J. W. DILLON.

Machine for Drying Slimes.

No. 202,709. Patented April 23, 1878.

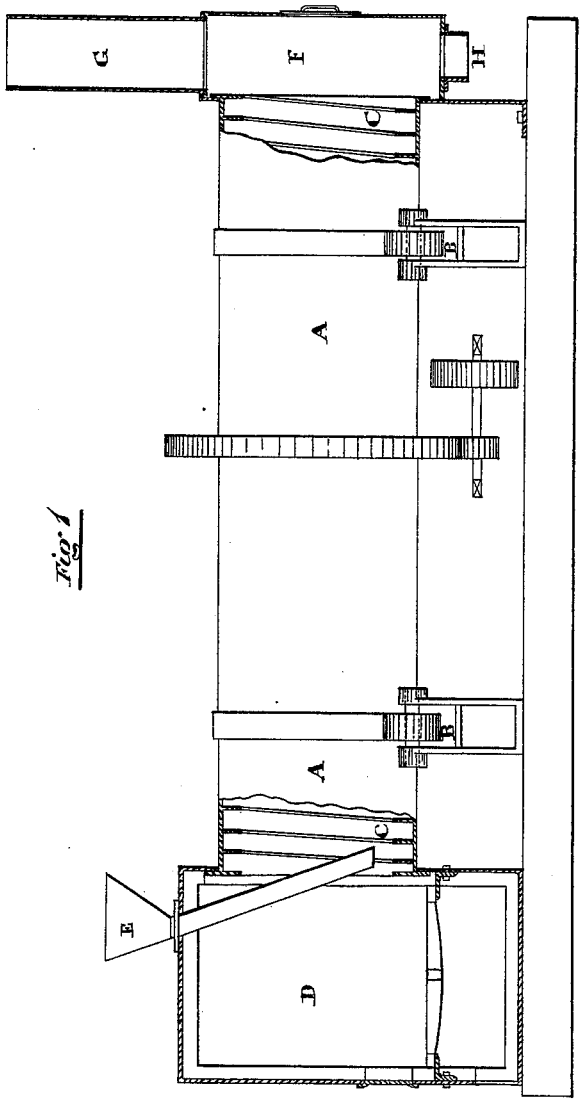

Fig. 1

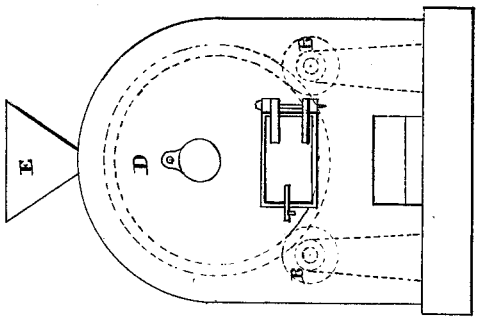

Fig 2

Witnesses

Geo Shipman

Chas J Holland

Inventor

James Walker Dillon

per John W Parker

Atty.

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UNITED STATES PATENT OFFICE.

JAMES W. DILLON, OF VIRGINIA CITY, NEVADA, ASSIGNOR OF ONE-THIRD HIS RIGHT TO E. L. BUCKINGHAM, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR DRYING SLIMES.

Specification forming part of Letters Patent No. **202,709**, dated April 23, 1878; application filed February 4, 1878.

To all whom it may concern:

Be it known that I, JAMES W. DILLON, of Virginia City, county of Storey, and State of Nevada, have invented a new and useful Machine for Drying Slimes, which invention is fully set forth in the following specification, reference being had to the accompanying drawing.

The object of my invention is as follows: In the reduction of gold and silver bearing quartz by what is known as the "wet process," a certain amount of the rock is crushed to such an impalpable state that it will not settle in the settling-tanks in the limited time allowed. It therefore flows off with the water into the reservoirs used for the purpose of saving them. Here the water evaporates, leaving what is known as "slimes." These slimes are afterward worked when they have become dry, which is a necessity.

During the winter it is impossible to dry these slimes by natural evaporation, and the object of my invention is to furnish a machine for drying them by heat.

Figure 1 of the accompanying drawing is a side elevation, partly in section, as shown by the break at each end of the cylinder A. Fig. 2 is an end view.

A is a metal cylinder, covered on the outside with some non-conducting substance, and revolving slowly on the rollers B B. Fastened to the interior surface of this cylinder, and revolving, of course, with it, is a spiral, C C, running the whole length. This is not a solid screw, but projects only some three or four inches from the interior surface, leaving quite a space for the passage of the heat through the cylinder.

D is the furnace, made of metal, and lined with fire-brick or other suitable material. E shows the hopper for receiving the slimes. F is the breeching; G, the smoke-stack; and H is the discharge-hole, through which the slimes drop after having traversed the cylinder.

The action of my machine is as follows: The wet slimes are shoveled into the hopper E, Fig. 1, whence they drop down to the end of the cylinder, and are deposited in the groove made by the spiral. The revolving motion of the cylinder causes the slimes to slip along the groove until they are finally discharged at the other end of the cylinder, and fall through the hole H. During this process the slimes are exposed to the direct heat passing through the cylinder, also the heat accumulated in the sides of the spiral groove, and in the cylinder itself, thereby becoming thoroughly dried.

I am aware that revolving driers connected with a furnace by pipes for conveying hot air into their interiors have been used.

I am also aware that gravel-driers have been constructed having a stationary drying-chamber located between the furnace and smoke-stack, also revolving driers within an inclosing casing, by means of which the products of combustion from a furnace are conducted through their interior; but I do not claim, broadly, anything shown therein.

The result sought is accomplished by my invention by a much simpler and more economical construction than by any of the forms heretofore used.

What I claim, and desire to secure by Letters Patent, is—

In an apparatus for drying slimes, a rotating cylinder provided with an interior spiral flange, in combination with a furnace having one of its ends journaled in the wall thereof, so that it is entirely open to the fire-chamber, while its opposite end connects with the smoke-stack, whereby the products of combustion remain in constant contact with the material to be dried in their passage through the cylinder, substantially as described, and for the purpose specified.

JAMES WALKER DILLON.

Witnesses:
JOHN W. PARKER,
GEO. SHERMAN.