(No Model.) 2 Sheets—Sheet 1.

R. E. GRAY.

SEPARATOR FOR DRY PAINT, &c.

No. 348,324. Patented Aug. 31, 1886.

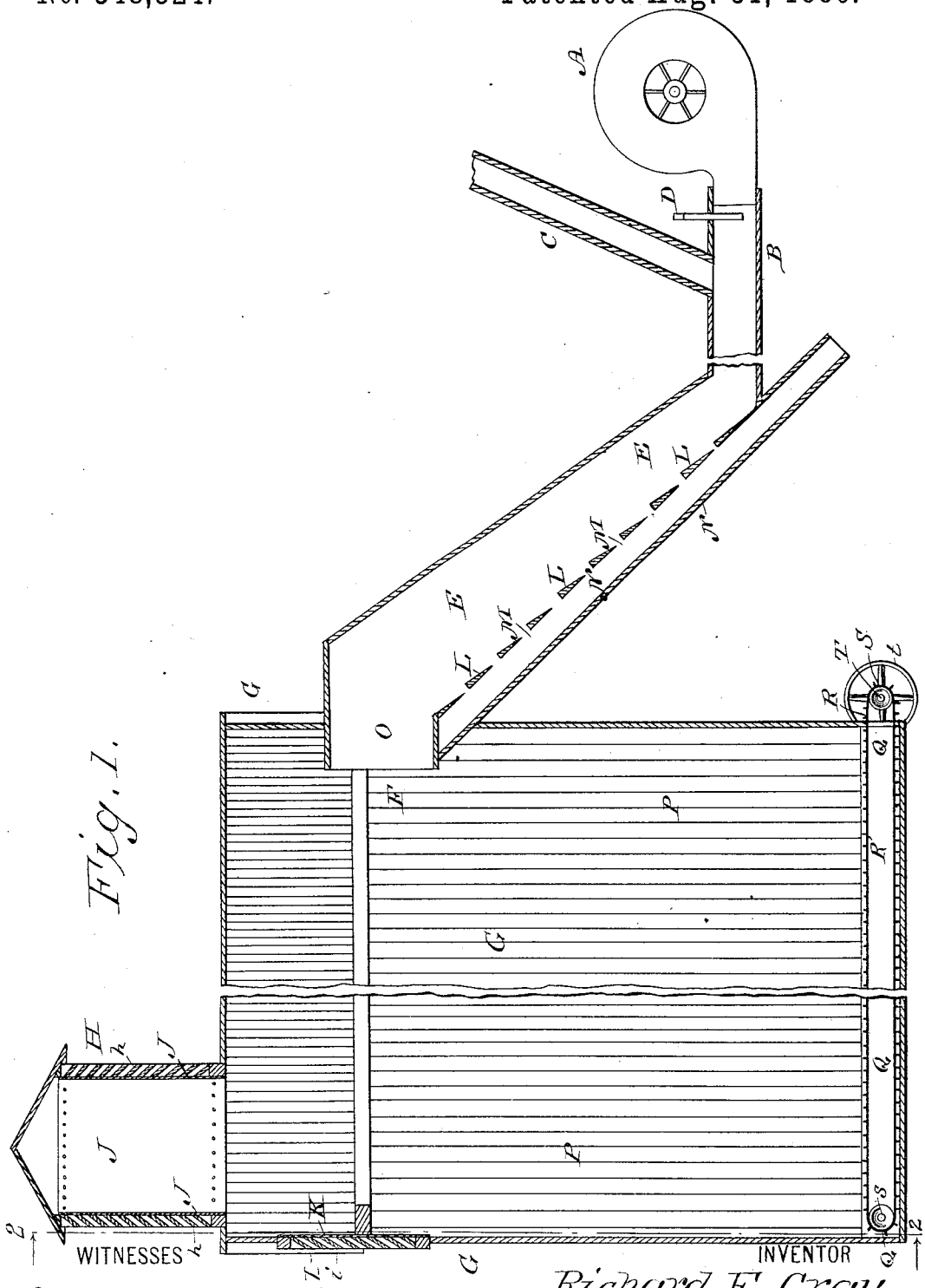

Fig. 1.

Witnesses:
Ed. A. Newman.
Al. C. Newman.

Inventor:
Richard E. Gray,
By his Attorneys
Baldwin, Hopkins & Peyton.

(No Model.) 2 Sheets—Sheet 2.

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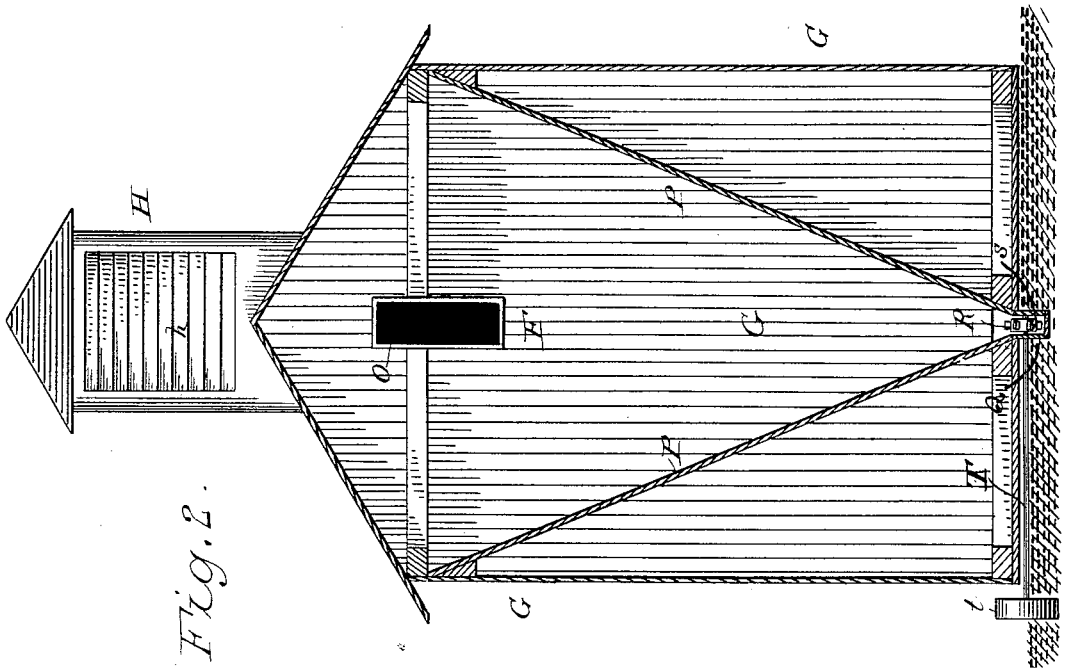

Fig. 2.

WITNESSES

Ed. A. Newman
A. C. Newman.

INVENTOR

Richard E. Gray,
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UNITED STATES PATENT OFFICE.

RICHARD E. GRAY, OF MUNCY, PENNSYLVANIA.

SEPARATOR FOR DRY PAINT, &c.

SPECIFICATION forming part of Letters Patent No. 348,324, dated August 31, 1886.

Application filed March 18, 1886. Serial No. 195,683. (No model.)

To all whom it may concern:

Be it known that I, RICHARD E. GRAY, of Muncy, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Separators for Dry Paint and Like Substances, of which the following is a specification.

My invention relates to improvements in separators of the class in which provision is made for subjecting the material, the finer portions of which are to be separated from the coarser particles, to the action of a blast of air while passing along a suitable passage-way or trunk, the coarser particles escaping through openings in the bottom of the trunk, while the fine material is blown through and out at the end of the trunk and settles in a collecting-chamber.

My object is to provide a simple and inexpensive separator of this class which shall be efficient in operation.

In the accompanying drawings, which show the separator as adapted to operate upon dry ground paint, Figure 1 is a vertical longitudinal section, and Fig. 2 a view partly in elevation and partly in transverse section on the line 2 2 of Fig. 1.

A fan or blower, A, is connected with one end of a horizontally-extending receiving passage-way or trunk, B, to which the material to be operated upon is supplied by way of a chute or conducting-trunk, C. The material is supplied to the upper end of the chute from a suitable building, in the lower part of which the fan is located. Between the fan-spout and the chute a cut-off valve or blast-regulator, D, is located. The receiving-trunk communicates at its rear end with the lower end of an inclined separating-trunk, E, the upper end of which terminates over one end of the collecting-chamber F, of a suitable building, G. This building is provided, at or near its end opposite that at which the separating-trunk enters, with screened outlets for the air forced into the building from the blower. As shown, these screened outlets are provided as follows: At top and at its end most remote from the end into which the separating-trunk projects the building has a cupola, H, the four upright sides of which are provided with inclined slats *h*, to guard against the free entrance to the building of currents of air, as will readily be understood. A window, I, also provided with inclined slats *i*, is located in the end of the building, near its top, and opposite to the upper end of the separator-trunk. Both the cupola and the window are protected by fine screens J and K, best made of muslin. In this way, while provision is made for the outlet of air entering to the collecting-building from the separating-trunk, the escape of the fine particles or dust, to be accumulated by settling in the collecting-chamber beneath the level at which the separating-trunk enters the collecting-building, is prevented.

The bottom of the separating-trunk is provided with alternate bottom inclines L and openings M. These openings communicate with a false bottom or auxiliary trunk, N, hereinafter termed the "discharge-trunk." The bottom-inclines L are fixed, and are formed by slats extending from side to side of the separating-trunk, these slats being made thickest at their upper edges, and gradually decreasing in thickness to the lower edges, the lower or thin edge of one slat being separated from the upper or thick edge of a slat next below it by a bottom-opening, M, as will readily be understood. These step-like inclines and openings, while admitting of the passage of heavy particles from the separating-trunk into the discharge-trunk, prevent the lighter particles, which would not descend through the openings by gravity, from being blown out of the separating-trunk by way of its bottom openings. The separating-trunk is of least transverse area at its lower end, and is gradually increased in area upward, the trunk being shallowest at its lower end and deepest at its upper end, where it is provided with the horizontally-extending portion or elbow O, by which it communicates with the space over the collecting-chamber of the building G. The side walls, P P, of the collecting-chamber are inclined, converging from their tops to their lower edges, where they approach quite closely to each other, and terminate in or rest upon a collecting-trough, Q, provided with an endless conveyer, R, which may be formed of a toothed chain or belt, passing around a driven pulley, *s*, and a driving-pulley, S, respectively at the back and front of the collecting-

building. The shaft T of the driving-pulley S is to be driven in any suitable way, as by a band passing around the pulley *t*.

From the above description it will be seen that the ground paint supplied by the conducting-chute will be operated upon by the blast in such way as to be forced along and upward through the separating-trunk, the heavier particles passing by gravity through the bottom-openings of the separating-trunk into the discharge-trunk, and the lighter particles or dust passing upward and into the collecting-chamber. The heavier particles are collected in suitable way as delivered from the discharge-trunk, and reground, while the lighter particles descend the sides of the collecting-chamber, and are gathered in the collecting-trough, from which they are delivered by the endless conveyer and suitable co-operating mechanism to the place of final collection. By gradually increasing the area of the separating-trunk from its lower end upward, which correspondingly diminishes the force of the blast, it will be seen that provision is made for carrying off, by way of the discharge-trunk, all but the fine particles to be saved in the collecting-chamber, the heavier particles passing into the discharge-trunk at and near the lower end of the separating-trunk, and the lightest particles, which do not pass to the collecting-chamber, pass into the discharge-trunk near its upper end, the particles of intermediate weights entering to the discharge-trunk between its upper and lower ends.

I claim as of my own invention—

1. A separator for dry paint, &c., provided with the blower, the receiving-trunk, the chute, the inclined separating-trunk, gradually increasing in area from its lower end upward, and having the bottom inclines and openings, the discharge-trunk, and the building, provided with the collecting-chamber, over which chamber the material issues and into which it settles as discharged from the separating-trunk, substantially as and for the purpose set forth.

2. A separator for dry paint, &c., comprising the blower, the receiving-trunk, the chute, the separating-trunk having bottom inclines and openings, the discharge-trunk, the collecting-building provided with screened outlets, the collecting-chamber having inclined sides, the collecting-trough, and the endless conveyer, substantially as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my name.

RICHARD E. GRAY.

Witnesses:

ALBERT M. GRAY,

A. M. HILL.