T. R., E. R. & W. J. WILLIAMS.

Sand-Washing Machine.

No. 219,332. **Patented Sept. 2, 1879.**

Fig. 1

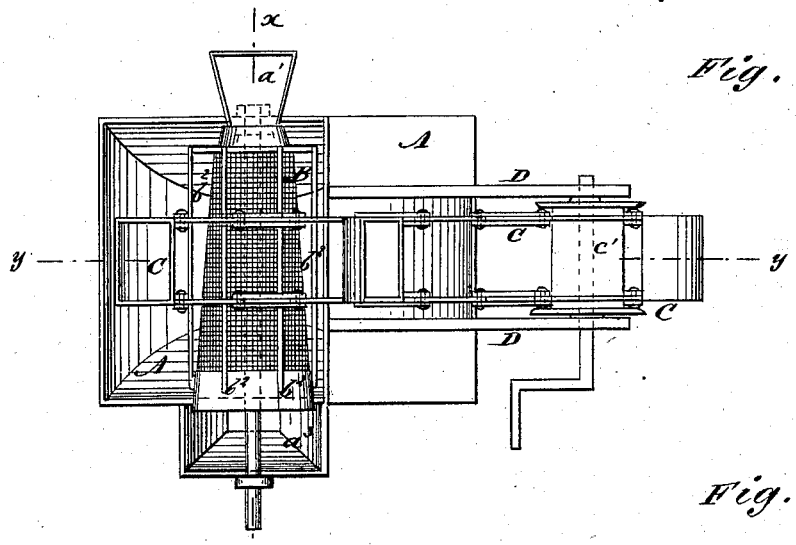

Fig. 4

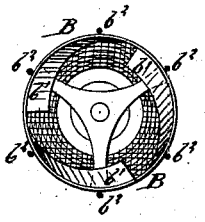

Fig. 2

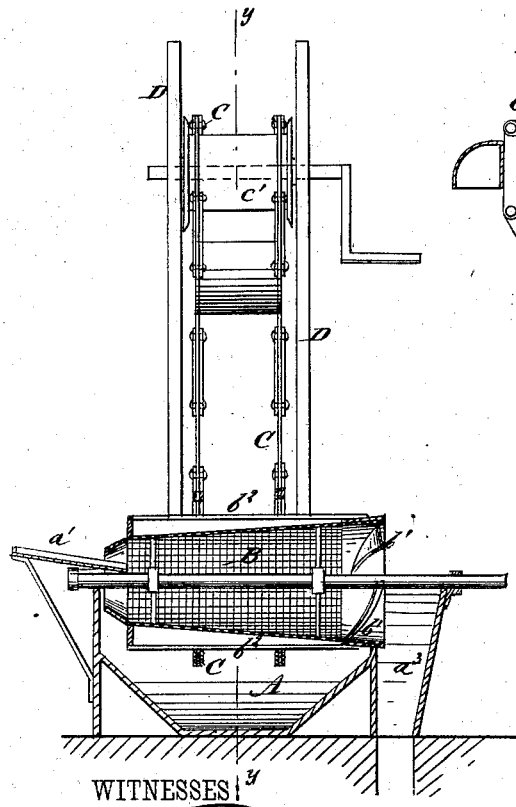

Fig. 3

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UNITED STATES PATENT OFFICE.

THOMAS R. WILLIAMS, EVAN R. WILLIAMS, AND WILLIAM J. WILLIAMS, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN SAND-WASHING MACHINES.

Specification forming part of Letters Patent No. **219,332**, dated September 2, 1879; application filed June 20, 1879.

To all whom it may concern:

Be it known that we, THOMAS R. WILLIAMS, EVAN R. WILLIAMS, and WILLIAM J. WILLIAMS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Sand-Washing Machine, of which the following is a specification.

Figure 1 is a top view of our improved machine. Fig. 2 is a vertical cross-section of the same, taken through the line *x x*, Figs. 1 and 3. Fig. 3 is a vertical longitudinal section of the same, taken through the line *y y*, Figs. 1 and 2. Fig. 4 is a detail end view of the screen.

The object of this invention is to furnish an improved machine for washing and cleaning sand as it is raised from a river, which shall be simple in construction, effective in operation, washing the sand clean and without wasting it, and easily operated, requiring only a small amount of driving-power.

The invention consists in the combination of the tapered cylindrical rotating screen, provided with the scroll-paddles and the parallel rods, the elevator and the box or well, provided with the inlet-chute, and the waste-chute, with each other, as hereinafter fully described.

A represents a box, which is designed to be connected with a dredging or other boat, and which is made with a curved bottom to adapt it to serve as an elevator-well.

In bearings in the sides of the box A revolve the journals of a tapered cylindrical screen, B, into the smaller end of which the sand and dirt are designed to be introduced from the dredging-elevator through a chute, a^1, attached to the box A.

The screen B is so placed that its lower part may revolve beneath the surface of the water in the box A, which water is admitted through a hole, a^2, in the upper part of the side of the said box A.

To the inner surface of the larger or discharge end of the screen B are attached inclined or scroll paddles b^1, by which, as the said screen B is revolved, the water and the dirt floating in it and any coarse material that will not pass through the screen B are forced out into the well or chute a^3 and pass back into the river, the clean sand passing through the meshes of the screen B and settling into the bottom of the box A. With this construction there is no overflow of water to carry away the sand before it has time to settle, and thus waste it.

To the larger end of the screen B, and to a flange formed around its smaller end, are attached a number of parallel rods, b^2, so that they may serve as a sprocket-wheel for the elevator-chain to pass around to keep the said elevator C in place, and to cause the said elevator to rotate the said screen B.

The elevator C also passes around a sprocket-wheel, c', pivoted to supports D, attached to the box A, or to the boat with which the said box is connected.

The elevator C takes the sand from the bottom of the box A and discharges it into a chute that conducts it into a receiving-boat placed at the side of the dredging-boat.

Motion is applied to a journal of the sprocket-wheel c' from any convenient power.

With this construction the sand will be washed rapidly and without waste, and will be delivered to the receiver clean and ready for use or market.

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

The combination of the tapered cylindrical rotating screen B, provided with the scroll-paddles b^1 and the parallel rods b^2, with the elevator C c' and the box or well A, provided with the chute a^1 a^3, substantially as herein shown and described.

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WILLIAM J. WILLIAMS.

Witnesses:
JAS. W. HUGHES,
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