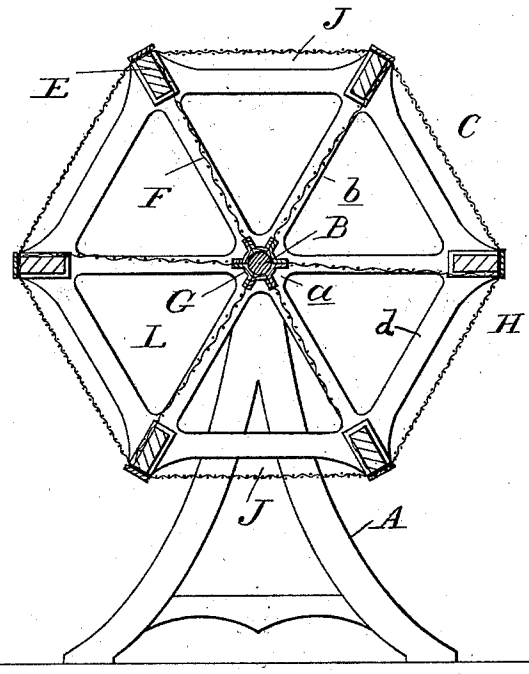


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

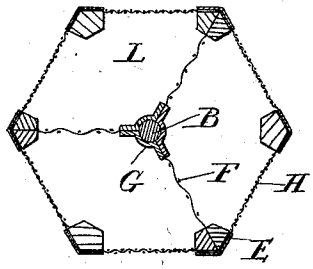


Fig. 4.

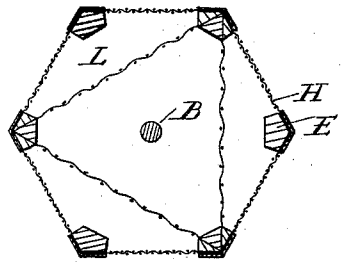


Fig. 6.

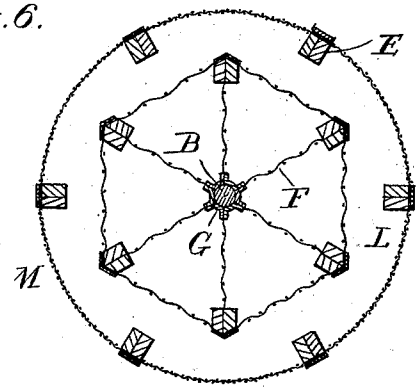
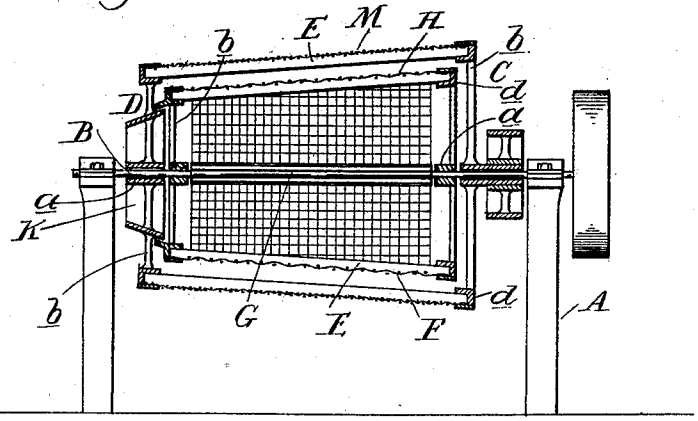


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE ALBERT TRUE, OF DETROIT, MICHIGAN.

SAND-SCREEN.

SPECIFICATION forming part of Letters Patent No. 509,706, dated November 28, 1893.

Application filed March 16, 1893. Serial No. 466,207. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ALBERT TRUE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Sand-Screens, of which the following is a specification, reference being had therein to the accompanying drawings.

This relates to a new and useful improvement in screens and it consists in the construction and arrangement of parts hereinafter described and definitely pointed out in the claims.

In the drawings, Figure 1 is a vertical, central, longitudinal section through my improved screen. Fig. 2 is a cross section thereof, on line *x x*. Figs. 3 and 4 are cross sections showing modifications in the arrangement of the screen partitions. Fig. 5 is a longitudinal section through another modification. Fig. 6 is a cross section of Fig. 5.

—A— are two supporting standards adapted to be secured to a suitable base or to the floor. These standards at the top are provided with suitable boxes in which is journaled a shaft —B—. Upon this shaft at opposite ends and within the standard —A— are secured the heads —C— and —D— of different diameter, each head consisting of a hub —*a*—, radial arms —*b*— and an outer rim —*d*—. These heads are preferably hexagonal or other similar polygonal shape, as shown in Fig. 2, the arms radiating to the angles. The two heads are connected preferably at the apex of each angle of the polygon by the cross-bars —E— preferably of wood. From these cross-bars to the central shaft are arranged radial screen partitions —F— which are clamped upon the shaft by means of the clamping plates G, having flanges arranged in line with the screens, as shown in Fig. 2., the flanges of the adjoining plates clamping the screens between them and forming a box protecting the shaft. The partition screens —F— are preferably of coarse mesh.

—H— is an inclosing screen passing around the outside of the entire drum and secured preferably to each of the cross-bars in any suitable manner. The rim —*d*— of the head —C— is provided between the arms —*b*— with cut away portions forming between the outer face of the ring and the inclosing screen —H— a passage way —J—.

—K— is a hood secured to the head —D— and through which the sand is fed into the chambers —L— formed by the partition screens and the covering screens. The shaft —B— being arranged horizontally, the tapering structure of the screen will cause the lower point thereof to incline from the inlet to the outlet, or from the smaller end to the larger end, sand being fed in through the hood —K— and into the various chambers —L—. Motion being communicated to the shaft —B— will rotate the screen and the sand in each apartment will be caused to slide over, first, the incasing screen —H—, next one of the partition screens toward the center and then from the center outwardly from the other partition screen, thoroughly breaking up the larger particles or lumps of sand, all the fine pieces passing out through the fine inclosing screen —H—, while the larger particles, such as pebbles, &c., larger than the mesh of the screen —H— will find exit finally through the discharge apertures —J— at the large end of the screen.

The arrangement of the partition screens can be varied, as shown in Figs. 2, 3 and 4, and if desired, substantially such a screen as shown in Fig. 2 may be inclosed in an outer screen —M—, as shown in Fig. 6, and the two screens be revolved in opposite directions. This will give the best possible results, thoroughly screening the sand from all lumps, pebbles or other pieces of improper size, besides thoroughly breaking up lumps caused by freezing and wetting thereby utilizing all of the good material.

What I claim as my invention is—

1. In a sand screen, the combination with a horizontal shaft, of an open ended tapering screen on the shaft consisting of a series of radial partition screens and a surrounding screen of smaller mesh than the partitions, clamps on the shaft for securing the inner edges of the partitions, and a hood at the small end of the screen, substantially as described.

2. In a revolving sand screen, the combination of a shaft, heads secured thereon with radial spokes, bars connecting the ends of the spokes, a screen secured around the frame thus formed, radial screen partitions secured at their outer edges to the bars, and ribbed clamping plates around the shaft securing their inner edges, and inlet and discharge apertures at opposite ends, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE ALBERT TRUE.

Witnesses:
F. A. SMITH,
FRED. CHRISTIE.