

PARSONS & FISHER.

Improvement in Ore-Washers.

No. 128,973.

Patented July 16, 1872.

Fig. 1.

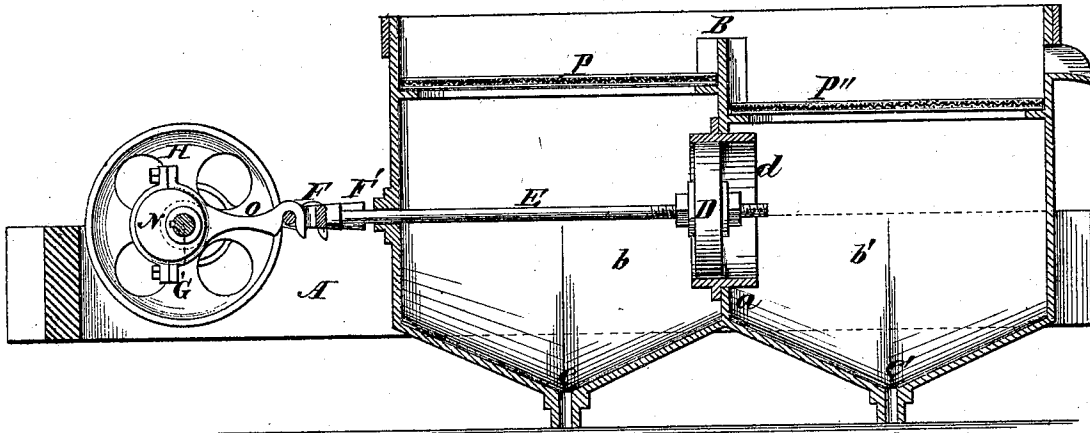
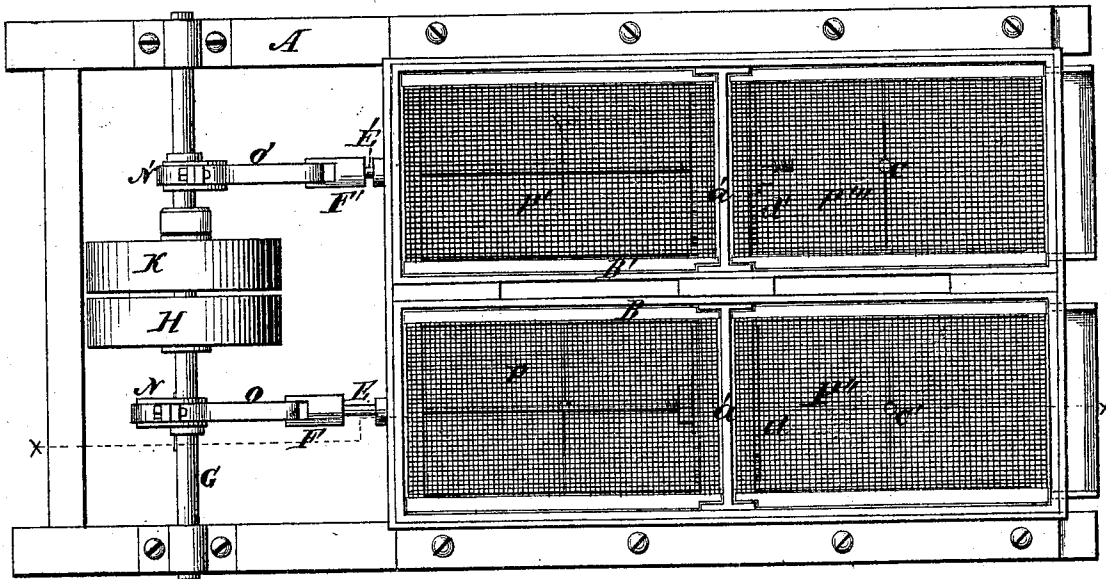


Fig. 2.



Witnesses.

Edwin J. Gaird,
R. H. Whittlesay

Inventors,
Charles B. Parsons
George W. Fisher
by
S. M. Wool

UNITED STATES PATENT OFFICE.

CHARLES B. PARSONS, OF ST. FRANCIS COUNTY, AND GEORGE W. FISHER,
OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN ORE-WASHERS.

Specification forming part of Letters Patent No. 128,973, dated July 16, 1872.

To all whom it may concern:

Be it known that we, CHARLES B. PARSONS, of St. Francis county, State of Missouri, and GEORGE W. FISHER, of the city and county of St. Louis, State of Missouri, have invented a new and useful Improvement in Ore-Washers, of which the following, is a full, clear, and exact description, reference being had to the annexed drawing making a part of this specification, in which—

Figure 1 represents a longitudinal sectional view of our apparatus. Fig. 2 represents a top plan of same.

Similar letters indicate like parts.

The object we have in view is to produce a simple and cheap ore-washer, which shall be equally effective as those now in use and yet require much less power to operate it.

A, Figs. 1, 2, is a frame which supports the apparatus, which, as shown in the drawing, is double throughout. B B', Fig. 2, B, Fig. 1, are two receivers, divided, as seen, into two compartments, each *b b'*, &c., by a partition, *a a'*. Each of these chambers has a conical bottom, as shown clearly in Fig. 1, with a discharge-outlet, *c c'*, Fig. 1, which may be provided with a stop-cock or like device for opening and closing it. In each partition *a a'* is a cylinder, *d d'*, one only being shown in each figure, in which works an ordinary piston-head, D D', as seen. The rods E E', Fig. 2, E, Fig. 1, of the pistons, pass through stuffing-boxes in the end of the chambers, as seen, and terminate in handles F F', Fig. 2, F, Fig. 1. A shaft, G, having its bearings in the frame A, as seen clearly in Fig. 2, has upon it an ordinary fast pulley, H, and loose pulley K, Fig. 2, the former only being shown in Fig. 1. On either side of these pulleys are eccentrics N N', Fig. 2, N, Fig. 1, having each a hooked arm, *o o'*, Fig. 2, *o*, Fig. 1, which engage with the handles on the rods E E', as seen in each figure. In each of the compartments *b b'*, &c., are placed screens P P', &c., P'' and P''' being each a little lower than P and P', as shown in Fig. 1.

The compartments are kept filled with water from any convenient source, which, by the action of the horizontal pump, is made to alternately pass up through the ore on the screens, and down

again, as it is evident that one stroke of the piston will draw the water down through the sieve in *b*, and at the same time force it up through the sieve in *b'*, while the return stroke will reverse the motion, thus giving a continuous circulation of the water through the ore on the sieves. The pressure of the water alternately on the different sides of the piston greatly diminishes the power required to operate them. The ore is fed on the screens P and P'' by a chute or any other convenient device, from which it passes to the screens P' P''', over the partition *a a'*, which are a little lower than the sides of the chambers, as seen clearly in Fig. 1. Of course it is only the lighter particles that are carried over this partition, as the heavier portions will drop through the meshes of the sieves P P'' into the receivers below, whence they are drawn off through the openings *c c'*. As the ore passes to the second set of screens it is subjected to another screening, after which the "tailings" escape through the openings *s s'*, Fig. 2, *s*, Fig. 1, in the end of the chamber above the sieve. In this apparatus, as is evident, one pump operates both sieves; and when the machine is made double, as shown in the drawing, either pump may be worked independently of the other, whenever it is necessary to stop one for the purpose of cleaning the sieves, repairing, &c.

To disconnect the pump it is only necessary to raise the eccentric hook and let it hang on the shaft, or rather on the eccentric, to which it is attached in such a manner that it works freely on it, while the eccentric, of course, is keyed to the shaft. When the pump is to be started the hook is thrown into gear, both operations being performed while the shaft is at full speed.

The machine as described is double, but, of course, it may be used single or triple if desired, it being susceptible of duplication to any extent deemed practicable. This apparatus, of course, is adapted to washing coals as well as ores, and by duplicating it, as shown, may be made to wash different articles at the same time.

We are well aware that there is no novelty in using but one pump for two sieves in an ore-

washer, or in having the water forced alternately through such sieves, and therefore do not claim such as our invention.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the chamber B divided into two compartments by a partition, *a*, cylinder *d*, piston D, and sieves P P', all arranged and constructed substantially as shown and specified.

2. The combination of the piston-rod E, handle F, eccentric N with its hooked arm *o*, and shaft G, as and for the purpose shown and specified.

3. An ore-washer, consisting of a chamber, B, divided into two compartments by a partition, *a*, sieves P P', cylinder *d*, piston D with its rod E, handle F, eccentric N with its hooked arm *o*, and shaft G, all arranged, constructed, and operated substantially as and for the purpose shown and specified.

CHARLES B. PARSONS.
GEO. W. FISHER.

Witnesses:

SAML. S. BOYD,
J. W. COLLINS.