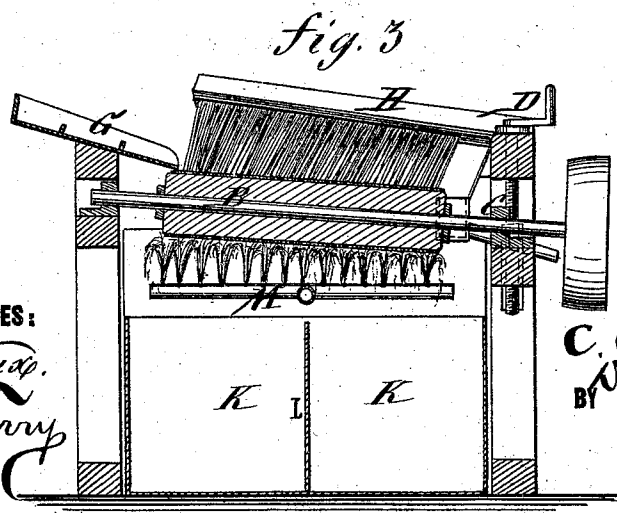
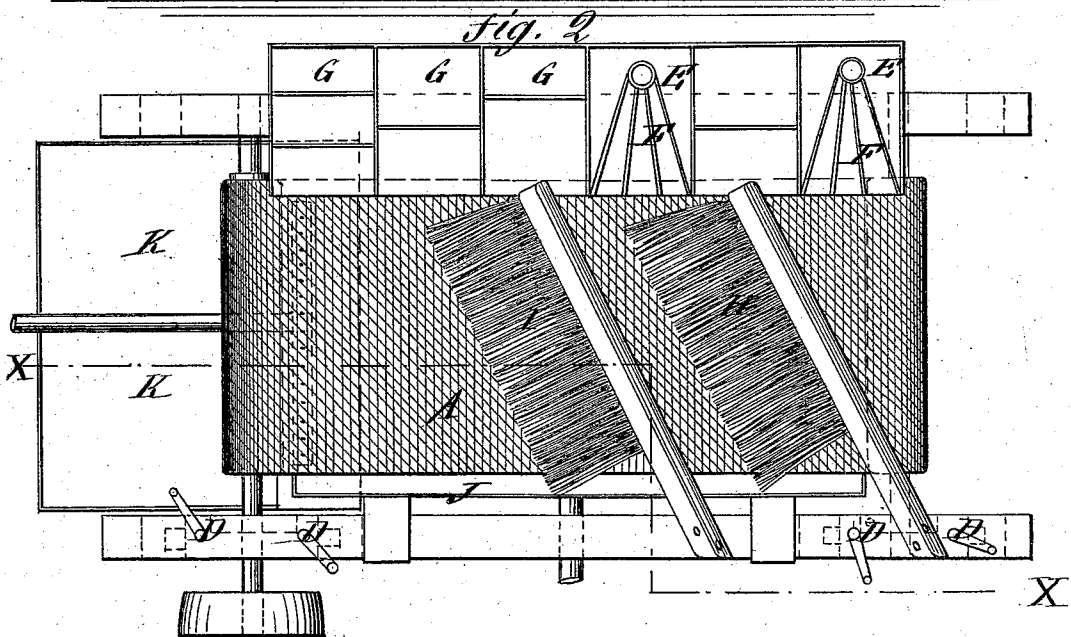
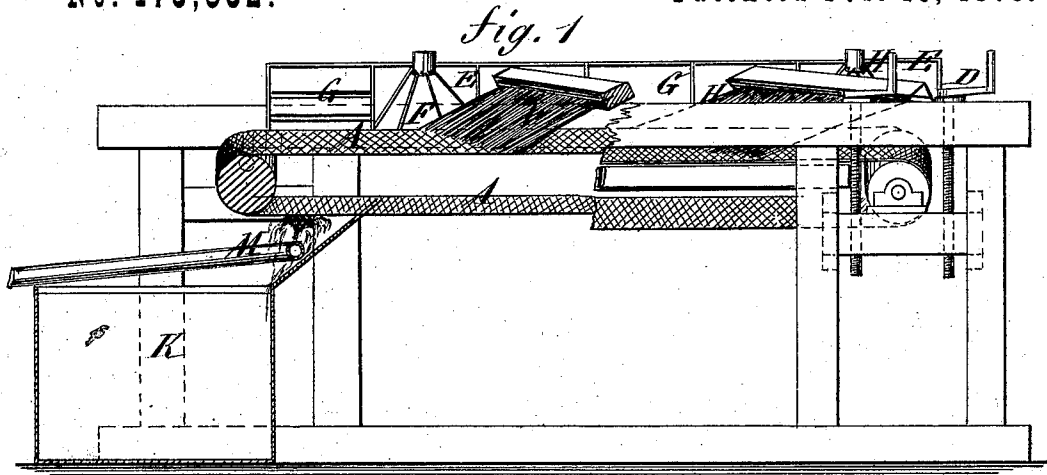


C. CRANE & D. F. McKIM.

ORE-CONCENTRATOR.

No. 173,532.

Patented Feb. 15, 1876.



WITNESSES:
C. N. V. S. S.
A. F. Terry

INVENTOR:
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BY
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ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES CRANE AND DAVID F. McKIM, OF PARLEY'S PARK, UTAH TER.

IMPROVEMENT IN ORE-CONCENTRATORS.

Specification forming part of Letters Patent No. **173,532**, dated February 15, 1876; application filed September 4, 1875.

To all whom it may concern:

Be it known that we, CHARLES CRANE and DAVID F. McKIM, of Parley's Park, in the county of Salt Lake and Territory of Utah, have invented a new and Improved Slime and Sulphuret Concentrator, of which the following is a specification:

Our invention consists of an endless carrier, of canvas or other material, slightly inclined laterally, along the upper side of which, near the receiving end, are spouts or troughs with fan-shaped corrugations, for distributing the slime in thin layers on the carrier as it slowly passes along, and near the other end are spouts for discharging clear water, for washing the matters received from the other spouts while being carried along under stationary brushes or brooms arranged above the carrier for stirring the matters on it. Below the carrier is a sluice for receiving the tailings washed off from the lower edge of the carrier, and at the end is a box to receive the ore, the box being divided parallel to the longitudinal axis of the carrier, to separate the ore into two grades. Directly behind where the ore falls into the box is a perforated pipe for discharging jets of water up to the carrier, for washing off any particles that may adhere to it.

Figure 1 is partly a side elevation and partly a sectional elevation of the machine, the section being taken on the line *x x* of Fig. 1. Fig. 2 is a plan view, and Fig. 3 is a transverse section, of the machine.

Similar letters of reference indicate corresponding parts.

A is a wide endless carrier of canvas, arranged horizontally on rollers or drums B, which are a little inclined, to carry the carrier higher at one side than the other, and they have adjustable bearings C at one end, with adjusting-screws D for varying the inclination of the carrier. Along the upper side, and near the receiving end of the carrier, are two boxes or spouts, E, with radiating or fan-shaped corrugations F, for discharging the ore upon the carrier, and at the same time spreading it out in a thin layer, to be washed by clear water,

which is also discharged upon the carrier from the same side, at suitable intervals, through spouts G, the spouts having riffles to check the currents. H is a broom or brush between the spouts E, for stirring the first layer of ore, and I is another one, for again stirring the ore after the second layer is received from the second spout, E. J is the sluice for receiving the tailings washed off over the lower side of the carrier by the clear water. K is the box for receiving the washed ore from the carrier; L, the partition for separating the ore into two different grades, the heaviest being that which is discharged from the upper side, and the lighter that which is washed by the water to the lower side of the carrier and discharged therefrom. M is the perforated pipe for discharging jets of water upon the carrier where it passes under the roller, to wash off any particles adhering to it.

By the simple method of adjusting the carrier to vary the inclination, the machine can be readily adjusted to different kinds of ores, and by the easy method of spreading the ores on the carrier and washing them, the machine is rendered very simple and easy to operate.

The sluice J, for receiving the tailings, may, if they be valuable, be made to discharge upon another carrier, to be again washed in the same manner, if desired.

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

1. The combination, with laterally-inclined endless carrier A, of ore-spouts E, having fan-shaped corrugations F, the riffing water-spouts G, and brushes H I, as and for the purpose described.

2. The combination, with endless carrier A, of supporting-rolls B, journaled at one end in adjustable bearings, as shown and described, to adapt the machine to different kinds of ores.

CHARLES CRANE.
DAVID F. McKIM.

Witnesses:

WILLIAM CRANE,
O. CROWELL.