(No Model.)

# E. L. HOWE.

## SEPARATING APPARATUS.

No. 478,159. Patented July 5, 1892.

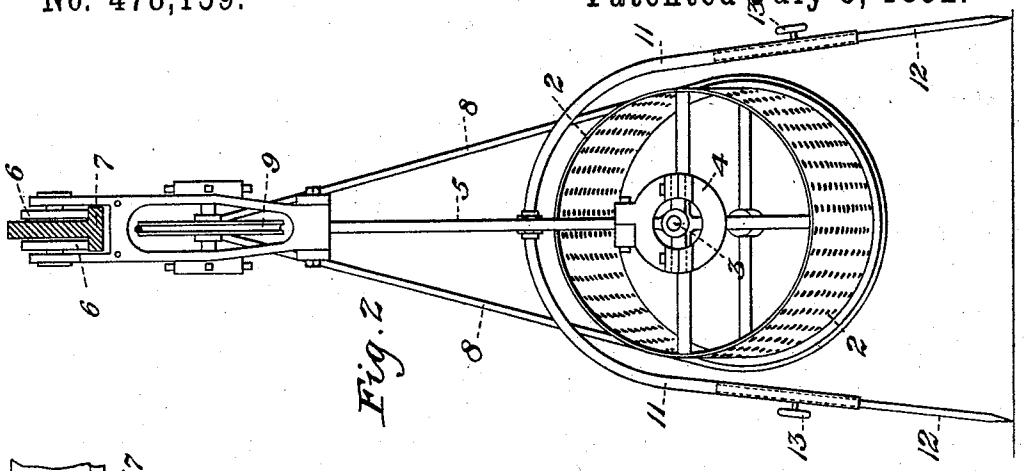

Fig. 2.

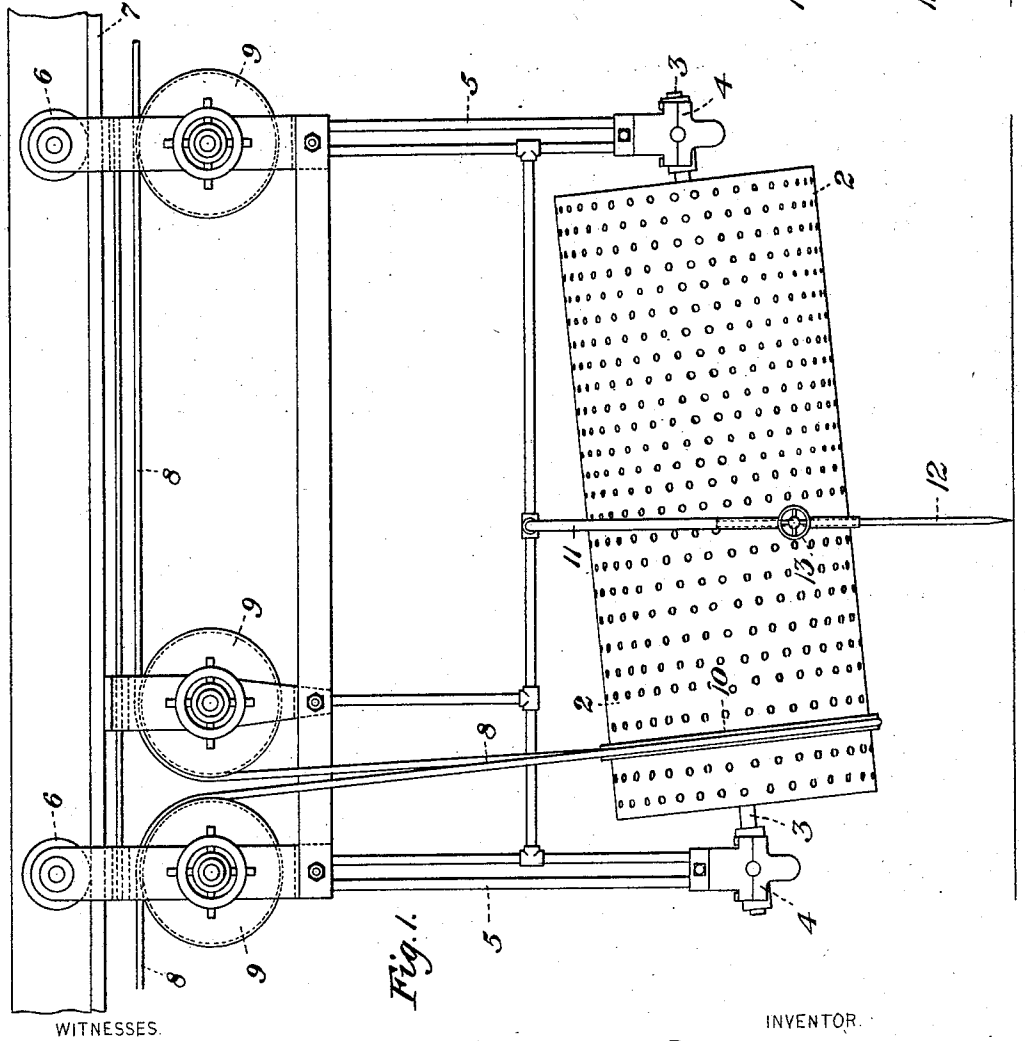

Fig. 1.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## SEPARATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 478,159, dated July 5, 1892.

Application filed January 11, 1892. Serial No. 417,653. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENE L. HOWE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Separating Apparatus, of which the following is a full, clear, and exact description.

I shall describe my invention with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved machine, and Fig. 2 is an end elevation thereof.

The purpose for which especially I have devised my improved machine is for separating malleable castings from the decarbonizing material or packing by which they are annealed. It should be understood, however, that my invention is not limited to the application of the apparatus to this use, since it may be employed for separating or mixing other materials or for any other purpose for which it is adapted.

In treating iron castings to render them malleable they are packed in boxes with layers of hammer-scale or iron oxide in other form and are subjected to a high heat for a considerable time, so as to remove from them a sufficient amount of carbon to soften the iron and to remove its brittleness. When the castings have been removed from the packing-boxes, they must be separated from the packing material, which after being spread out in a layer and treated in the usual manner can be used repeatedly for treating other castings.

Heretofore for separating the castings it has been common to employ an inclined perforated drum forming a cylindrical sieve, into which the packing and castings are thrown. The drum has been mounted on a truck, and when revolved by hand-power the particles of packing pass through the perforations and fall to the ground, while the castings pass along the interior of the drum and are discharged at the lower end separate from the packing. There are several disadvantages incident to such separating apparatus. The labor of turning the drum is excessive, especially in hot weather, and is aggravated by the particles of fine dust which float in the air around the machine. The packing also accumulates rapidly in heaps around and beneath the truck, hemming it in and making the necessary shifting of its position very laborious.

It is the object of my invention to overcome the difficulties above mentioned and to provide a separating-machine simple in construction and easy and effective in its operation.

To this end my invention consists, first, in a separating-drum mounted on a support suspended from an overhead track and movable to carry the drum from place to place; second, in a drum mounted on a movable support, in combination with a traveling power connection which supplies power to rotate the drum in whatever position it may be; third, in a separating-drum suspended from an overhead track and provided with such traveling power connection, and, fourth, in certain preferred details of construction of the parts of the apparatus hereinafter described, and concisely indicated in the claims. These parts or features of my invention are separately and independently claimed herein.

In the drawings, 2 represents the separating-drum, consisting of an open-end cylinder of sheet-iron provided with series of perforations, as shown, and having an axial shaft 3, which is journaled in bearings 4, supported by hanger-rods 5 in such manner that the drum shall be inclined, one end being lower than the other. The bearings 4 are preferably secured to the hanger-rods by lateral trunnions which permit the bearings to adjust themselves and to prevent binding of the axial shaft in its revolution. The hanger-rods form part of a suspending frame or trolley, which at its upper end is provided with wheels 6. These ride upon an overhead rail or track 7 and permit the trolley to be moved from place to place, as desired.

To rotate the drum, I employ a traveling power connection, which, as shown in the drawings, consists of an endless rope 8, extending along the track 7 and driven by a suitably-placed driver-pulley or motor. (Not shown.) It is also provided with means—such as a weighted pulley—to take up the slack and to keep it properly taut. Said rope 8 passes over pulleys 9, journaled on the trolley-frame, and encircles the drum 2, which for this purpose is provided with a peripheral grooved band or pulley 10. With this con-

struction it is clear that when the endless rope is driven it will rotate the drum and the trolley which carries the drum may be moved on its track and shifted in its position without interrupting the power connection which drives it.

In order to hold the drum and trolley from excessive oscillation during the work of separating the castings, I may employ supporting standards or legs 11, which are pivotally secured to the trolley-frame and extend downward on each side of the drum. These legs are preferably rendered adjustable longitudinally, being constituted of telescopically-interfitted parts, the lower parts 12 being longitudinally movable in or on the others and being adapted to be fixed in desired adjustment by set-screws 13.

When the separating-machine has been moved on its overhead track to the desired position in the building in which it is situated, the screws 13 are loosened and the parts 12 of the legs then moved down and their pointed ends caused to engage the floor. The machine is thus held and steadied and is in position to proceed with the work of separation. This work is conducted by feeding into the revolving drum at its upper end the mingled castings and packing material. The castings are delivered from the lower end of the drum, while the packing falls through the perforations in the drum and collects in a heap upon the floor below. When this heap has grown to such extent as to impede the operation of the machine, the legs are disengaged from the floor and the trolley moved on its track to another place, where its operations may proceed as before. In this way the packing may be distributed in convenient heaps over the floor, on which it is afterward spread and treated in the usual manner.

The work of shifting the apparatus is very easy and the power required to rotate the drum is supplied entirely from the motor. The work is thus expedited and facilitated greatly.

Many changes in the form and construction of the apparatus may be made without departure from my invention as stated in the claims. Especially may changes be made in the form of the traveling power connection and in the means by which the drum is supported. It is also possible within the scope of my invention to employ a drum suspended from an overhead track, on which it is movable to carry the drum from place to place, the drum being adapted to be rotated by hand and not by machine power. I may also use the overhead traveling power connection and support the drum on a wheeled support, not from an overhead track.

I claim—

1. A rotatory drum, in combination with a supporting-frame suspended from an elevated track, on which it is movable to change the position of the drum, as and for the purposes described.

2. A rotatory drum mounted on a movable support, in combination with a traveling power connection connected with the drum and adapted to rotate the same, substantially as and for the purposes described.

3. A rotatory drum, in combination with a supporting-frame movably suspended from an elevated track and a traveling power connection connected with the drum and adapted to rotate the same, substantially as and for the purposes described.

4. A rotatory drum, in combination with a supporting-frame movably suspended from an elevated track, a traveling power connection connected with the drum and adapted to rotate the same, and adjustable supporting-legs connected with the frame, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 8th day of January, A. D. 1892.

EUGENE L. HOWE.

Witnesses:
WM. H. HOUSMAN,
LILLIE CHRISTIE.