

S. STUTZ.  
Coal-Washing Machine.

No. 227,930.

Patented May 25, 1880..

Fig. 1.

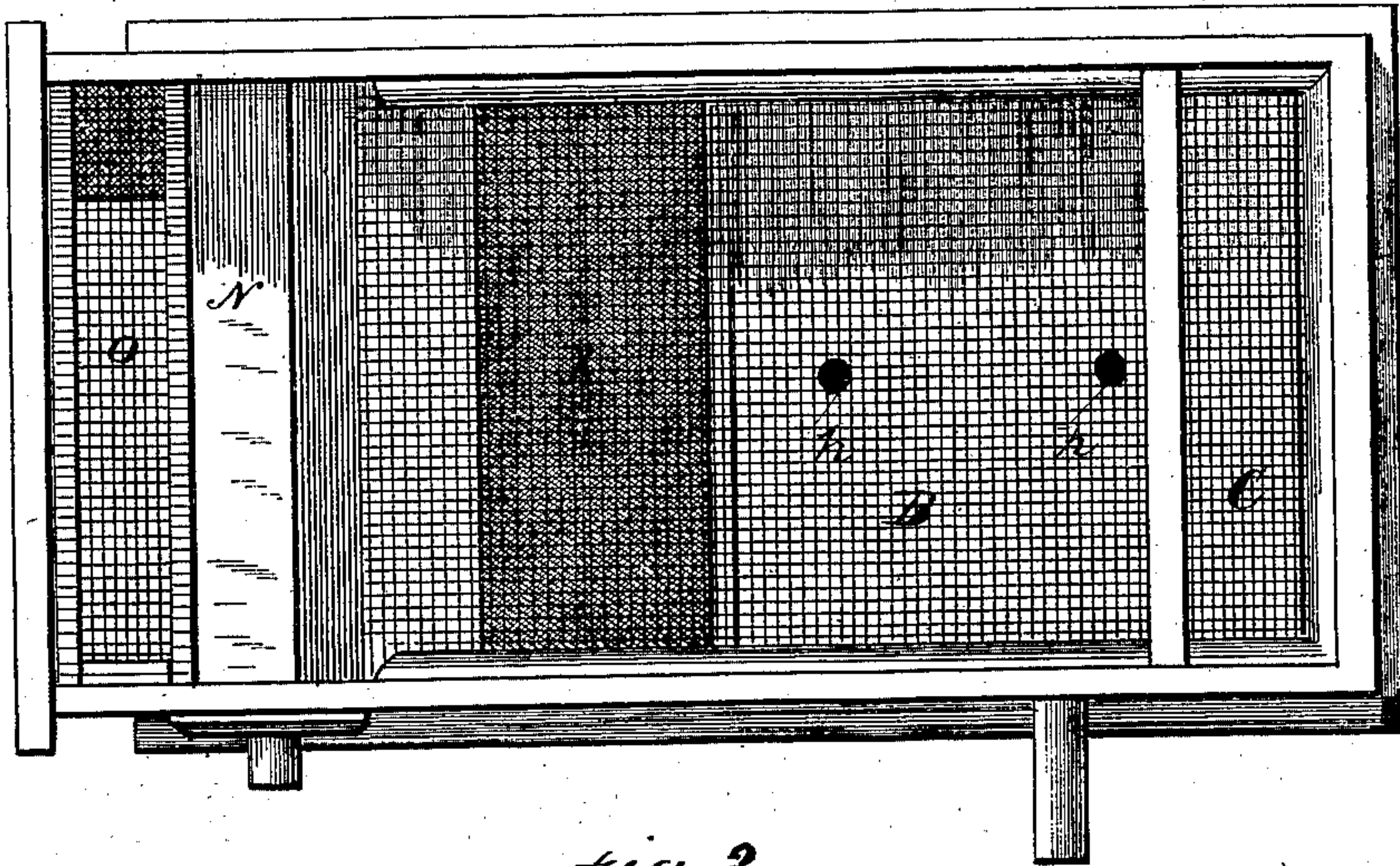
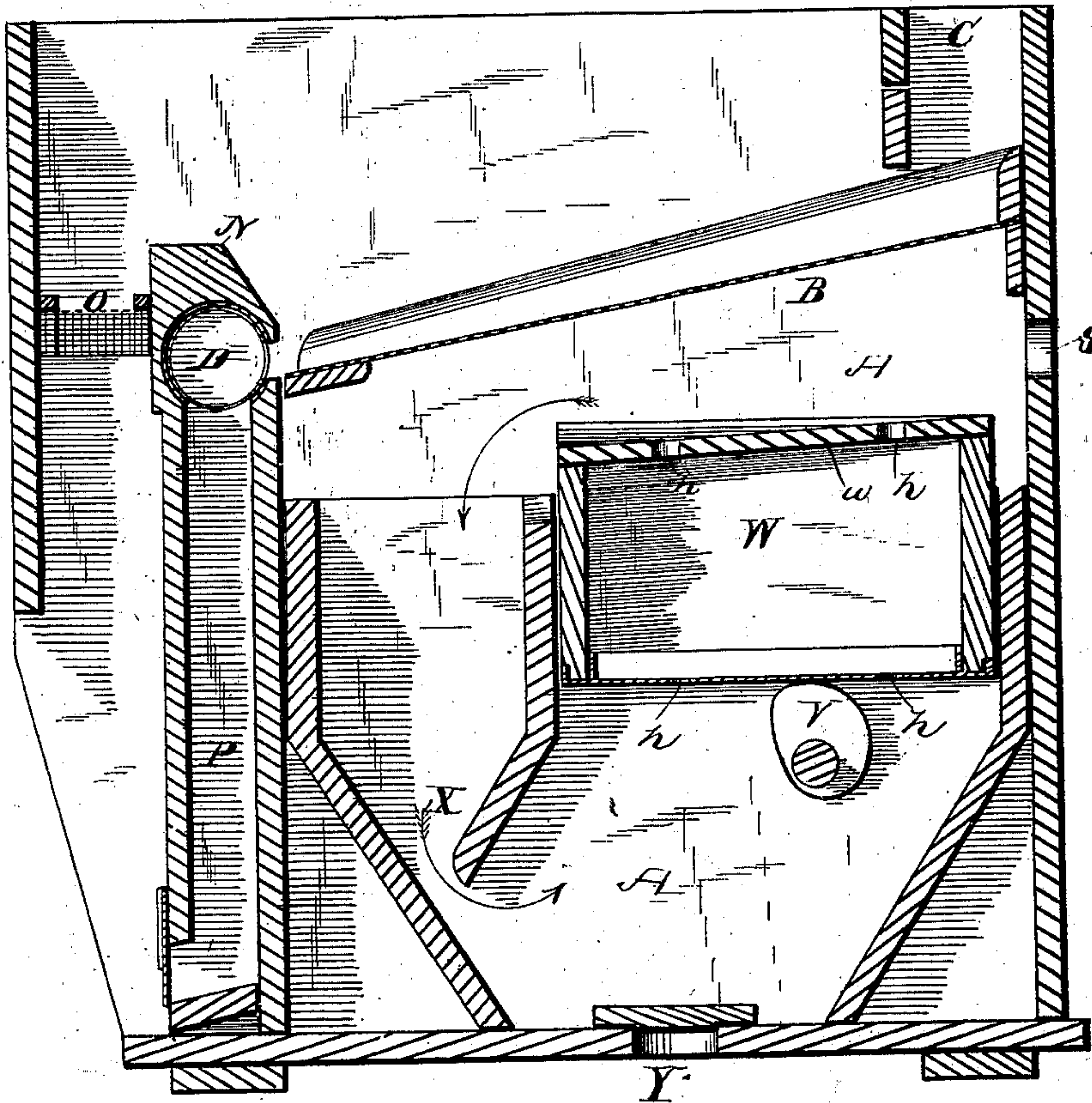


Fig. 2.



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# UNITED STATES PATENT OFFICE.

SEBASTIAN STUTZ, OF PITTSBURG, PENNSYLVANIA.

## COAL-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 227,930, dated May 25, 1880.

Application filed February 27, 1880.

*To all whom it may concern:*

Be it known that I, SEBASTIAN STUTZ, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Coal and Ore Washers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top-plan view, and Fig. 2 a longitudinal vertical section, of my improved machine.

Similar letters of reference in the several figures denote the same parts.

This invention relates particularly to improvements in that class of coal and ore washing machines for which an application for Letters Patent of the United States was filed by me on the 18th day of October, 1879; and it consists in the substitution for the vibrating apron shown and described in said application as the means for inducing the upward pulsating currents of water through the materials on the sieve in the water-compartment of a reciprocating piston of peculiar construction, which will be hereinafter fully described.

In the drawings, A represents the box or compartment of the machine in which the separation of the materials is effected. It is water-tight, and is adapted to be filled with water and maintained full during the operation of the machine.

B is the inclined sieve upon which are fed the materials to be separated; C, the feed-hopper; D, the valve through which the heavy separated materials are permitted to escape; N, the partition over the edge of which the lighter separated materials are carried by the overflowing water; O, a sieve or screen on which such lighter materials fall and are directed out of the machine, and P the chamber in which the heavy materials accumulate and from which they are removed at pleasure.

Thus far described, the machine does not differ materially from that shown and described in my pending application referred to.

Below the sieve B, I arrange a suitable piston, W, and provide a rotating cam, V, or other equivalent arrangement for imparting to said piston a vertical up-and-down move-

ment, for the purpose of producing pulsating currents of water through the materials on the sieve B, to effect the proper separation of such materials.

I preferably construct the piston hollow and box-shaped, and with a top or upper surface, *w*, concaved and inclined downward, as shown, so that the fine material that falls through the sieve B will be collected and conducted into the passage X, and thence down into the chamber Y, at the bottom of the machine below the piston.

Small holes *h h* are made through the top and bottom of the piston, for the purpose of preventing a vacuum below the piston when the same is quickly lifted by the cam.

The operation of the cam is to quickly lift the piston and slowly lower it, thus producing pulsating currents of water through the materials on the sieve B, and effecting their separation according to their different specific gravity, the lighter materials being carried over the edge of the partition N and out of the machine by the overflowing water, and the heavier materials tailed off of the sieve and through the valve D into the chamber P.

A fresh supply of water flows into the compartment A through the opening S, so as to maintain said compartment full at all times.

The machine thus constructed is adapted to the separation and washing of coal from its heavy impurities, and also for washing and separating ores.

I do not broadly claim herein an agitating apron or piston arranged in the main water-compartment vertically beneath the supporting-sieve, as such subject-matter is claimed in my prior pending application of October 18, 1879, before referred to.

I claim as my invention—

1. The combination, with the sieve, arranged within the compartment A, as described, of the box-shaped piston W, having its upper surface concaved and inclined, substantially as described, for the purpose specified.

2. The piston W, having the holes *h h* through its top and bottom for the purpose of preventing the formation of a vacuum under said piston, substantially as described.

SEBASTIAN STUTZ.

Witnesses:

J. J. MCCORMICK,  
LEDLIE GLOSSINGER.