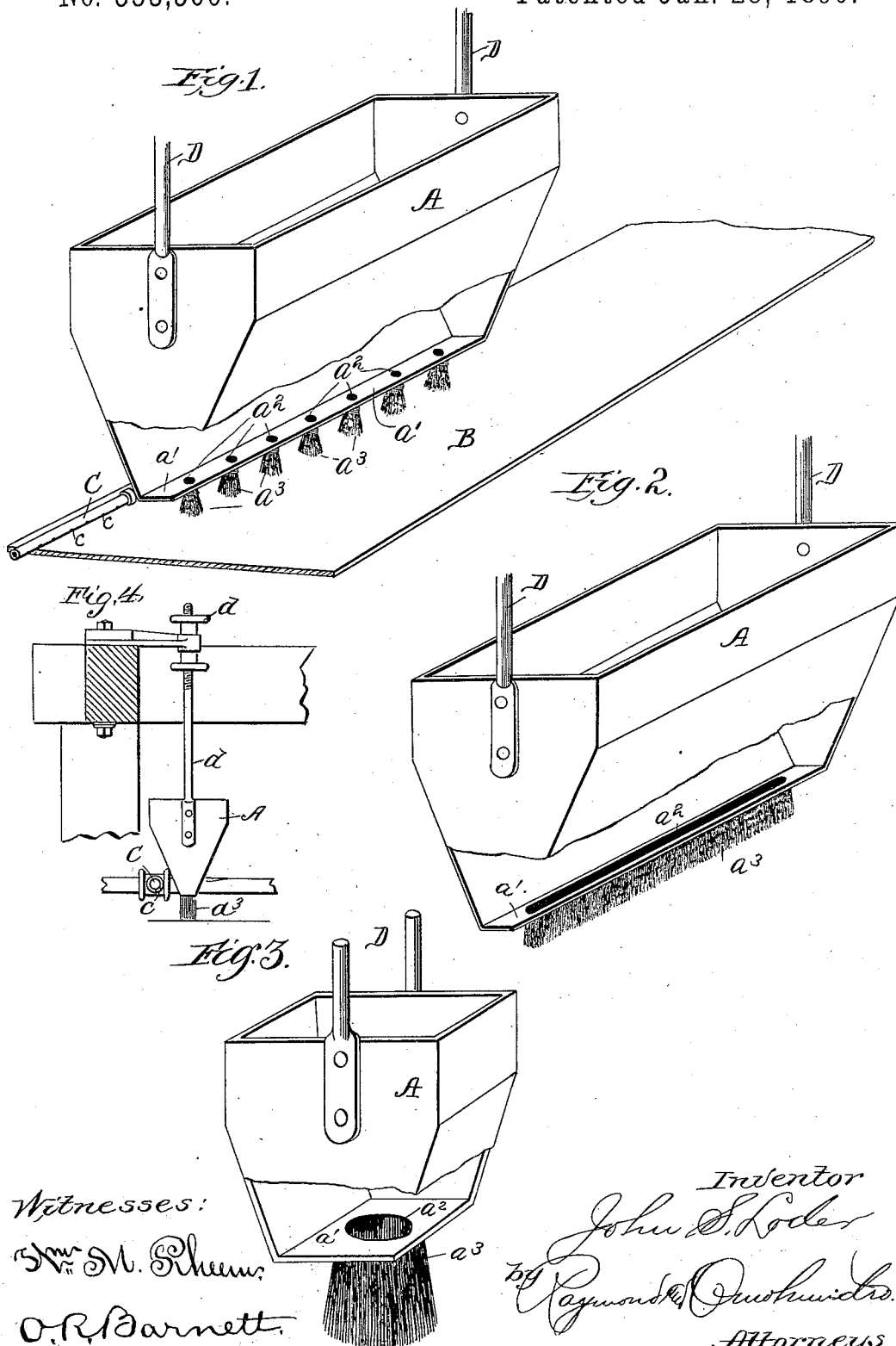


(No Model.)

J. S. LODER.
ORE CONCENTRATOR APPARATUS.

No. 553,560.

Patented Jan. 28, 1896.



Witnesses:

Wm. M. Schum.

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UNITED STATES PATENT OFFICE.

JOHN S. LODER, OF OURAY, COLORADO, ASSIGNOR OF THREE-FOURTHS TO
ALEXANDER CUNINGHAME, OF BIRMINGHAM, ALABAMA.

ORE-CONCENTRATOR APPARATUS.

SPECIFICATION forming part of Letters Patent No. 553,560, dated January 28, 1896.

Application filed April 29, 1893. Serial No. 472,305. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. LODER, a citizen of the United States, residing at Ouray, county of Ouray, State of Colorado, have invented a certain new and useful Improvement in Ore-Concentrator Apparatus; and I declare the following to be a full, clear, and exact description of the invention, such as it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object the provision of a means for spreading the ore-pulp onto the belt of an ore-concentrator which shall prevent the finer and lighter particles of mineral from being washed off and carried away with the tailings. Heretofore it has been customary to deliver the pulp onto the belt by a nozzle or a series of nozzles, and immediately beyond the pulp-nozzle to provide a series of jets of water arranged usually on a diagonal line from end to end of the belt; but the difficulty has been that with the pulp simply dropped onto the belt the air-bubbles in the water, and even the water itself, have picked up the finer particles of mineral and carried them off with the tailings. In the apparatus contemplated by my present invention the pulp, instead of being discharged loosely onto the belt, is caused to adhere firmly thereto, as will be hereinafter described.

The invention consists in a combination of devices and appliances hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of a portion of an ore-concentrator, illustrating my invention. Fig. 2 shows a variation in the form of the delivery-box. Fig. 3 illustrates the invention applied to the old form of concentrator-spout. Fig. 4 is an end elevation illustrating means for adjusting the apparatus.

In carrying out the invention, A represents a suitable receptacle into which the pulp is introduced. The sides of the lower portion are preferably tapered to direct the contents to the narrow bottom a' . In this bottom portion is a series of orifices a^2 provided with

discharge-spouts. Around these spouts are fastened bristles a^3 , thus forming hollow brushes through which the pulp passes.

B is the belt driven and caused to quiver in any suitable manner.

C is the water-pipe provided with jets through which the water is forced onto the belt and pulp.

The receptacle A is hung from rods D, which are made vertically adjustable by means of the hand-wheels d , as illustrated in Fig. 4, wherein but one rod is shown. The elevation or depression of the receptacle carries the brushes toward or from the belt, and thus causes them to bear on the latter with a greater or less pressure.

The operation is as follows: The pulp is introduced into the receptacle H and by gravity is fed through the orifices a^2 , but before reaching the moving belt underneath it must pass through the bristles composing the brushes a^3 . This exerts a pressure on the pulp, causing it to be pressed tightly onto the surface of the belt, where it will adhere until washed off. At the same time the bristles break up any air-bubbles that may be in the pulp or water and thus prevent the lighter or finer particles from being carried off with the tailings. After passing the line of jets c it is washed into a suitable receptacle.

Instead of a series of orifices in the bottom of the receptacle A, a slot or elongated opening might extend along the bottom and a row of bristles or brushes surround the slot; or if the invention is applied to the concentrators now in use the nozzle through which the pulp is discharged might be surrounded with bristles, the object of the invention being to cause the pulp to be thoroughly "plastered" onto the belt and caused to adhere firmly thereto. In this way the concentration is accomplished by the use of much less water, and is accomplished much more thoroughly and satisfactorily and with practically no loss of the mineral.

While I have shown and described the employment of bristles or brushes for plastering the pulp to the belt, yet it is obvious that other flexible and pliable material might be

used without departing from the spirit of my invention.

What I claim is—

1. In an ore concentrator the combination
5 with the dressing belt and a water supply for the belt of a hollow brush through which the pulp is discharged onto the belt, substantially as described.

2. In an ore concentrator the combination
10 with the belt and a water conduit provided with jet orifices, of one or more hollow brushes located above the belt and in advance of the conduit, through which the pulp is discharged onto the belt, said brush or brushes being
15 vertically adjustable, substantially as described.

3. In an ore concentrator the combination with the belt and a water conduit provided

with jet orifices, of a pulp receptacle located above the belt and in advance of the conduit, 20 the bottom of said receptacle provided with a series of hollow brushes through which the pulp is discharged, substantially as described.

4. In an ore concentrator the combination with the belt and a water conduit provided 25 with jet orifices, of a vertically adjustable pulp receptacle located above the belt and in advance of the conduit, the bottom of said receptacle provided with a series of hollow brushes through which the pulp is discharged, 30 substantially as described.

JOHN S. LODER.

Witnesses:

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