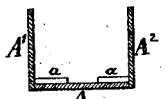
D. D. Mallory,

Ore Washer.

No. 109,030. Patented Nov. 8. 1870.

Fig. 4.



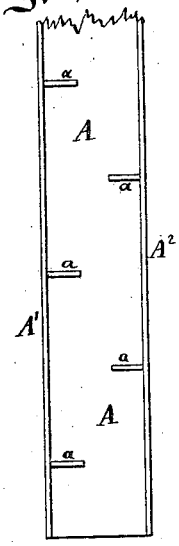


Fig. 1.

Fig. 2.

Witnesses,

C. L. Livings

A. Hermann

Inventor,

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by his attorney

T. D. Watson

United States Patent Office.

DAVID D. MALLORY, OF MYSTIC BRIDGE, CONNECTICUT.

Letters Patent No. 109,030, dated November 8, 1870.

IMPROVEMENT IN WASHING AND TRANSPORTING SAND.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, DAVID D. MALLORY, of Mystic Bridge, in the county of New London and State of Connecticut, have invented a new and improved Method of Transporting and Thoroughly Washing Sand; and I do hereby declare that the following is a full and exact description thereof.

My invention is more particularly applicable to the treatment of sand which is found at this locality, and is much used for glass making. It contains a large per cent. of pure silex. The remainder, or a large portion of the remainder, is clay and analogous earthy matter, which should be removed.

The deposit of sand is found at an elevation of some one hundred and fifty feet above tide-water, to which it is closely adjacent.

I believe that my invention may be applied to the transporting and washing of finely-divided ores and many other materials.

I remove the material and simultaneously wash it by causing it to descend in a violently agitated current of rapidly-moving water.

I will proceed to describe what I consider the best means of carrying out the invention.

The accompanying drawing forms a part of this specification.

Figure 1 is a general side view, or, rather, a vertical section on a small scale;

Figure 2 is a section of a small portion on a large scale;

Figure 3 is a cross-section of the trough on a still larger scale; and

Figure 4 is a corresponding plan view of a portion.

Similar letters of reference indicate corresponding parts in all the figures.

I construct a trough, of plank or analogous material, which may be of uniform width throughout, and fix in its bottom or sides, or both, at short intervals, strips of wood extending about one-third of the distance across.

In the drawing the bottom of my trough is indicated by A, and the sides by A^1 and A^2, while these short bars or semi-riffles are marked *a*.

I shall, when necessary, designate the entire trough, A, A^1, and A^2, by the single letter A.

This trough extends, either in a direct or more or less irregular line, from a point on the hill at or something above the sand to a pool or tank indicated by B.

The upper edge of this tank B is smooth and level, and the current of water, with the mingled matter, is received at or near its center, or so as to provide as extended a surface as possible over which the water may flow quietly, bearing away the clayey matter which has been loosened and freed from the sand in the descent.

The water may be supplied from natural sources, if any can be found sufficiently near at a proper altitude; but in other cases it can be forced up by a rotary or other pump driven by suitable power.

It is important that the water be not the same muddy water which flows from the tank B, as it would not in such case take up or absorb the loam and analogous matter with the same facility.

The water is thrown into the trough A in liberal quantities, and allowed to descend freely, except as it, and especially its lower strata, is constantly agitated and thrown alternately from side to side by passing with great rapidity over or across the partial riffles *a*.

After the tank B is nearly filled with sand the stream may be stopped and the remaining water may be drained off through suitable small orifices, not represented, at the side or bottom, and the sand removed.

It has heretofore been common to transport sand, with its accompanying foreign matter, by cars, or otherwise, down the hill, and then to cleanse it by laborious processes of washing, &c.

There is no novelty in washing sand by violent agitation in water and allowing it to settle in a still pool while the water flows away quietly and carries the soluble or semi-soluble matter found therewith; neither is it new to remove the material of hills by washing it down by streams, natural or artificial; but I am not aware that any one before has used or proposed a means for simultaneously washing and transporting sand by currents of water, with provisions for conducting it efficiently and uniformly like mine, or even transporting sand and analogous material through troughs by currents of water.

What I claim as my invention is—

The within-described method or process of transporting and washing sand and analogous material by means of a current of water conducted through the spout A, passing over the bars *a*, or equivalent partial riffles, and separating the water and foreign matter from the sand in the tank B, or its equivalent, at its base, all substantially as herein set forth.

In testimony whereof, I have hereunto set my name in presence of two subscribing witnesses.

DAVID D. MALLORY.

Witnesses:

CHAS. M. NILES, Jr.,

WM. S. FISH.