

No. 805,599.

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ORE SEPARATOR.

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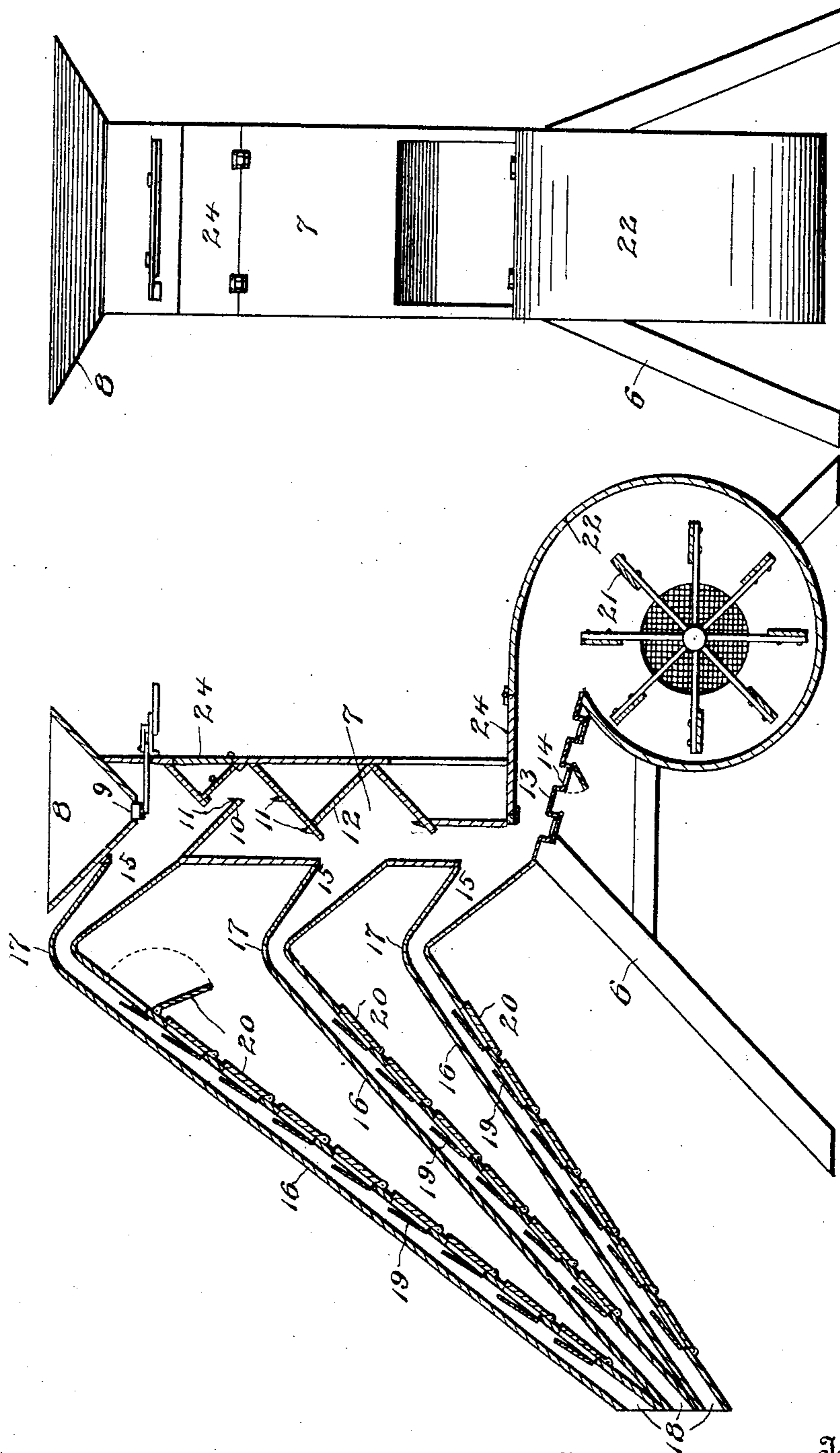


Fig. 2.

Fig. 1.

Witnesses
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UNITED STATES PATENT OFFICE.

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ORE-SEPARATOR.

No. 805,599

Specification of Letters Patent.

Patented Nov. 28, 1905.

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To all whom it may concern:

Be it known that I, LOIS J. VANDERVOORT, a citizen of the United States, residing at Guthrie, in the county of Logan and Territory of Oklahoma, have invented new and useful Improvements in Ore-Separators, of which the following is a specification.

This invention is a dry separator of the pneumatic type particularly adapted for the separation of gold and in which the auriferous earth is fed down a chute provided with oppositely-extending riffle-boards, over which a current of air is blown, and having pipes leading from the chute, which pipes are also provided with riffles to catch any ore which may be blown over from the chute.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of the separator. Fig. 2 is an end elevation thereof.

Referring specifically to the drawings, 6 indicates a supporting-frame for the machine. Mounted upon this is a vertical chute or casing 7, having at the top a hopper 8, from which the earth is delivered to the chute through a feed valve or gate 9. This gate may be of any desired construction, but preferably the construction disclosed in my United States Patent No. 801,349, dated October 10, 1905. Within the chute below the hopper are a series of oppositely-inclined riffle-boards 10, having riffles 11 thereon. Boards 12 serve to support the riffle-boards and also to contract the passage through the chute to confine the currents of air. At the bottom the chute discharges onto a pan 13, having ore-pockets 14 extending transversely across the same. Leading from the chute are a series of discharge-pipes 15. The upper pipe taps the chute directly under the hopper and above the first riffle-board. The intermediate pipe opens into the chute opposite and below the lower end of the second riffle-board, and the lower pipe opens directly above the pan 13 and below the edge of the lowest riffle-board. Each of these pipes has an upwardly-inclined portion next the chute connecting to a downwardly-inclined portion of greater length, as indicated at 16, by elbows, as at 17, and the pipes all join to a common waste-discharge at 18. The downwardly-inclined portions 16 of the pipes have riffles 19 extending transversely across the

same, below which are doors 20, which may be opened to remove any metal collected under the riffles.

21 indicates a rotary fan, the casing 22 of which opens through the ore-pan 13 and into the lower end of the chute.

Doors 24 are provided in the casing of the chute, so that the riffles can be got at and the metal removed therefrom.

In operation the auriferous earth is fed from the hopper down into the chute, and the fan being in operation it falls through the currents of air delivered from the fan-casing up through the chute, the heavier metal being caught in the riffles on the riffle-boards or in the pockets of the pan 13 and the lighter waste being blown out through the pipes 15. The upwardly-inclined portions of the pipes 15 serve to a large extent to prevent any valuable matter being carried over beyond the elbows of the pipes, although if any is carried over it will be caught by the riffles in the downwardly-inclined portions of the pipes. The opposite arrangement of the riffle-boards causes a thorough distribution of particles, so that the air has access to all parts of the material and an effective separation is produced.

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

1. In an ore-separator, in combination, an upright chute down through which ore is fed, a series of riffle-boards therein, over which the ore flows, a collecting-pan under the lower end of the chute, upwardly-inclined pipes leading from one side of the chute, the mouth of the lowest pipe being at one side of the pan, and a fan having an air-duct entering said chute at the bottom, on the opposite side of the pan, and arranged to produce a blast up through the chute and into the said pipes.

2. The combination with an upright ore-chute and means to produce a blast through the same and to collect the concentrate therein, of a series of discharge-pipes from one side of the chute, said pipes each having an upwardly-inclined portion next the chute, and each having a separate downwardly-inclined portion beyond with riffles therein.

3. The combination, in an ore-separator, of an upright chute down which the ore falls,

and having inclined riffle-boards therein, a receiver for concentrate, under the lower end of the chute, a series of upwardly-inclined discharge-pipes opening from the side of the
5 chute at different heights therein, the mouth of the lowest pipe being at one edge of the receiver, and a fan having an air-duct opening into the chute below the mouths of the said discharge-pipes and at the opposite edge of

the receiver, so as to produce a blast across the receiver.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOIS J. VANDERVOORT.

Witnesses:

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