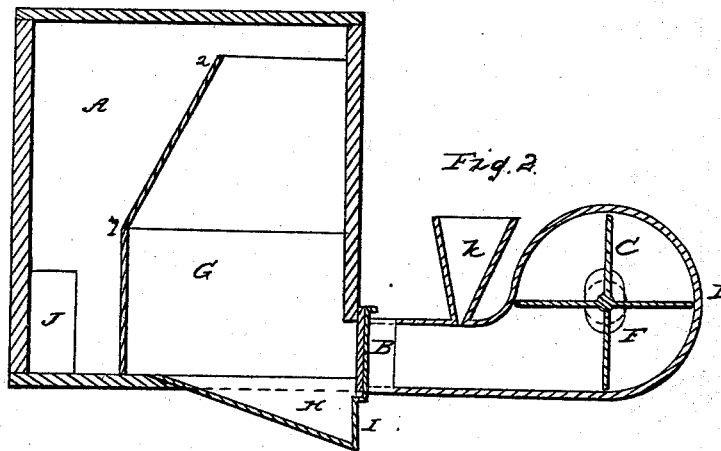
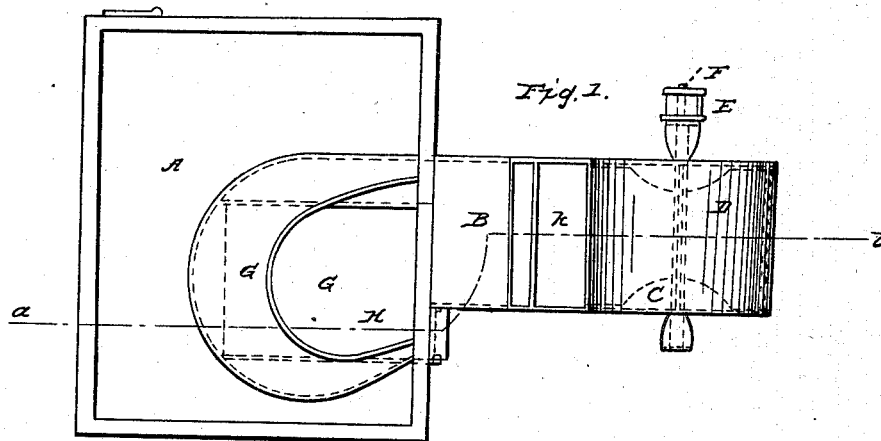


J. & A. HURSH.

Mode of Preparing Ochre for Facing Molds.

No. 49,273.

Patented Aug. 8, 1865.



Witnesses:  
Stephen Votick  
Thomas J. Parby

Inventor,  
Joseph Hursh  
Abraham Hursh

# UNITED STATES PATENT OFFICE.

JOSEPH HURSH AND ABRAHAM HURSH, OF PHILADELPHIA, PA.

## IMPROVED APPARATUS FOR SEPARATING OCHER FROM SAND.

Specification forming part of Letters Patent No. 49,273, dated August 8, 1865.

*To all whom it may concern:*

Be it known that we, JOSEPH HURSH, of the city and county of Philadelphia, and State of Pennsylvania, and ABRAHAM HURSH, of said city of Philadelphia, have invented a new and Improved Mode of Preparing Ocher for Facing Molds; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the separator. Fig. 2 is a vertical section of the same.

Like letters in both figures indicate the same parts of the machine.

We would premise that the usual mode of obtaining ocher is by means of washing the sand or clay which contains it; but the nature of our invention mainly consists in causing the sand containing a portion of ocher to fall upon a current of air, and to be acted upon by the latter in such a manner that the sand (which is the heavier substance) shall fall and be conveyed, by means of a chute or otherwise, to a place of deposit, and the ocher—the lighter substance—shall be caused to rise and be conveyed by means of the current of air above the sand and into a place separate therefrom.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

A represents a room, into which the sand is blown through the trunk B by means of the fan C in the case D, there being a pulley, E, on the shaft F, over which a belt passes from the driving-shaft. The trunk B communicates with the conical chamber G, which is built sufficiently high to prevent the air, in its upward course, carrying the sand into the room A, into which the ocher passes. H is a chute, through which the separated sand falls and is passed out of the chamber G.

I is a door of entrance into the chamber, and J a door of entrance into the room A, as seen in Fig. 2. The top or ceiling A' is removed in Fig. 1 for the purpose of showing the interior of the room A.

K is a hopper, by means of which the sand is fed into the trunk B, to be operated upon by the fan C.

The operation is as follows: The sand is first dried and bolted, and is then regularly fed into the hopper K, from which it falls into the trunk B. The fan C, revolving at a high ve-

locity, forces it into the chamber G, and as the current of air rises when it enters the chamber, the ocher, being much lighter than the sand, is separated from it, and is borne upward and over the top of the chamber and falls into the room A, while the sand, in consequence of its greater weight, falls into the chute H and passes out from the chamber G.

It will be observed that the chamber G rises perpendicularly to the point 1, and then takes an oblique direction inward to the point 2. The object of this is to have the sand carried forward against the perpendicular part of the chamber, where it commences a whirling motion, which facilitates the separation of the ocher from the sand and prevents any part of it being carried over the top of the chamber.

We have represented the fan and its appurtenances situated outside of the room A; yet all may be contained within it when desired.

After the ocher has been separated from the sand it is put into an iron vessel over a strong fire and burned, which improves its quality for facing purposes.

The ocher may be used in its pure state or adulterated with charcoal, stonecoal, or other substances such as are used for facing purposes.

Having thus fully described our invention, what we claim therein as new, and desire to secure by Letters Patent, is—

1. Separating ocher from the sand which contains it in its natural state by means of a current of air in such a manner that the sand falls, while the ocher is borne forward into a separate place of deposit.

2. The combination of the fan C with the chamber G and room A, the whole being constructed and arranged in relation to each other substantially as described, and for the purpose specified.

3. Burning the ocher, or subjecting it to a great heat, for the purpose of completing its adaptability for facing molds for castings, substantially as described.

In testimony that the above is our invention we have hereunto set our hands and affixed our seals this 6th day of July, 1865.

JOSEPH HURSH. [L. S.]  
ABRAHAM HURSH. [L. S.]

Witnesses:

STEPHEN USTICK.  
THOMAS J. BEWLEY.