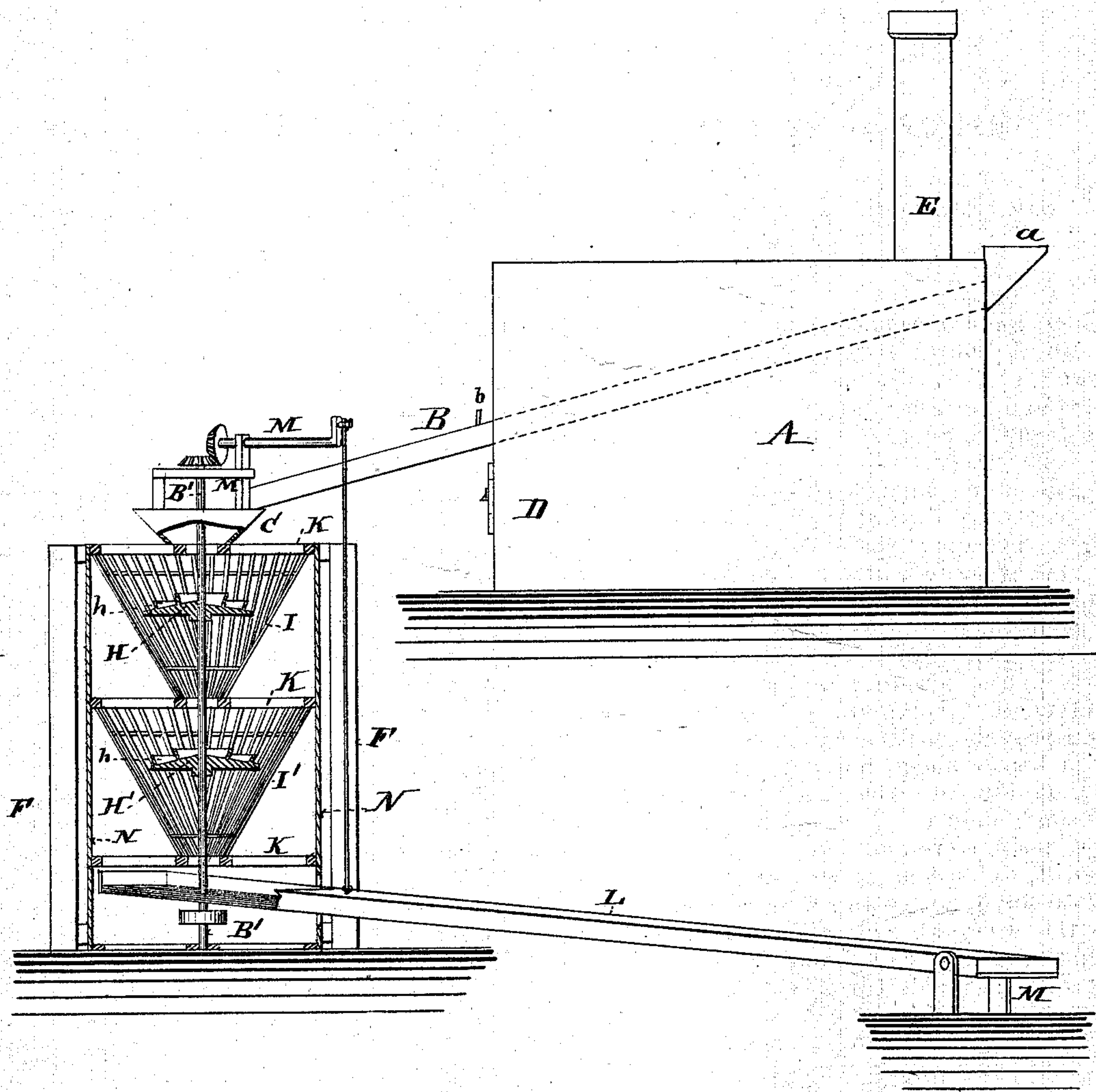


A. GOODHART.

Separators for Iron and other Ores.

No. 139,782.

Patented June 10, 1873.



Witnesses:
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UNITED STATES PATENT OFFICE.

ALEXANDER GOODHART, OF NEWVILLE, PENNSYLVANIA.

IMPROVEMENT IN SEPARATORS FOR IRON AND OTHER ORES.

Specification forming part of Letters Patent No. 139,782, dated June 10, 1873; application filed November 14, 1872.

To all whom it may concern:

Be it known that I, ALEXANDER GOODHART, of Newville, in the county of Cumberland and State of Pennsylvania, have invented an Iron-Ore Separator, of which the following is a specification:

The invention consists in separating dirt from ore by drying them both together and then detaching the dirt by concussion. It also consists in a new mode of combining instrumentalities for drying the ore and dirt and for detaching the latter.

The drawing represents a side elevation.

A in the drawing represents an oven, arranged for drying the ore as it is exhumed, and provided with a mouth or feed-hole, *a*. B is a heavy sheet-iron pan, passing through the middle of oven and receiving the ore through hole *a*. C is the hopper into which the desired ore and dirt are discharged from pan B, which has the sliding gates *b* that regulate the quantity and time of discharge. D is the fire-place, and E the smoke-stack. F represents a series of posts which form a frame, preferably about three feet square and four feet high, while B' is the cylinder-shaft. H H' are cast-iron heads, about twenty inches in diameter, and provided with the four flanges *h* on each one. I I' are circular cribs, which may be made of cast-iron grates, of iron rods, or of heavy wire screens, and K K K are circular wooden rings or fellies, to which said cribs are attached. L is a shaking-screen, and M M are the frame and fixtures for working it. N is a sheet-iron cylinder placed out-

side of the wooden rims or fellies, for the purpose of stopping all dirt that passes through cribs and conveying it to the shaking-screen below. B' is the pulley by which the shaft is driven.

The operation is as follows: The freshly-dug and unwashed ore is fed into oven through hole *a* upon the oven-pan B, where it remains until dry. It is then discharged into hopper C and upon the upper flanged head H, which throws it against the crib I; from thence it passes to the lower head H', whose flanges *h* throw it against the lower crib I; from thence the ore passes to the shaking-screen L, which eliminates the dirt. It will thus be perceived that the ore is cleaned completely without washing.

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

1. A supply feed-hopper, C, rotary heads H H', cribs I I' and screen L, combined and arranged as and for the purpose described.
2. The combination, with feed-hopper, of oven having pan B discharging thereinto, as and for the purpose described.
3. The described method of cleaning ore by drying it as it comes from the earth and then separating the soil therefrom, thereby dispensing altogether with the washing operation.

ALEXANDER GOODHART.

Witnesses:

D. H. GILL,
WILLIAM BISHOP.