

No. 832,961.

PATENTED OCT. 9, 1906.

L. ELKUS.
COMBINED SAND DRIER AND SCREEN.
APPLICATION FILED MAY 17, 1906.

Fig-1-

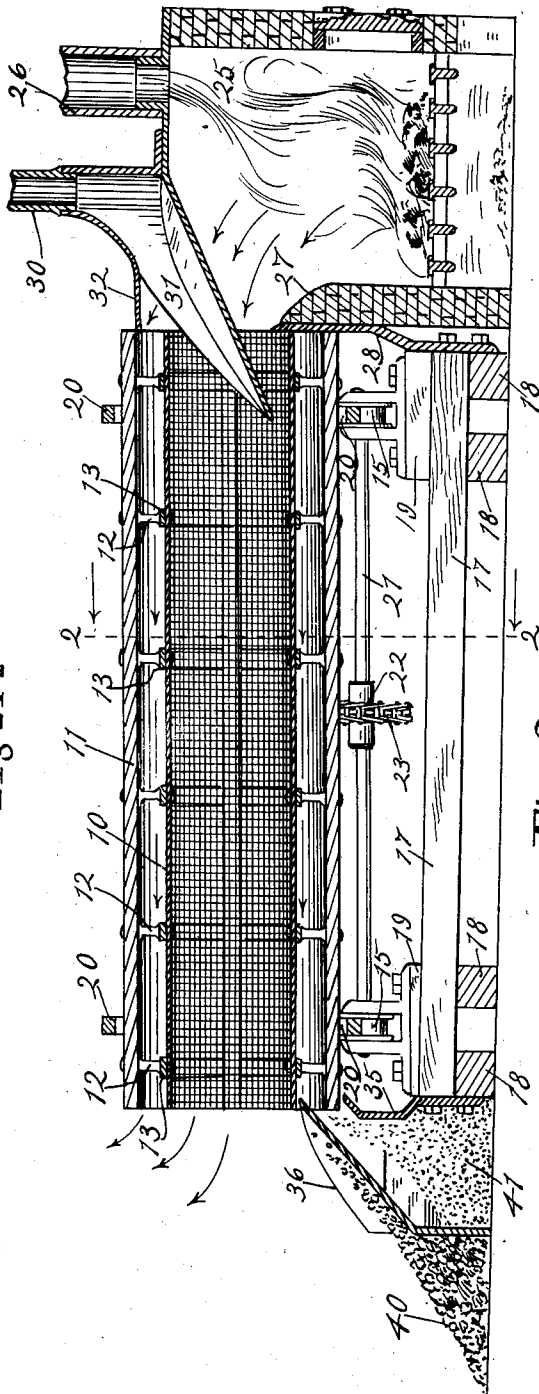
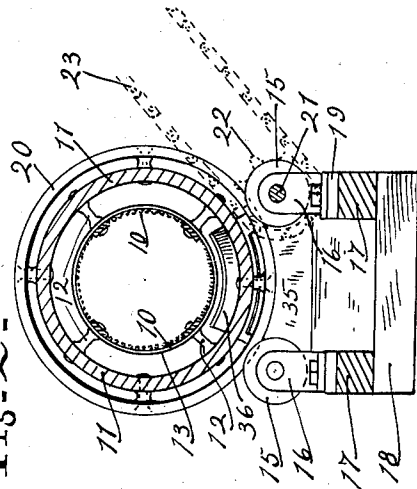


Fig-2-



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LAURENCE ELKUS, OF INDIANAPOLIS, INDIANA.

COMBINED SAND DRIER AND SCREEN.

No. 832,961.

Specification of Letters Patent.

Patented Oct. 9, 1906.

Application filed May 17, 1906. Serial No. 317,321.

To all whom it may concern:

Be it known that I, LAURENCE ELKUS, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Combined Sand Drier and Screen; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

The object of this invention is to so combine a sand drier and screen that the two devices combined will occupy only one-half the space occupied by them independently, as heretofore, and discharge the material from them in the same general locality and also increase the capacity and the drying power of the machine.

The nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a central longitudinal vertical section of the device. Fig. 2 is a transverse section on the line 2 2 of Fig. 1.

The practice heretofore was to run the sand through a drier and dry the same and then run it through a screen for separating and screening it. My invention consists in securing a screen 10 within a revolving drying-cylinder 11, the screen being cylindrical and located in the middle of the cylinder and being held in place within the cylinder by the arms 12, that pass through the cylinder-wall and are secured to the bands 13. This leaves a space between the screen and cylinder surrounding the screen, into which the fine sand passes through the screen.

The drying-cylinder is mounted revolvably on four rollers 15, that are pivoted in the brackets 16 on the longitudinal beams 17, that are on the cross-sills 18. The brackets 16 are placed at different elevations by the blocks 19, so that the drying-cylinder will not be absolutely horizontal, but inclined downward toward the discharge. The cylinder has secured to it, near each end, a bearing-ring 20, that rides on the rollers 15 between the flanges thereof. One pair of rollers 15 is mounted on the shaft 21, that carries a sprocket-wheel 22, to which power from any suitable source is transmitted to a chain 23. In this manner the drying-cylinder and screen are revolved.

At one end of the drying-cylinder there is a furnace 25 with a flue 26 and a bridge-wall 27, which extends up slightly above the lower part of the screen, and between the cylinder

and bridge-wall there is a guard-plate 28, secured to the base of the construction and extending up slightly above the lower part of the screen to prevent the escape of material at the furnace end of the cylinder.

The sand is fed to the machine through the sand-tube 30 and an inclined pan 31 built upon the furnace, the lower end of the pan projecting for some distance into the open end of the screen. A plate 32 closes the upper part of the furnace-chamber, so that the heated air from the furnace will pass longitudinally through the screen and cylinder for drying the sand.

At the discharge end of the device there is a guard-plate 35 secured to the base-frame, with its upper end stopping just below and back of the outlet end of the cylinder. Another guard-plate 36 is provided, with its upper end similarly situated with reference to the screen.

In operation the combined screen and drying-cylinder are constantly revolved, and sand is constantly fed through the pipe 30 and over the pan 31 into the screen at its upper end near the furnace. As the screen is revolved the sand is rolled over its inner surface, so that the fine sand passes through the meshes of the screen into the chamber surrounding the screen and between it and the drying-cylinder. This process of separation continues for a considerable time—that is, during the time required for the sand to reach the discharge end by reason of the revolution of the device and the inclination thereof. During all this time the sand in the cylinder and also in the screen are subjected to heat, whereby the same is thoroughly dried, the drying process and the screening process going on together simultaneously. The coarser material which cannot pass through the screen is discharged over the guard-plate 36 into the pile marked 40. The finer material that passes through the screen is discharged over the guard-plate 35 into the pile marked 41.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a revolving sand-drying cylinder, a cylindrical screen centrally secured in said cylinder, a furnace at one end of said cylinder and screen arranged so that the heated air will pass longitudinally through them, and means for supplying sand to the screen that is located over the furnace so that the material will begin to dry in said sand-supplying means.

2. A revolving sand-drying cylinder, a cylindrical screen centrally secured in the drying-cylinder and spaced from the wall thereof, a furnace at one end of the drying-cylinder arranged so that the heated air will pass longitudinally through the cylinder and screen, and means projecting into the end of the screen near the furnace for supplying sand thereto.
- 10 3. A revolving sand-drying cylinder open at both ends and in an inclined position, a cylindrical screen centrally secured within the drying-cylinder and spaced from the wall

thereof and open at both ends, a furnace at the upper end of the cylinder, means extending into the upper end of the screen for the introduction of sand, and means for separating the material discharged by said cylinder and screen, substantially as set forth.

In witness whereof I have hereunto affixed my signature in the presence of the witnesses herein named.

LAURENCE ELKUS.

Witnesses:

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