

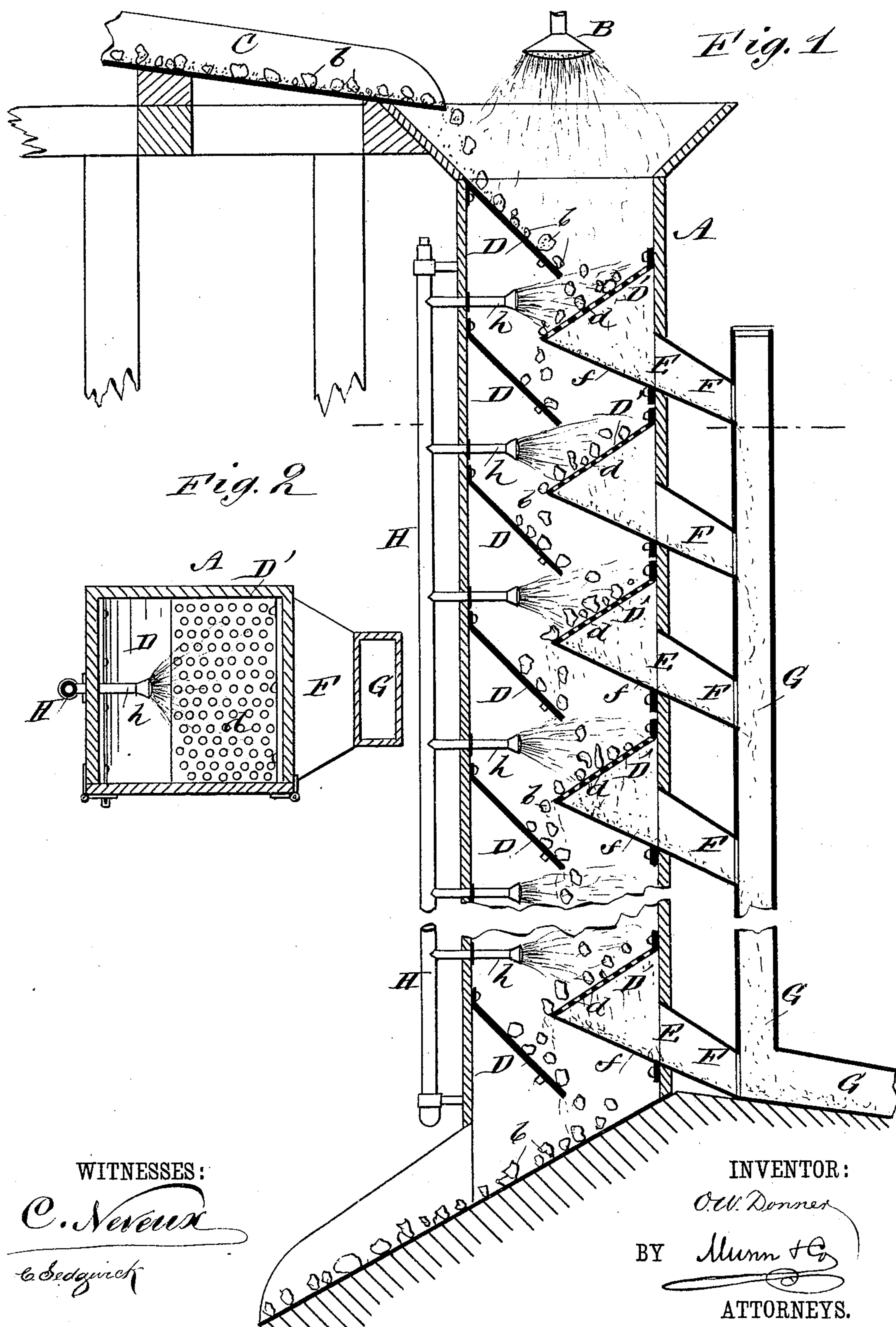
(No Model.)

O. W. DONNER.

APPARATUS FOR WASHING ROCK, &c.

No. 366,820.

Patented July 19, 1887.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR WASHING ROCK, &c.

SPECIFICATION forming part of Letters Patent No. 366,820, dated July 19, 1887.

Application filed January 8, 1887. Serial No. 223,792. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR W. DONNER, of Coosaw, in the county of Beaufort and State of South Carolina, have invented a new and Improved Apparatus for Washing Rock and Similar Material, of which the following is a full, clear, and exact description.

My invention relates to an improved apparatus for cleaning or washing rock and similar material, and has for its object to free the same in an expeditious and simple manner from any sand, dirt, or foreign matter that may be in engagement therewith.

The invention consists in the construction and combination of these several parts, as will be hereinafter fully set forth, and pointed out in the claim.

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

Figure 1 is a central longitudinal and vertical section through my apparatus, and Fig. 2 is a horizontal transverse section through the same on the dotted line of Fig. 1.

In carrying my invention into effect I employ a vertical conductor, A, preferably rectangular in form, adapted to stand in a vertical position and extend a considerable distance above the ground.

The top of the conductor is usually made flaring or hopper-like, and about centrally of the top, and above the same, a large rose, B, is held in suspension, to shower a constant supply of water upon the rock *b* and the foreign matter clinging thereto as it is delivered to the conductor from a chute, C, or other equivalent or convenient means, as illustrated in Fig. 1. Upon the same plane with one side of the inclined or flaring mouth of the conductor A, and attached to the inner side of the said conductor below the chute C, a plate, D, is attached, adapted to extend at an inclination downward to about centrally between the sides of the conductor. To the opposite side of the conductor, in about perpendicular alignment with the end of the inclined plate D, another plate, D', is attached, having a series of apertures, *d*, or equivalent openings, covering the surface thereof, which perforated plate is

adapted to extend at an inclination downward beyond and below the end of the solid plate D.

In the wall of the conductor, behind the perforated plate D', an orifice, E, is made, in which orifice an inclined gutter, F, is secured, the bottom *f* of said gutter being extended upward and inward in the conductor to a connection or union with the end of the apertured or perforated plate D', while the outer end of the gutter is entered in the side of a vertical chute, G, parallel with and to the rear of the conductor. Upon opposite sides of the conductor, from top to bottom thereof, a series of equidistant perforated and solid plates, D D', are attached, as aforesaid, the one plate directed toward the middle of the next in order below, and both projecting downward at the same inclination, each apertured plate being provided with a closed gutter, F, which gutter is made to enter the chute G parallel to the conductor.

Outside the inner wall of the conductor one or more stand-pipes, H, are held parallel with the said wall, horizontal perforated branches *h* therefrom being made to project through the wall beneath each solid inclined plate D, immediately opposite and centrally in alignment with the upper surface of each perforated plate D', the object being to have a continual stream of water play upon each of the said perforated plates from top to bottom of the conductor.

In operation, when it is desired to cleanse rock from impurities, such as sand or mud, with a view to pulverize the same—for example, a phosphate rock for fertilizing purposes—the rock is fed in the top of the conductor subject upon entering to a spray of water from a suitable nozzle to make the same slide or roll easily down the first inclined solid plate, D, and drop upon the perforated plate D' below it, and the stream of water under pressure constantly playing upon said perforated plate tends to cleanse the rock and wash the mud and sand off, which, together with the water, passes through the said perforated plate into the gutter F, and from thence down into the chute G, and so the rock falls or rolls the length of the conductor from plate to plate, almost constantly subjected to the action of water, the refuse matter being washed off and carried away at each perforated plate over which it passes,

until, when the bottom plate is reached, the rock is delivered clean to be conducted farther to any desired spot, and the refuse matter, together with the water passing into the chute G, may be carried at will in any desired direction.

It is obvious that the arrangement and number of the plates may be greatly varied without departing from the spirit of my invention, and that the fall from plate to plate may be made greater or less than shown, according to the nature of the material to be treated. The arrangement shown, however, is ordinarily preferred.

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

The combination, with a vertical conductor and a water-rose arranged above said conductor, of a series of solid and perforated plates, the latter being arranged below and at an angle to the former, a series of water-pipes projecting through said conductor, one opposite each perforated plate, and gutters forming a part of each perforated plate at the base and leading out from the conductor, substantially as shown and described, and for the purposes herein set forth.

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Witnesses:

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