PECKHAM & PALMER.

Ore Washer.

No. 9,522. Patented Jan. 4, 1853.

Fig. 3

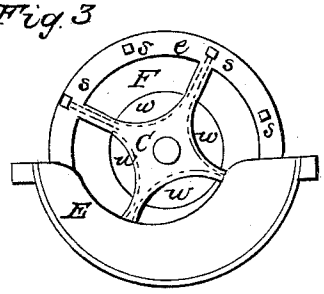


Fig. 2.

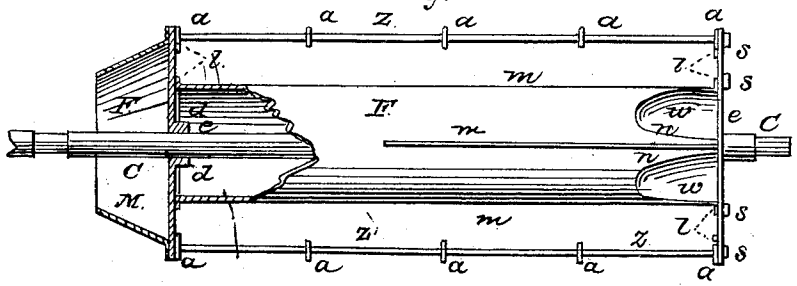
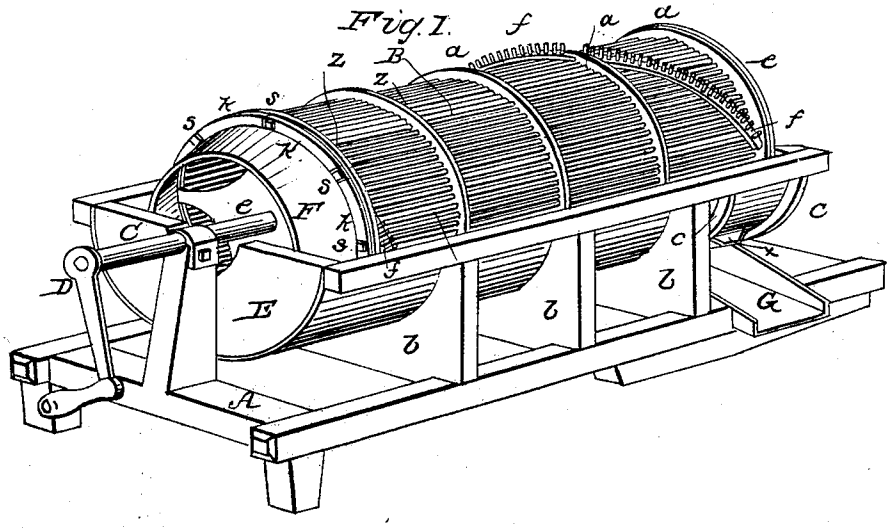


Fig. 1.



UNITED STATES PATENT OFFICE.

M. PECKHAM AND L. O. PALMER, OF UTICA, NEW YORK.

ORE-WASHER.

Specification of Letters Patent No. 9,522, dated January 4, 1853.

To all whom it may concern:

Be it known that we, MERRITT PECKHAM and LUCIUS O. PALMER, of Utica, in the county of Oneida and State of New York, have invented a Machine for Washing Gold from the Deposits in Which it is Found; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, having reference to the accompanying drawings, which constitute a portion of this specification, in which—

Figure 1 is perspective view; Fig. 2 a longitudinal section, and Fig. 3 a transverse section.

A, Fig. 1, is the frame which is made of wood.

B is the cylinder which is composed of the heads *e e* made of cast iron, the rings *a a a a a* of wrought iron, and the small iron rods *z z z*. The heads are made with four large apertures in them for the reception and discharge of the substances to be washed. The rings are of wrought iron bent in the form desired and punched in a proper manner to receive the rods, which are one-fourth of an inch in diameter with an intervening space of one-eighth of an inch forming a fine screen. These rings are more or less in number, as required, for the size and strength of the machine. One of these rings is secured to each head to hold the ends of the rods; no drilling of the heads being required except for some few of the rods of three-eighths in diameter which run through them and have nuts *s*, *s*, *s*, *s* screwed on them to hold the whole together. This cylinder encircles a smaller one made of sheet iron, and secured by flanges on the heads. This cylinder is about one-half the diameter of the larger one and of the same length. The large cylinder is also divided into four separate parts by as many wings or partitions of sheet iron extending the entire length of the cylinder, and from the periphery of the inner cylinder to the rods of the larger one to which they are firmly secured, as well as to the small cylinder. The whole is keyed on the shaft C and made to revolve by the crank D, or by belt and pulley.

E is a trough made of sheet iron with wood or metal heads as desired and sustained by the plants *b*, *b*, *b*, which are made of the proper form and secured to the frame A. The trough is of sufficient depth to receive the cylinder nearly to its axis C.

F is the hopper for feeding the earth into the cylinder. It is in form like a funnel reversed, the small end being toward the operator. The large end is spread out into a flange at *k*, *k*, and secured to the head by rivets or bolts.

G is a conductor for the purpose of drawing off the contents of the trough whenever it is desired, a hole in the bottom of the trough opening into it. *x* is a slide covering this hole and held in its place by the curved pieces *c*, *c*.

f, *f*, *f*, is a bar of iron secured to the periphery of the cylinder in a spiral form extending the length and also making the entire circuit of the cylinder, into this bar are inserted teeth of sufficient length to reach nearly to the bottom of the trough. These teeth are for the purpose of keeping the contents of the trough constantly in motion and are placed in this form to counteract their tendency to accumulate at the end of the trough next the conductor G consequent on the elevation of the other end, which will be observed in this figure. The end of the trough which is elevated will be designated the upper end and the other the lower end.

C, Fig. 2, is the shaft. F, is the hoper; L the small cylinder made of sheet iron. *m*, *m*, *m*, are the wings or partitions. *a*, *a*, *a*, are the rings holding the rods *z*, *z*. *l*, *l*, *l*, *l* are the small flanges for holding the wings and *s*, *s*, *s*, *s*, are the nuts on the rods that run through the heads *e*, *e*, holding the whole together. The spaces marked *w* embraced within the lines *n*, *n*, are bent inward presenting a concave surface having an inclination toward the end for the purpose of throwing whatever falls upon them from the machine. *d*, *d*, is the flange on the heads holding the small cylinder. The flange for holding the other end is represented by the dotted lines in Fig. 3.

E Fig. 3 is the trough showing the manner in which the end is cut out to permit the escape of the water; it is also beveled or rounded from the inner edge so that no stones or other bodies can lodge upon it. C is the shaft; *w*, *w*, *w*, *w*, are the concave portions of the cylinder; Z the dotted lines

on the arms of the head *e* showing the position of the wings, and *s*, *s*, *s*, *s*, are the nuts on the rods.

To operate this machine the trough is filled with water and a small stream of it kept constantly running in at the upper end of the trough. The cylinder is made to revolve in the water in the direction of the arrow and the earth thrown into the hopper, falling to the lowest part of the same, at M Fig. 2, which is inclined at an angle of about 22½ degrees toward the cylinder, and as all parts of it are the same the earth and whatever may be mingled with it slides through the apertures in the head into the cylinder, when more is thrown into the hopper. The cylinder being divided by the wings into different sections the earth within it is made to revolve at the same time with the cylinder, and as this end is the highest at each successive revolution of the cylinder the mass must come nearer the lower end of the machine. When the stones (having by their movements in the water become divested of all loose particles) have reached the lower end of the cylinder they fall from the wings upon the inclined concave surfaces and are thrown out while the small bodies which have passed between the rods of the cylinder and cannot be removed by the water settle to the bottom of the trough where they are constantly stirred by the teeth in the bar *f f*. The first tooth in the bar enters the contents of the trough first and the others follow in succession, each nearer the upper end of the trough than the preceding one, and in this manner they effectually counteract the tendency of the contents toward the lower end of the trough. When the operator desires to draw off the contents of the trough he draws upward the slide and reverses the motion of the cylinder, when the teeth by entering the trough first at the upper end, together with the inclination of the trough and the current of water, will effectually empty the trough of its contents. The machine can be elevated or depressed so as to give the contents a greater or less amount of friction as the nature of the earth in which gold is found may require.

We claim as our invention, and desire to secure by Letters Patent—

The interior cylinder with indented ends, and wings attached as described to operate as a discharging apparatus attached to the interior of an inclined revolving screen in the manner and for the purpose specified.

MERRITT PECKHAM.
LUCIUS O. PALMER.

Witnesses:
D. GILLMORE,
JAMES G. FRENCH.