Patent No. 864,776

H. FOUST.
ORE CONCENTRATING JIG.
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Inventor

Witnesses
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To all whom it may concern:

Be it known that 1, HENRY FOUST, a citizen of the United States of America, residing at Baxter Springs, in the county of Cherokee and State of Kansas, have invented certain new and useful Improvements in Ore-Concentrating Jigs, of which the following is a specification.

This invention relates to new and useful improvements in ore concentrating jigs and has relation more particularly to that class wherein the water is forced through the ore upon a stationary bed.

It is an object of the invention to provide a novel device of this character wherein the water for cleaning the ore is supplied from both sides of the ore cells.

This arrangement has been found to supply a more even and uniform motion, and feature which in practice has been found most essential.

It is also an object of this invention to provide in a device of this character novel means whereby the ore may be drawn from the cells automatically.

Furthermore, it is an object of this invention to produce a device of the character noted, which will possess advantages in points of simplicity, efficiency and durability, proving at the same time comparatively inex-

pensive to manufacture.

With the foregoing and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings, forming part of this specification wherein like characters denote corresponding parts in the several views, in which—

Figure 1, is a cross section of the device constructed according to the present invention. Fig. 2, is a longitudinal section taken on a line in front of the valves, said valves being shown in elevation.

In the drawings 1, denotes a receptacle of any desired dimension. The receptacle is provided with a converging false bottom 2, the inclination of said bottom being traversely of the receptacle. Extending longitudinally of the receptacle and terminating away from the bottom thereof are partitions 3, which divide the receptacle into side compartments 4, and the central compartment 5. The central compartment is divided centrally by a partition 6, into two ore cells, but as both are of the same construction, but one will be described. The said compartments 4, are also divided centrally by partitions 7, forming plunger cells.

Fitting within the ore cell is a removable mesh 8, which is supported in position by the lining 9. Positioned centrally of the mesh is a valve casing 10, which is supported and held thereabove a suitable distance by the legs 11. Mounted within the casing is the valve 12, which rides therein and rests on the free end of the pipe 13, which passes through the mesh and terminates at a point exterior of the receptacle 1. Threaded in the top of the casing is the head 14, provided with the air vent 15.

Within the plunger cells are the plungers 16, which are pivotally secured to the rod 17, and provided with a collar 18, engaging the eccentric 19, on the shaft 20. Each plunger is provided with its two rods and their intermediate parts.

In order that the plungers on the opposite sides of the receptacle may be moved in unison, a pitman 21, is secured to wheels 22, fixed on the free ends of the shafts 20. Intermediate each of the shafts 20, is a pulley 23, adapted to be engaged by a belt 24, passing around the compound pulley 25, fixed on the power shaft 26. Said shaft 26, is mounted on bearings 27, supported on the scaffolding 28, carried by the receptacle 1. On the end of the shaft 23, is a power wheel 27', which is connected in any suitable manner with a proper source of power.

This invention is intended primarily for use in separating zinc or lead ores, although it is to be understood that it can be employed with equal facility with any ore. In operation the crushed stone or raw material is fed within one of the ore cells by an inclined table 29, the same being moved by a flow of water therethrough. As the ore gradually rises on the mesh, the weight thereof, after it has reached a certain height, will force the ore within the casing 10, entering therein between the legs 11, and elevate the valve 12, and pass out through the pipe 13. It is to be noticed that the upper edge of this pipe is recessed. This is done to prevent the valve 12 from sticking to the pipe 13. At the same time the plungers are reciprocated within the plunger cells by their operating parts. Water is fed within the plunger cells through the sluice-ways 30, and the water is forced up through the mesh 8, from both sides of the ore cells which thoroughly cleans the ore and forces the dress or flint to the top which is carried off as will, it is thought, be plainly understood. The discharge from the cells is made over the table 29. As the ore settles on the mesh and gradually rises, it elevates the valve 12, within the casing 10, and is carried off through the pipe 13. By this arrangement, the ore bed is kept uniform in thickness.

As the finer particles of ore are apt to congregate on the false bottom, a discharge or withdrawal pipe 31, is provided. The pipes 13 and 31, are provided with the controlling valves 32, and 33, respectively.

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

1. In combination, ore cells, a mesh in each of the cells, a converging bottom positioned beneath the cells, a valve casing supported by each of the meshes and held a distance thereabove, discharge pipe leading from within the valve casings to the exterior of the cells, a valve within each casing resting on the discharge pipe thereof, and means on both sides of the cell acting in conjunction with
the converging bottom for forcing a liquid through the meshes.

2. In combination, ore cells, a mesh in each of the cells, a valve casing supported by each of the meshes and held a distance thereabove, discharge pipes leading from within the valve casing to the exterior of the cells, a valve within each casing resting on the discharge pipe thereof, the ends of the discharge pipe with which the valves contact being provided with recesses, and means for forcing liquid through the meshes.

3. In combination, ore cells, a mesh in each of the cells, a valve casing supported by each of the meshes, said valve casing having a vent in its top, discharge pipes leading from within the valve casing to the exterior of the cells, a valve within each casing resting on the discharge pipe thereof, the ends of the discharge pipe with which the valves contact being provided with recesses, and means for forcing liquid through the meshes.

In testimony whereof I affix my signature in the presence of two witnesses this 20th day of Nov'r, 1906.

HENRY FOUST.

Witnesses:

FRED R. JOLLY,

Geo. Foust.