

(No Model.)

G. L. CUDNER.
ORE CONCENTRATOR.

No. 473,449.

Patented Apr. 26, 1892.

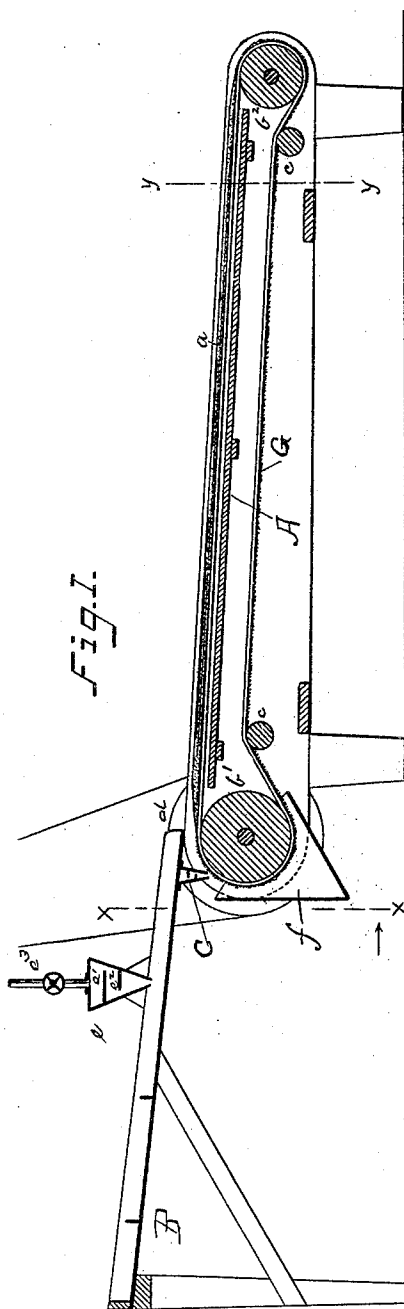


Fig. I.

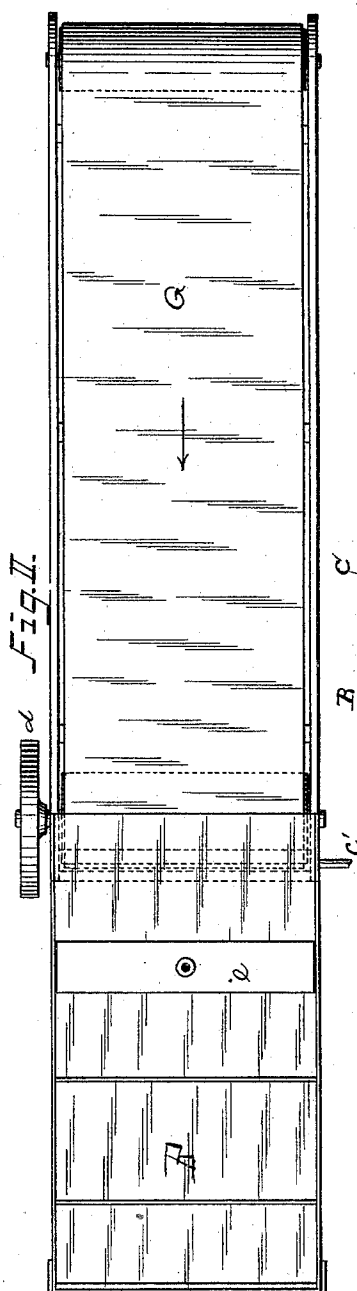


Fig. II.

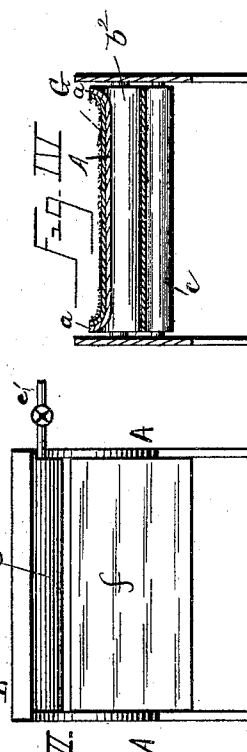


Fig. III.

WITNESSES:

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UNITED STATES PATENT OFFICE.

GUSTAVIS LORRIMER CUDNER, OF NEW YORK, N. Y., ASSIGNOR OF FOUR-FIFTHS TO JACOB RUPPERT, JR., GEORGE E. METZ, AND ADAM E. SCHATZ, OF SAME PLACE.

ORE-CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 473,449, dated April 26, 1892.

Application filed January 6, 1891. Serial No. 376,828. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVIS LORRIMER CUDNER, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented a certain new and useful Improved Ore-Concentrator, of which the following is a specification.

My invention relates to an improved ore-concentrator in which an endless carpet, rep, or corduroy belt runs over drums or rollers and over a bed or platform, the edges of which are turned to form a sluiceway, and in which the concentrates are collected by being carried toward a stream of water.

In the drawings, Figure I represents a longitudinal section of a machine embodying my invention. Fig. II represents a top plan view. Fig. III represents a section of the machine, showing the method of distributing the water to wash the concentrates from the carpet or cloth belt, on the line X X, Fig. I. Fig. IV is a section on line y y of Fig. I.

Similar letters represent like parts.

A represents a table, the edges of which are raised at a' to prevent the escape of any material over its sides and having at each end a drum b' b^2 and the rollers c c . The drum b' is provided with a driving wheel or pulley d , or other means to revolve the same. Under the drum b' is fixed a trough f of suitable shape to receive the concentrates when released from the carpet or cloth belt G.

B is a table or sluiceway upon which the ore is laid and fed upon the belt.

e is a V-shaped water-distributor having the breaker-shelves e' e^2 and an opening at the under edge for the purpose of distributing the water in a forced sheet across the sluiceway B, the distributor being fed from above by the pipe e^3 . Underneath the sluicetable and directly over the belt is another water-distributor C, constructed in like manner to the water-distributor e , but set in such a manner that the water strikes the carpet while the nap of the carpet or rep is spread open by reason of the belt traveling over the

drum b' , the belt traveling toward the distributor or washer and the force of the water being regulated and sufficient to dislodge any particle of metal that may have settled in the nap or ridges of the belt.

A valved pipe for supplying water to the distributor C is shown at c' in Fig. III.

When in operation the wet ore pulp is fed from the table B, which is inclined toward the belt, gravity carrying the pulp onto and over the belt. When the belt is sufficiently covered with concentrates from the ore pulp, the feeding is stopped and the water turned on in the distributor e and all of the gangue which can be dislodged by water run off the belt. The distributor e is then stopped, and the water is turned on in distributor C, and the drum b' is revolved, and the belt run toward the distributor C. The nap or ridges of the belt are opened or spread by reason of passing over the drum b' . The water in the distributor C is forced through under pressure with sufficient force to dislodge any particle of metal that may have lodged on the belt, and the concentrates are caught in the trough f , from which they are recovered by suitable means. The trough may be stationary or removable.

The rollers c c are provided for the purpose of making a clear discharge at either end and preventing the sagging of the belt, but may, however, be dispensed with.

I am aware that endless belts have been used heretofore for the purpose of concentrating ore; but in all such machinery the belts were washed by the water being run over them in the same direction that the belt is run, whereas in my machine the belt is run toward the water and the concentrates are washed out by the force of the water striking the belt at the point where it is run over the drum b' .

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

In an ore-concentrator, the combination, with the inclined table A, having the drums b' b^2 , carrying the ribbed-fabric belt G, of the

inclined sluiceway B, having its discharge
over the upper drum *b'*, the water-distributor
e over the sluiceway, the water-distributor C,
located over the drum *b'* at a point one side
5 of its vertical radius, and the trough *f* under
the drum *b'*, substantially as described.
Signed at New York, in the county of New

York and State of New York, this 9th day
of December, A. D. 1890.

GUSTAVIS LORRIMER CUDNER.

Witnesses:

RICHARD LIPS,

GEORGE E. METZ.