(No Model.)

H. J. MÜLLER.

ORE SEPARATOR.

No. 248,196. Patented Oct. 11, 1881.

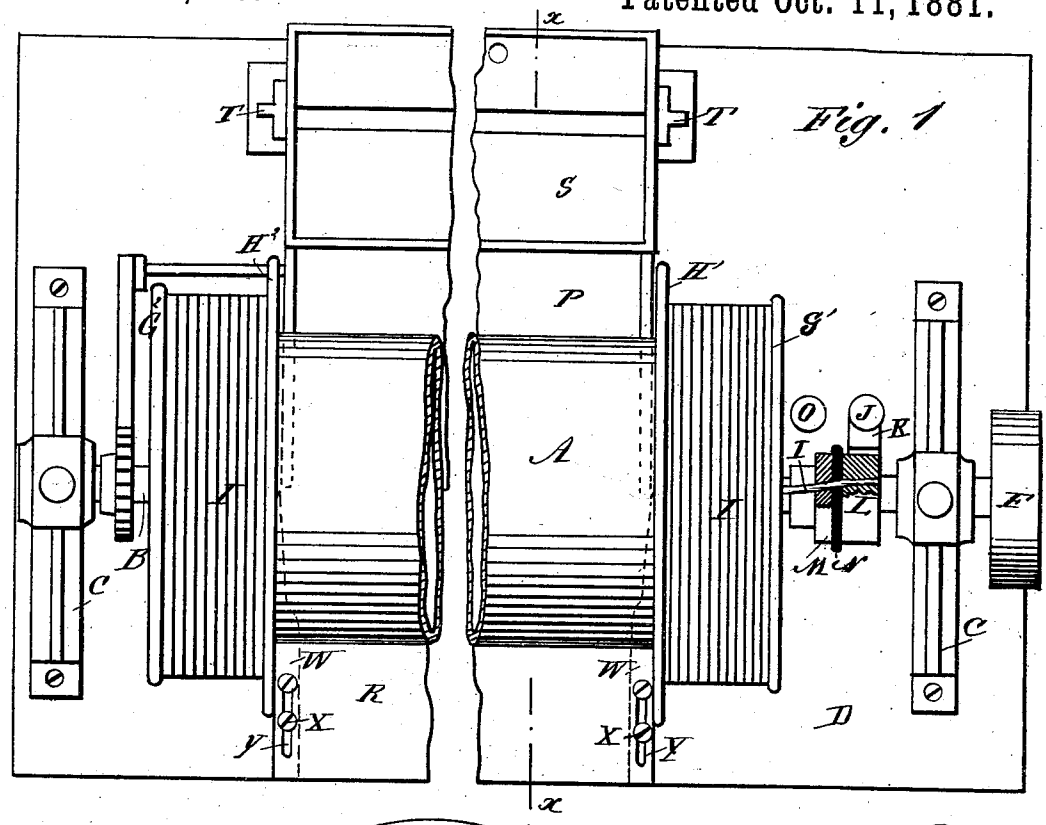


Fig. 1

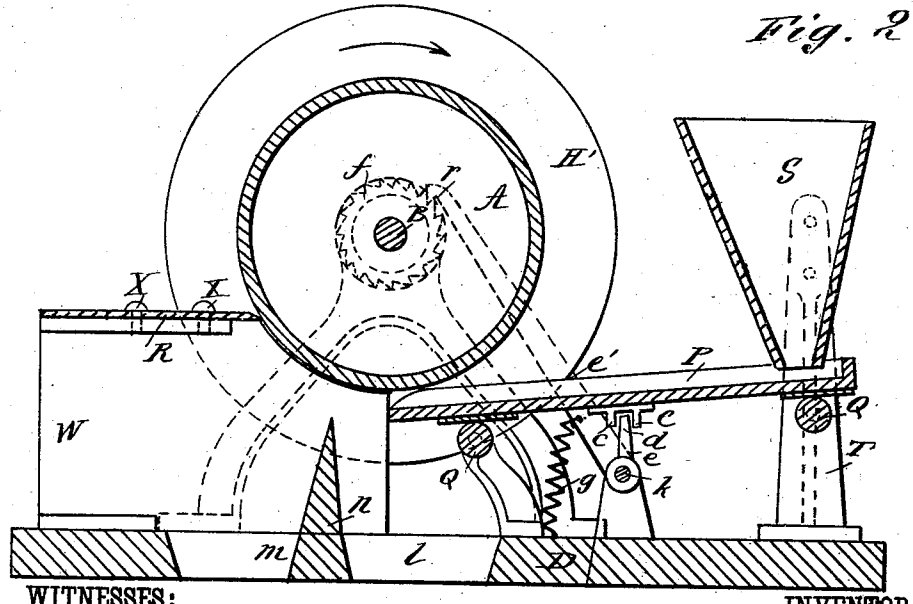


Fig. 2

WITNESSES:

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UNITED STATES PATENT OFFICE.

HANS J. MÜLLER, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND ALEXANDER LEVETT, OF SAME PLACE.

ORE-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 248,196, dated October 11, 1881.

Application filed April 11, 1881. (No model.)

To all whom it may concern:

Be it known that I, HANS J. MÜLLER, of the city, county, and State of New York, have invented a new and Improved Ore-Separator, of which the following is a specification.

The object of my invention is to provide a new and improved device for separating particles of iron, steel, &c., from granulated or pulverized ore or other material.

In the accompanying drawings, Figure 1 is a plan view of my improved ore-separator. Fig. 2 is a cross-sectional elevation of the same on the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A solid or hollow cylinder, A, of steel or iron, is rigidly mounted on a shaft, B, journaled in the end uprights, C C, resting on a base-plate, D. A driving-pulley, F, is rigidly mounted on one end of the shaft, or the shaft may be provided with other suitable devices for rotating it. Annular plates G′ G² are fastened edgewise on the curved surface of the cylinder A at the ends, and like plates, H′ H², are fastened to the cylinder a short distance inside of the plates G′ G². Electro-magnet wires I I are wound around the cylinder between these plates, whereby a double pole is formed between the coils. The wires from a dynamo-machine or a battery are held to the plate by the binding-screws J and O, and the former of these screws rests on the bottom of a spring strip of metal, K, the upper end of which rests against an isolated ring, L, of the shaft. This ring L is attached to a ring, M, rigidly mounted on the shaft B, and having a layer, N, of insulating material, on the side toward the ring L. The wire I passes from the end coil through the ring M, the layer N of insulating material, to the ring L. A hopper, S, is held parallel with the cylinder A by two standards, T, resting on the base-plate D. A platform or shelf, P, is supported below the hopper S by the rollers Q Q, and extends below the cylinder A to the central line of the same, quite close to the cylinder. Two jaws, *c c*, or a recessed plate, are attached to the under side of the shelf or platform P, and the end *d* of an arm, *e*, of a shaft, *k*, passes in between the jaws *c c*, and the end of an arm, *e′*, of a shaft, *k*, provided with a tooth, *r*, is held against a ratchet-wheel, *f*, by a spring, *g*. The base-plate D is provided with a longitudinal slot, *l*, with beveled sides under the edge of the platform or shelf P. The base-plate D is provided with a like longitudinal slot, *m*, in the opposite side, these two slots being separated by a longitudinal beveled partition, *n*, extending upward within the outer edge of the rings H′ H², and by which the sand and other non-metallic substances are arrested and compelled to fall into the slot or receptacle *l*. A plate, R, rests on two side pieces, W, parallel with the end of the cylinder and extending in between the annular plates H′ H², and resting on the base-plate D. The plate R is provided with transverse slots Y Y at the ends, through which slots screws X X pass into the upper edges of the side pieces, W, thus permitting the edge of the plate R to be adjusted at a greater or less distance from the cylinder A.

The operation is as follows: The pulverized material is placed into the hopper S and drops from there upon the platform or shelf P, which is vibrated by the action of the ratchet-wheel *f* on the tooth *r* of the arm *e′*, and consequently on the arm *e* of the shaft *k*. The sand or granulated material slides down the platform or shelf P, which is slightly inclined. The particles of iron or steel cling to the cylinder A, and are scraped from the same by the plate R, and drop into the slot *m* or into the receptacle below it. The particles of sand or granulated materials drop from the edge of the shelf or platform P into the slot *l* or the receptacle below it.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the hopper S and the cylinder A, of the inclined shelf P, extending with one end below the hopper, and the other below the cylinder, the rolls Q, the plate having jaws *c c*, the shaft *k*, having arm *e d*, the spring *g*, arm *e′*, having tooth *r*, and the ratchet-wheel *f* on shaft B, whereby the shelf is vibrated, as set forth.

2. In an ore-separator, the scraper R, the two side pieces, W, slotted at Y Y, and the adjusting-screws X, in combination with the magnetic cylinder A, the vibrating shelf P, and the bed-plate D, having a vertical partition, *n*, and slots *l m*, whereby the metallic and non-metallic substances in the ore may be separated and caused to fall into different receptacles, as set forth.

HANS J. MÜLLER.

Witnesses:
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