(No Model.)

E. C. BACON.

MACHINE FOR WASHING PHOSPHATE ROCK.

No. 335,673. Patented Feb. 9, 1886.

Fig. 1.

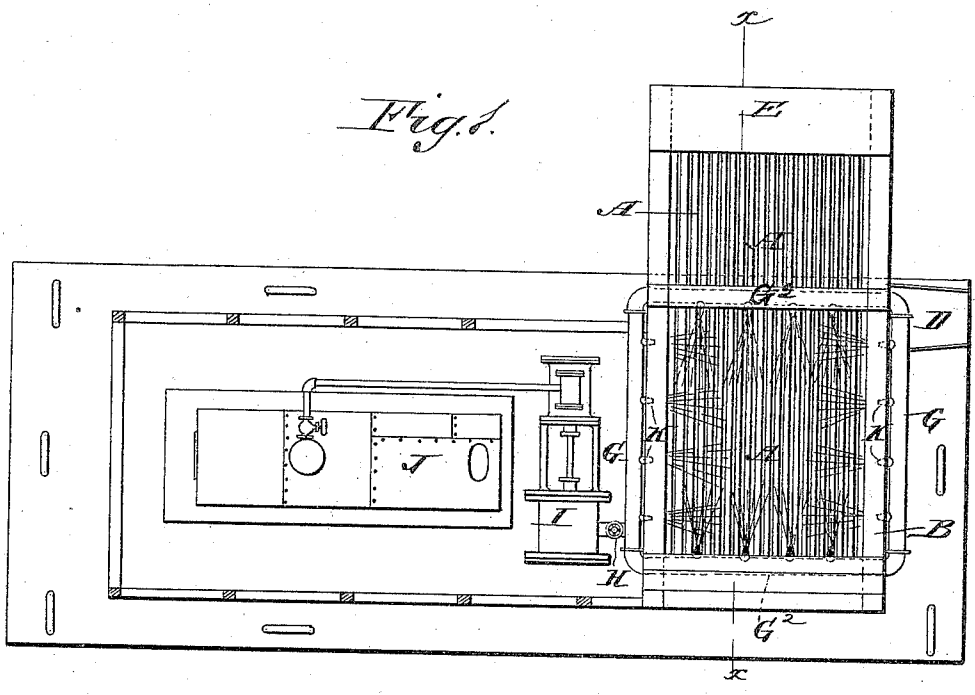


Fig. 2.

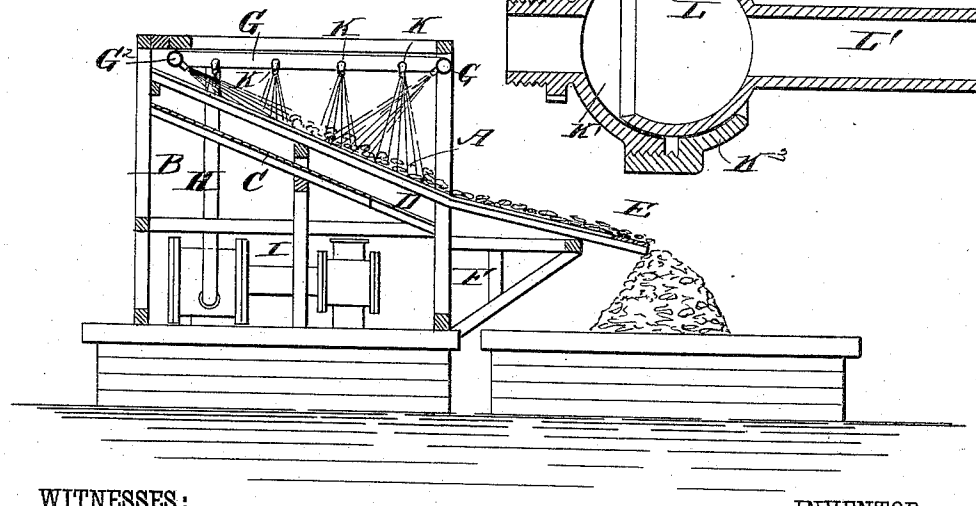


Fig. 3.

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EARLE C. BACON, OF NEW YORK, N. Y., ASSIGNOR TO THE SEA ISLAND CHEMICAL COMPANY, OF BEAUFORT, SOUTH CAROLINA.

MACHINE FOR WASHING PHOSPHATE ROCK.

SPECIFICATION forming part of Letters Patent No. 335,673, dated February 9, 1886.

Application filed May 20, 1885. Serial No. 166,192. (No model.)

To all whom it may concern:

Be it known that I, EARLE C. BACON, of the city, county, and State of New York, have invented a new and Improved Machine for Washing Phosphate Rock, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved machine for washing and cleaning phosphate rock as it is received from the dredging-machine.

The invention consists of the combination of parts, including their construction, substantially as hereinafter fully set forth and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of my improved machine for washing phosphate rock. Fig. 2 is a vertical cross-section of the same on the lines *x x* of Fig. 1, and Fig. 3 is a longitudinal section of the adjustable nozzle.

The machine is mounted on the deck of a boat, scow, or lighter of any suitable construction and placed alongside of a dredging-machine, which empties the phosphate rock and collected impurities upon the inclined screening-bars A, which are secured to a frame, B, of suitable construction, erected on the deck of the boat, scow, or lighter.

A short distance beneath the screening-bars A is placed the inclined floor C, secured to the frame B and terminating in a chute, D, which dumps the impurities and the water coming down the inclined floor C on the outside of the boat. The screening-bars A terminate in the inclined floor E, supported by timbers F, attached to the frame B and the boat, extending beyond the sides of the boat, and dumps the cleaned phosphate rock on the deck of another boat or scow placed alongside of the boat carrying the machine.

Above the inclined screening-bars A are placed the horizontal water-pipes G, connected to each other by suitable devices, and supplied with water from a pipe, H, connected to the steam-pump I, which uses as a supply the water surrounding the boat. The steam-pump I is driven by steam from the boiler J.

The pipes G are provided with adjustable nozzles K, placed on the pipes G at suitable distances from each other, and can be placed in such a position that the material placed on the screening-bars receives streams of water from the ends, top, and sides. Any nozzle accomplishing this purpose can be used; but I prefer the nozzle K, (shown in detail in Fig. 3,) which consists of the half-spherical-shaped piece K′, having the short pipe K^2, which is screwed into the pipe G, the ball-shaped piece L fitting in the hollow piece K′, and secured therein by the nut K^3, and provided with the nozzle end or pipe L′. The adjustability of the nozzles enables the changing of the planes of their presentation to the rock or material, so as to direct the streams of water issuing therefrom upon every part of the entire mass, to effect the thorough washing of the latter.

The operation is as follows: The water supplied by the steam-pump I is forced through the pipes H and G and out of the nozzles K on the material containing phosphate rock placed on the screening-bars A. The streams of water separate the impurities from the phosphate rock, which fall through the screening-bars A on the inclined floor C and pass down the same and out into the water over the chute D. The phosphate rock, being larger than the openings between the screening-bars, cannot fall on the inclined floor C, but gradually moves down on the screening-bars by its own gravity and assisted by the force of the water from the nozzles K, attached to the pipe G^2 at the upper end of the spring-bars A, which nozzles K are placed in the same inclined position as the screening-bars A.

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

In a machine for washing phosphate rock, the pipes and their swiveled or ball-shaped jointed nozzles, in combination with inclined screening-bars, the frame supporting the said bars, and an inclined floor, said pipes being located on the four sides of the frame, substantially as and for the purpose set forth.

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Witnesses:
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