

W. L. MUENDER.

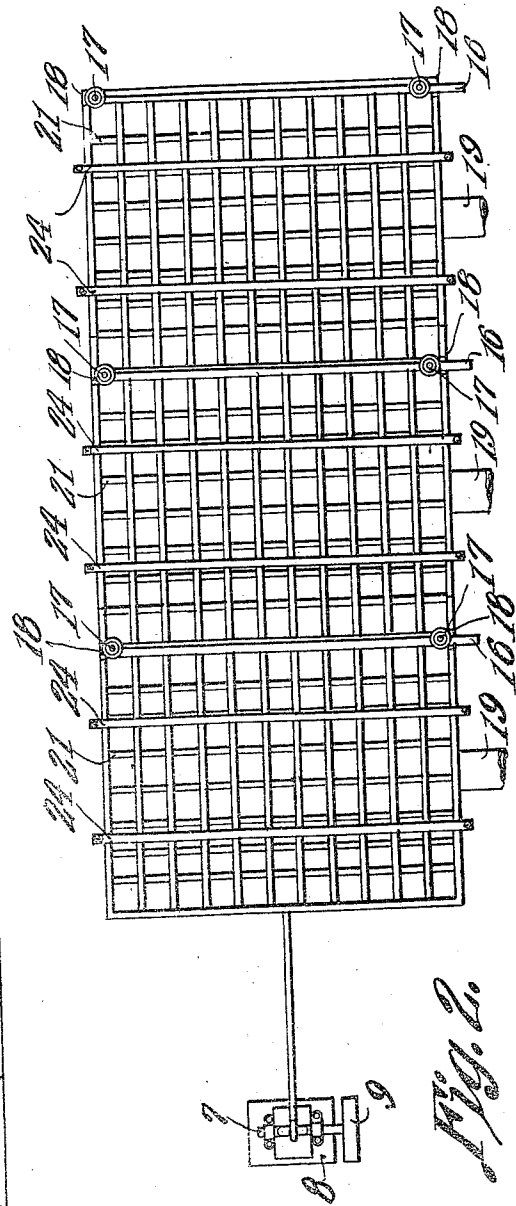
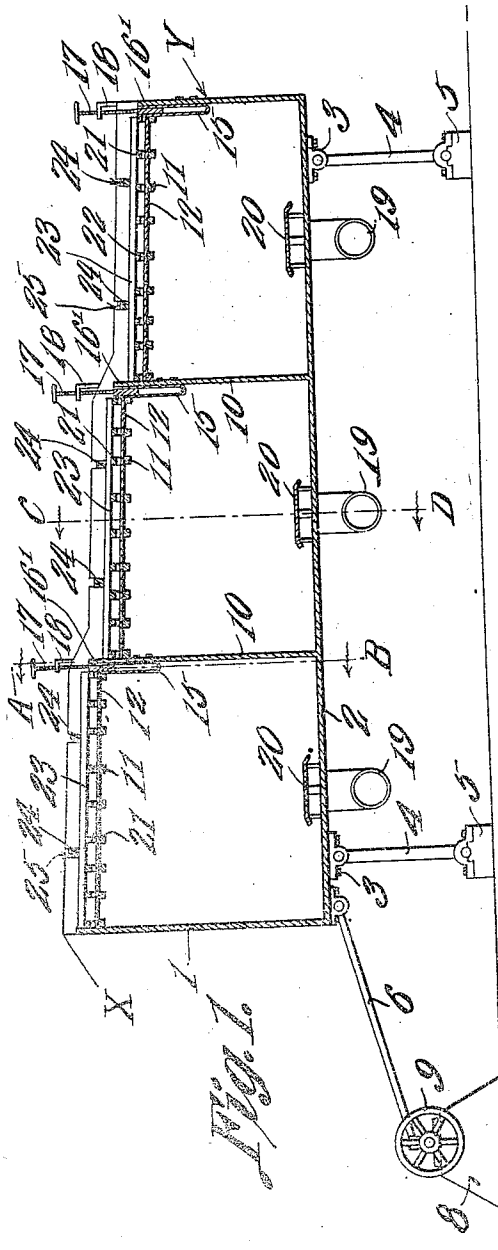
TABLE.

APPLICATION FILED APR. 4, 1911.

Patented July 2, 1912.

2 SHEETS-SHEET 1.

1,031,659.



Witnesses

J. P. Tomlin
L. H. W. W. W.

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Inventor

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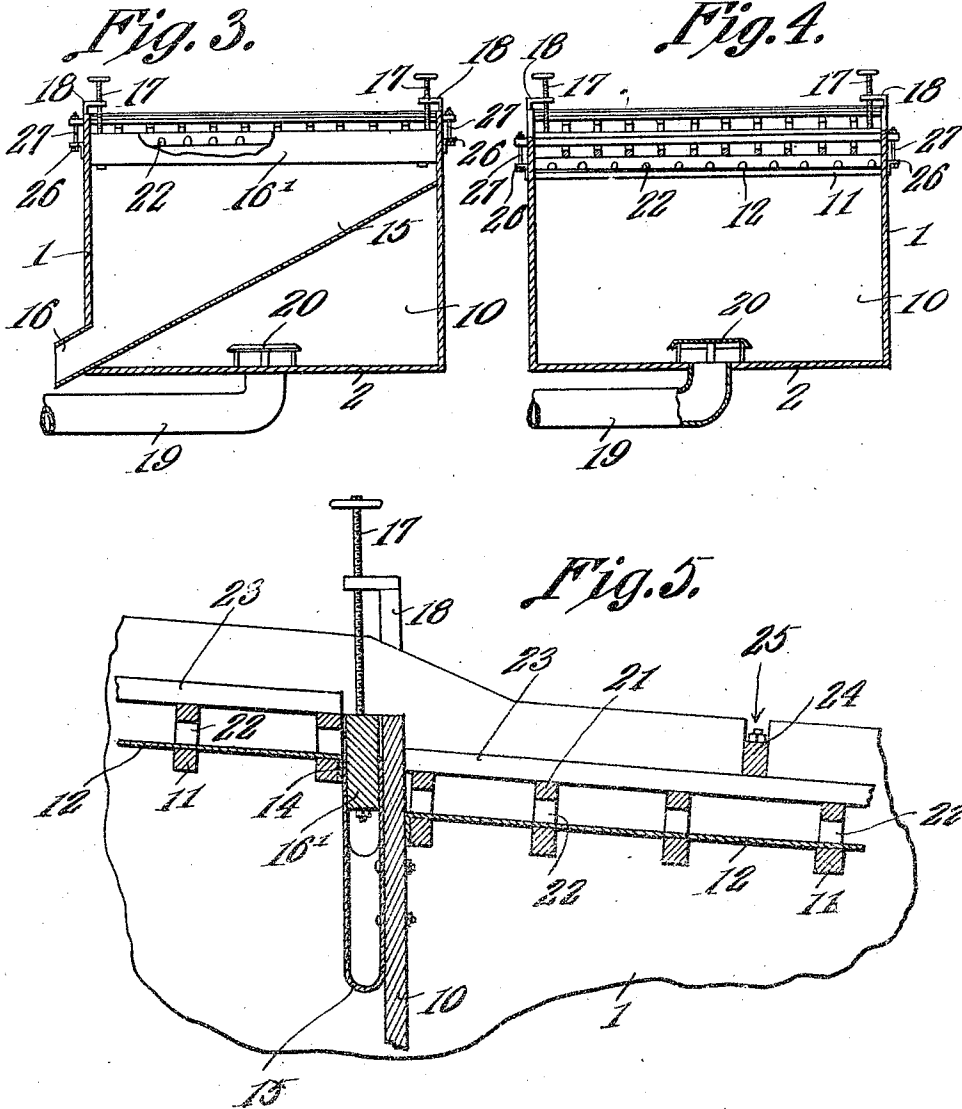
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UNITED STATES PATENT OFFICE.

WILLIAM L. MUENDER, OF MONTFORT, WISCONSIN.

TABLE.

1,031,659.

Specification of Letters Patent.

Patented July 2, 1912.

Application filed April 4, 1911. Serial No. 618,855.

To all whom it may concern:

Be it known that I, WILLIAM L. MUENDER, a citizen of the United States, residing at Montfort, in the county of Grant and State of Wisconsin, have invented a new and useful Table, of which the following is a specification.

The device forming the subject matter of this application, is a dry concentrator, in which a reciprocating casing is provided with suitable air-blast mechanism, whereby the gangue may be forced upwardly, permitting the ore to travel along the table, the gangue ultimately passing off the end of table, and the ore being drawn away laterally, at successive steps in the concentrating operation, through suitable valve-controlled ore spouts, provided for the purpose.

One object of the present invention is to provide novel means for disposing of the ore at successive steps in the operation, and to provide novel means for separating the gangue from the ore.

Another object of the invention is to improve generally, and to increase the efficiency of, devices of the type to which this invention appertains.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings,—Figure 1 is a vertical longitudinal section, wherein sundry parts appear in elevation; Fig. 2 is a top plan; Fig. 3 is a transverse section upon the line A—B of Fig. 1; Fig. 4 is a transverse section on the line C—D of Fig. 1; and Fig. 5 is a fragmental longitudinal section.

In carrying out the invention there is provided, as a primary and fundamental element, a box-like casing 1, open at the top, but otherwise closed. Upon the bottom 2 of the casing 1, there are suitable bearings 3, in which are pivoted the upper ends of supports 4, the lower ends of the supports 4 being pivoted upon pillow blocks 5. Pivotal-ly connected with the casing 1, adjacent one end thereof, is a pitman 6, connected with a crank shaft 7, mounted upon a suit-

able support 8, a belt wheel 9 or the like, being provided, whereby the shaft 7 may be rotated, reciprocating motion being thus imparted to the casing 1.

A plurality of transversely disposed partitions 10 extend entirely across the casing 1, in the interior of the same. The casing 1 is crossed, adjacent its upper edge, by a plurality of sills 11, supporting a mesh work table 12. As clearly shown in Fig. 5, and there denoted by the numeral 14 the mesh work 12 terminates short of each partition 10, thus providing for the insertion, between the end of the mesh work 12 and the partition 10, of an ore spout 15. These ore spouts 15 extend through one of the side walls of the casing 1, as denoted by the numeral 16 in Fig. 3.

Mounted for vertical reciprocation in the spouts 15, are gates 16', extended entirely across the casing 1. A means is provided for raising and lowering each of these gates 16', this means preferably consisting of a screw 17, threaded for rotation in a bracket 18, secured to the side walls of the casing 1, the lower end of each screw 17 being rotatable in the gate 16'.

An air-blast pipe 19 enters each of the compartments defined by the partitions 10, these air-blast pipes 19 being preferably extended upwardly through the bottom 2 of the casing 1. Above the discharge ends of the blast pipes 19, deflectors 20 are mounted.

The invention further includes a plurality of riffles, each riffle consisting of transverse members 21, having suitable openings 22 therethrough, to provide for the passage of the ore from one end of the casing to the other, when the casing is reciprocating. Each of the transverse members 21 is preferably aligned with, and rests upon, one of the sills 11 which connect the side walls of the casing. Superposed upon the transverse members 21, and extended longitudinally of the casing are riffles 23. Each of the riffles thus formed, is equipped with a pair of transverse bars 24, the ends of which project beyond the side walls of the casing 1, the bars 24 resting in suitable notches 25 in the side walls of the casing 1. There are lugs 26, upon the side walls of the casing 1, and through these lugs 26, and through the protruding ends of the bars 24, securing bolts 27 are passed, whereby the riffles may

be held upon the casing. Each riffle, of course, is of sufficient length to extend from one of the partitions 10 to the other.

In practical operation, the ore which is 5 to be concentrated, is deposited upon that end of the apparatus to which the reference character X is applied in Fig. 1. When a reciprocatory motion is imparted to the casing 1, through the instrumentality of the 10 pitman 6, the ore will travel longitudinally of the casing, until the gate 16 is encountered. While the ore is thus traveling toward the gate 16, the air-blast, entering the pipe 19, will force the gangue upwardly, 15 the gangue traveling longitudinally of the casing, between the members 23. The heaviest portions of the ore, passing through the openings 22 in the members 21, will come to rest against the first gate 16', 20 which gate may readily be raised, by manipulating the members 17, permitting the heaviest portions to pass into the spout 15, the bottom of which is inclined, so as to deliver the heaviest portion of the concentrate, 25 upon one side of the casing. The gangue which is upheld by the air-blast will, together with some of the heavier portions of the concentrate, pass upon the next section of the concentrator, where the process above 30 referred to will be repeated, another heavy portion of the concentrate being drawn away through the second ore spout 15. It will be understood that any number of partitions 10 and spouts 15 may be provided, so 35 that when, at last, the rear end of the casing 1 is reached, the gangue alone will remain, the gangue passing away over that end of the structure to which the reference character Y is applied in Fig. 1, all of the heavier, 40 commercially valuable portions of the concentrate, having been drawn away by the ore spouts 15.

Having described the invention, what is claimed is:—

45 1. In a device of the class described, a box-like casing; a mesh-work member extended thereacross; ore riffles disposed transversely of the casing and resting upon the mesh-work member, the riffles having open-

ings in their lower edges; a transverse parti- 50 tion in the casing, the partition having its upper edge flush with the upper edges of the riffles, and being disposed in close proximity to the last riffle of the series; gangue skimmers disposed upon the riffles and ex- 55 tended longitudinally of the casing; an ore spout secured to the partition, in close proximity to the last riffle of the series; a gate operating in the ore spout, the gate constituting a closure for the openings in the last 60 riffle of the series, thereby to prevent the ore from passing into the spout, the gate likewise constituting a means for bridging the space between the last riffle and the partition, whereby the gangue may pass across 65 the top of the gate, and across the top of the partition.

2. In a device of the class described, a box-like casing; a transverse partition therein; an ore spout secured to one side of the 70 partition; sills disposed transversely of the casing, on both sides of the partition; mesh-work coverings supported upon the sills, one of said coverings being bound by one of the sills, against the ore spout, the other of said 75 coverings being bound by another of the sills, against the partition; riffles resting upon the sills; and a gate operating in the ore spout.

3. In a device of the class described, a 80 casing; transverse sills therein; transverse partitions in the casing, dividing the casing into a plurality of compartments; an air-blast for each compartment; an ore spout secured to each partition and held against 85 movement by one of the sills; mesh-work coverings above the sills; riffles resting upon the sills above the mesh-work coverings; a gate adapted to operate in each ore spout; and means for raising and lowering 90 the gate.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM L. MUENDER.

Witnesses:

DAVID JAMES,
J. C. MASON.