No. 871,862. PATENTED NOV. 26, 1907.

S. W. DUNNING.

SIFTER FOR ASHES, &c.

APPLICATION FILED DEC. 13, 1906.

Fig. 1.

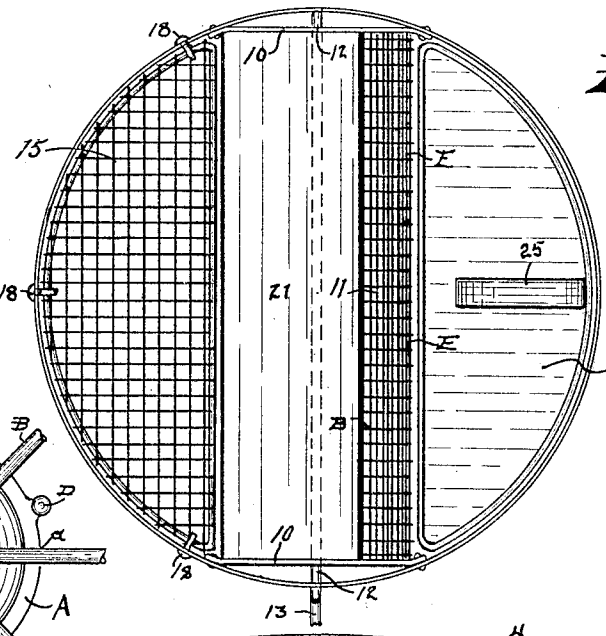


Fig. 3.

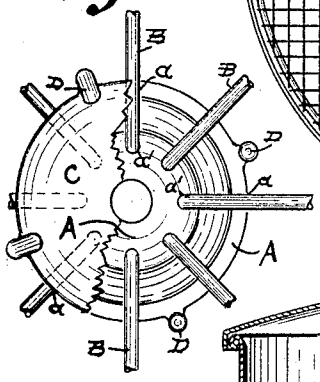
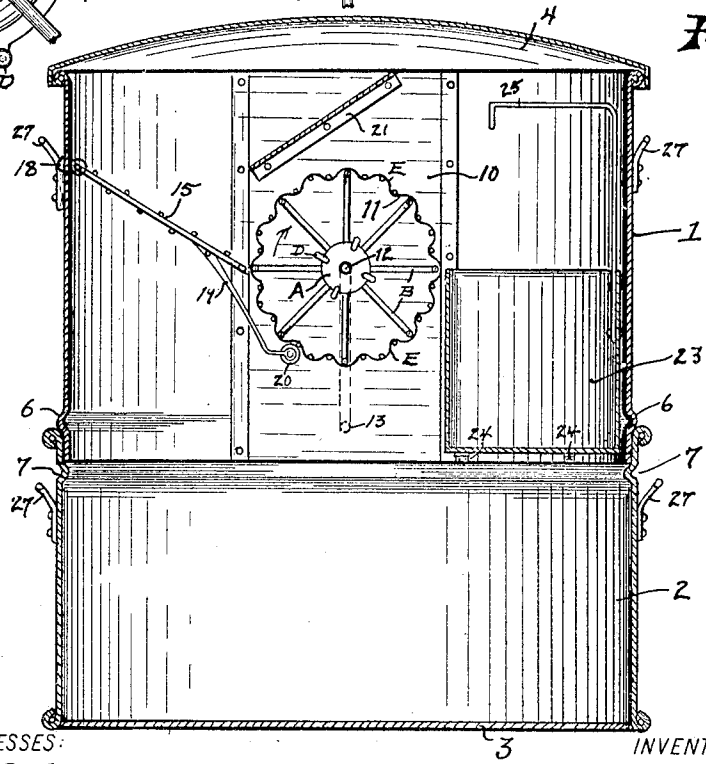


Fig. 2.



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SIFTER FOR ASHES, &c.

No. 871,862. Specification of Letters Patent. Patented Nov. 26, 1907.

Application filed December 13, 1905. Serial No. 291,520.

To all whom it may concern:

Be it known that I, SAMUEL W. DUNNING, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Sifters for Ashes, &c., of which the following is a specification.

My invention relates to improvements in sifters for ashes and other materials.

The object of my invention is to provide means for separating the ashes from the clinkers or coals, and delivering the ashes to one receptacle and the coals to another during the sifting operation; my invention contemplating the provision of a hopper slide and an over-shot drum, both composed of a suitable screen adapted to permit the passage of the ashes there-through and each arranged to impart a vibrating movement to the other, which accelerates the sifting operation.

A further object of my invention is to provide a compact and inexpensive structure containing the above mentioned features, and adapted to be used in connection with a cylindrical casing.

In the following description reference is had to the accompanying drawings, in which;—

Figure 1 is a plan view of my invention with the cover removed. Fig. 2 is a sectional view drawn to a central plane, cutting the cylinder transversely. Fig. 3 is an enlarged view of one of the cylinder hubs showing the manner in which the frame wires are secured thereto.

Like parts are identified by the same reference characters throughout the several views.

The casing of my improved ash sifter is preferably formed in two cylindrical sections, 1 and 2, the lower section being provided with a bottom 3, and the upper section having a closely fitting cover 4. The upper section is provided with an outwardly extending corrugation 6 near its lower end, and the lower section is provided with an inwardly extending corrugation 7 near its upper end, upon which the marginal edge of the upper section is adapted to rest when the upper marginal edge of the lower section engages the corrugation 6 on the upper section, the margin of the two sections being adapted to telescope together. The inner surface of the upper section is provided with oppositely disposed flattened walls 10 and a rotary drum 11 extends transversely across this section of the casing between the walls 10 and is provided with a shaft 12 journaled in said walls, and projecting through the casing at one side and provided with a crank 13. The drum comprises hubs A mounted on the shaft and provided with recesses *a a'* as shown in Fig. 3, adapted to receive the ends of the frame wires B, which are bent inwardly and inserted in the hub recesses and secured therein by the plates C. The hubs are provided with malleable projections D, which are bent over and clenched upon the surfaces of the plates after the latter are adjusted into position. The longitudinal extending portions of the frame wires are covered by a suitable screen E, which forms the outer surface of the drum, and which is bent inwardly between the frame wires B to form longitudinal extending channels as clearly shown in Fig. 2.

An inclined screen 15 having a rounded outer margin adapted to fit the wall of the casing is adjusted within the upper section of the casing, and extends downwardly to a straight edge, the lower margin being in close proximity to the drum approximately at its horizontal central plane. The screen is secured to the casing by bolts or rivets 18, and is provided with one or more resilient arms 19 near its lower edge, having rollers 20 which are adapted to bear upon the surface of the drum and to enter the spaces or channels between the frame rods B, whereby as the frame is rotated a vibrating movement is imparted both to the drum and the screen, both being made of resilient materials and the walls of the casing being also somewhat flexible.

An inclined shield 21 extends across the casing above the drum, this shield being inclined in the direction of the hopper and being adapted to prevent the material dumped into the casing from falling directly upon the upper surface of the drum. On the opposite side of the drum, from that provided with the hopper, is a removable segmental receptacle 23 supported by rests 24 at the lower end of the upper section and provided with a handle 25, whereby the same may be lifted and removed from the casing. Both the upper and lower sections of the casing are preferably provided with handles 27.

In operation the cover is removed and the

material to be sifted is dumped into the receptacle upon the shield 21 and hopper screen 15. A considerable portion of the finer material passes at once through the hopper screen 15 into the lower section of the cylinder. The drum is then actuated in the direction indicated by the arrow in Fig. 2, imparting a vibrating movement to the hopper screen and causing the coarser materials to pass along the screen until caught in the channels of the drum, and carried upwardly over the drum and discharged into the segmental receptacle 23. The vibrations of the drum cause a complete separation of all the finer portions of the material, which are permitted to pass downwardly through the drum, while the coarser portions are being carried over to the receptacle 23. Owing to the fact that the separation of the material is largely accomplished by the hopper screen 15, it requires but a few revolutions of the drum to complete the operation.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is,—

1. In apparatus of the described class, the combination of a rotary drum having a skeleton peripheral frame and a perforate screen covering the same; means for rotating the drum; a hopper arranged to deliver material to the exterior surface of the upper portion of the drum on the upwardly moving side; a receiving chamber on the opposite side of the drum from the hopper; and a resilient device connected with the hopper and adapted to be actuated by projecting portions of the drum, said perforate screen being formed with longitudinal channels adapted to receive the material from said hopper.

2. In apparatus of the described class, the combination of a rotary drum having a skeleton peripheral frame and a perforate screen covering the same; means for rotating the drum; an inclined hopper screen at one side of the drum arranged to deliver material to the exterior surface of the upper portion of the drum on the upwardly moving side, and adapted to permit material passing through such screen to drop at the side of the drum without passing therethrough; a receiving chamber for the material passing through the hopper screen and drum; and a second chamber adapted to receive material carried over the drum; together with means for vibrating the drum and hopper screen.

3. In apparatus of the described class, the combination of a rotary vibratory drum having a skeleton peripheral frame and a perforate screen covering the same; means for rotating the drum; a hopper arranged to deliver material to the exterior surface of the upper portion of the drum on the upwardly moving side; and a receiving chamber arranged for the reception of material delivered from the drum on the side opposite the hopper; said hopper being formed with a screening surface over which the material passes to the drum; and interacting members of the drum and hopper arranged for resilient contact with each other and adapted to impart a vibratory movement to the drum and hopper.

4. In apparatus of the described class the combination with an inclosing casing, of a cylindrical vibratory screen mounted to rotate in said casing and provided with longitudinal channels; an inclined hopper screen interposed between one side of the cylindrical screen and the opposing walls of the casing, and arranged to deliver material to the exterior surface of the drum on the upwardly moving side; and a receiving chamber interposed between the other side of the cylindrical screen and the wall of the casing, together with a shield located above the cylindrical screen and inclined in the direction of the other screen.

5. In apparatus of the described class, the combination with an inclosing casing of a cylindrical screen mounted to rotate in said casing and provided with longitudinal channels; an inclined hopper screen interposed between the side of the cylindrical screen and the opposing walls of the casing, together with an arm mounted upon the inclined screen and provided with a roller bearing yieldingly upon the surface of the cylindrical screen.

6. In apparatus of the described class, the combination with an inclosing casing, of a cylindrical screen mounted to rotate in said casing and provided with longitudinal channels; an inclined hopper screen interposed between one side of the cylindrical screen and the opposing wall of the casing; and a receiving chamber interposed between the other side of the cylindrical screen and the wall of the casing; said cylindrical screen being mounted upon a resilient skeleton frame; and means for transmitting vibratory motion from the cylindrical screen to the inclined screen.

7. In apparatus of the described class, the combination of a rotary drum having a skeleton peripheral frame; a screen covering the drum and provided with depressions adapted to receive the coarser materials; a hopper arranged to deliver material to the upper and outer surface of the drum on the upwardly moving side at a sufficient height to permit the coarser material to be engaged in said depressions, and carried over the drum; and means for vibrating the drum.

8. In an ash sifter, the combination of a closed receptacle provided with a removable cover, a cylindrical vibratory perforate screen mounted to rotate in said receptacle, and provided with longitudinal channels adapted to receive the coarser materials, an

inclined hopper screen interposed between one side of the cylindrical screen and the opposing wall of the casing, and a removable receiving chamber interposed between the other side of the cylindrical screen and the wall of the casing; said hopper screen being adapted to deliver material to the exterior surface of the drum on the upwardly moving side and the bottom of said receptacle being arranged to serve as a receiving chamber for the ashes which pass through the hopper screen and drum.

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

SAMUEL W. DUNNING.

Witnesses:

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