

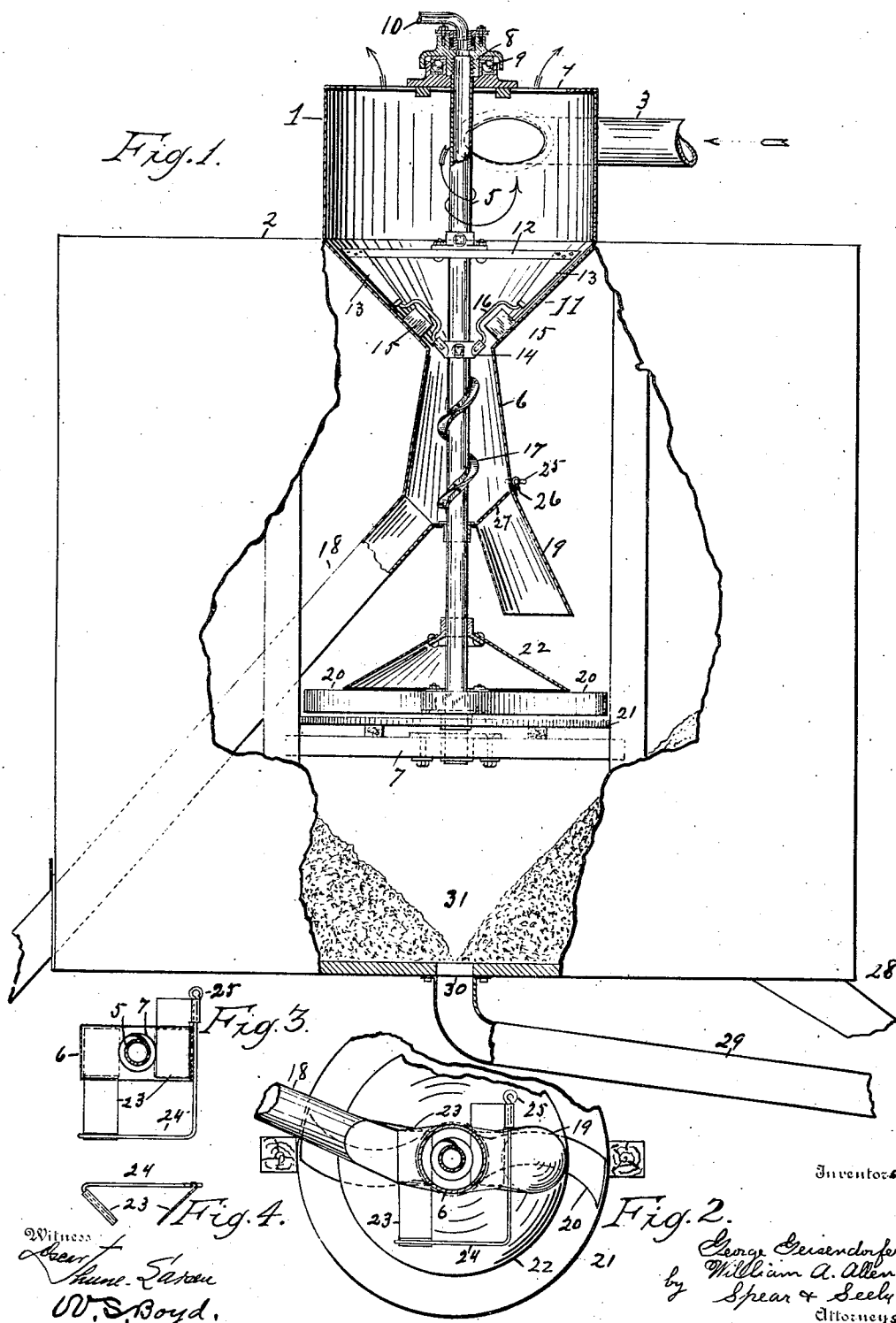
No. 816,460.

PATENTED MAR. 27, 1906.

G. GEISENDORFER & W. A. ALLEN.

AUTOMATIC DISTRIBUTER FOR BLOWER SEPARATORS.

APPLICATION FILED OCT. 14, 1905.



# UNITED STATES PATENT OFFICE.

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## AUTOMATIC DISTRIBUTER FOR BLOWER-SEPARATORS.

No. 816,460.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed October 14, 1905. Serial No. 282,855.

*To all whom it may concern:*

Be it known that we, GEORGE GEISENDORFER and WILLIAM A. ALLEN, citizens of the United States, residing at Upton, in the county of Siskiyou and State of California, have invented certain new and useful Improvements in Automatic Distributers for Blower-Separators, of which the following is a specification.

Our invention relates to a distributer for what are known as "blower-separators" for separating sawdust, shavings, &c., from the current of air that is generated by a blower in woodworking shops, as planing-mills, &c. In such devices as now constructed the solid material is apt to pack and fill up the chute and especially if it should be damp, in which case the incoming material is carried out of the separator by the blast of air and deposited on the surrounding property.

The object of our invention is to obviate these difficulties by arranging an agitator and distributer in the separator, which is adapted to stir the deposited material, and thereby prevent its packing and stopping the discharge-chute and then distribute it within the bin or other receptacle. We prefer to so construct the agitator and distributer that they will be actuated automatically by the current of air from the blower and also to provide them with means to force the material through the chute, if necessary.

An embodiment of our invention is shown in the accompanying drawings, in which—  
Figure 1 is a broken elevation of a separator and bin provided with one form of our agitator and distributer. Fig. 2 is a transverse sectional view of the discharge-chute looking down. Fig. 3 is a similar view to show the cut-off. Fig. 4 is an end view of the cut-off.

Referring more particularly to the drawings, 1 indicates the receiver of the ordinary blower-separator, which is in the form of a casing and located on top of a bin 2 and receives the dust-laden current of air from the blower through a pipe 3. The pipe is arranged tangentially to the upper or cylindrical portion of the receiver or separator, so that the air on entering is given a rotary motion which will cause the solid material carried thereby, as sawdust, &c., to be deposited

by centrifugal force around the cylinder while the purified air passes out through an opening 4 in the top.

Journaled at the upper end of the cylinder is a vertically-arranged shaft 5, which extends down through the separator and the discharge-chute 6 and is journaled in a support 7 above the bottom of the bin. The bearings 8 at the top are adapted to support the weight of the entire apparatus and may be of any desired construction, but is preferably provided with balls 9 and adapted to be supplied with oil to prevent friction. The shaft is also preferably made hollow and has its upper end adapted to be connected with a pipe 10, by means of which it can be connected with a water-supply. (Not shown.)

Rigidly secured to the shaft 5 within the separator, and preferably at or near the top of the hopper portion 11 of the separator, is a frame, which consists of a cross-bar 12 and two wings 13, the latter being secured to the outer ends of the bar and to a block or bracket 14 on the shaft at the bottom of the hopper. The wings are arranged radially, so as to be acted upon by the lower strata of the rotating body of air, and thereby be carried around in a rapid manner. Where the separator is provided with current-interrupters, as blades 15, to intercept the rotary motion of the air and solid material, the lower portion of each wing is notched or recessed and preferably formed from a rod of metal which is bent inward, as at 16, to form a loop for passing over said blades when the wings are rotated.

Secured to the portion of the shaft 5 that passes down through the chute 6 is a force-feed, preferably in the form of a flanged spiral 17, which is adapted to force the sawdust through the chute if it should have a tendency to pack or clog up, as it is very apt to do when damp.

Connected with the lower end of the chute 6 are two conduits, as pipes 18 and 19, one of which, 18, is extended through the side of the bin to the boiler-room in the usual manner, and the other one is more nearly vertical and has its lower end arranged above a distributer. The distributer is preferably in the form of arms 20, projecting radially from the shaft 5 above a table or platform 21. A con-

ical shield or deflector 22 is preferably secured to the shaft above the arms, with its edge secured to the arms at a distance from their ends, so as to throw the material from the spout 19 to the outer edge of the platform, from which it is thrown by the projecting ends of the arms; said ends being preferably curved to the rear, as by making the arms reversely curved, as shown in the drawings.

Located at the junction of the spouts 18 and 19 with the chute 6 are two valves or cut-offs, preferably in the form of blades 23, by means of which communication is established between the chute and either one of the spouts, as desired. The blades are preferably connected to an L-shaped handle 24 and are so arranged that when they are reciprocated they will alternately open and close their respective conduits. The handle is provided with an eye 25 at one end, by means of which it can be reciprocated through a cylindrical bearing 26 to move the blades back and forth. The blades fit within suitable guides, as slots 27, at the upper ends of the spouts, and are connected with the handle in any suitable manner, as by rolling a portion of the end of each around the proper portion of the handle.

Leading from the bottom of the bin is an ordinary spout 28, through which the contents can be removed for use either as fuel or for any other purpose. There is also a waste trough or chute 29 leading from an opening 30 in the bottom of the bin, through which the material in the bin can be removed when there is a surplus. The opening 30 is located directly under the shaft 5, preferably at the center of the bin, so that the sawdust, shavings, &c., will form a funnel-shaped depression over said opening, as shown at 31, so that when it is desired to discharge any of said material through the waste-chute 29 it is only necessary to pass water down through the shaft 5, which will fall upon the material and wash it through the opening into the trough, from whence it can be discharged at any desired point.

From the foregoing it will be seen that our invention is automatic, yet very simple, and can be quickly and cheaply applied to any of the ordinary blower-separators on the market to-day. All the adjustment that is necessary is to construct the triangular-shaped agitator to fit the hopper portion of the separator and to provide the lower end of the chute with the form of valve or shut-off that can be operated without interfering with the shaft and its conveyer that passes down between the discharge-spouts.

Owing to the inflammable nature of the material being handled, precaution must be taken as much as possible to avoid the possi-

bility of starting a fire, as by excessive friction at the bearings or making a spark at any point where the movable parts are liable to come in contact. For this reason the bearings should be kept well supplied with oil and the platform from which the material is thrown should be made of one kind of metal and the arms from another, as bronze, which will not cause a spark if they should happen to strike while in motion. The hollow construction of the shaft assists in keeping it cool, owing to the circulation of air there-through, and especially if the upper end is open, or by passing a small stream of water through the shaft which can escape through the opening in the bottom of the bin.

In using our distributor it is suspended within the separator and when the air enters the casing it assumes a rotary motion, which causes the heavier particles to be deposited around the casing, from whence it passes down through the hopper and chute, and when it is to be stored in the bin it is permitted to fall upon the distributor and is thrown outwardly against the walls of the bin and gradually fills the bin. The distributor is automatically driven at a high rate of speed by the rotary current of air striking against the wings arranged in the hopper portion of the separator, and in case the material should not pass down through the chute it will be forced through by the rotary screw or conveyer upon the shaft.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a distributor for blower-separators, a casing provided with a chute, two conduits leading from the lower end of the chute, valves for closing said conduits, a rotary shaft through the casing, and a distributor at the lower end of the shaft under the end of one of said conduits.

2. In a distributor for blower-separators, a casing provided with a chute, two diverging conduits leading from the lower end of the chute, an oscillating valve for each of the conduits, an oscillating handle connected with said valves for moving them across said conduits alternately, a rotary shaft through the chute and between said valves, and a distributor on the shaft below the end of one of said conduits.

3. A distributor for blower-separators comprising a cylindrical casing, having a downwardly-tapered lower part forming a hopper, a chute connected to the lower part of said hopper, a platform below the chute, a shaft passing through the casing, hopper and chute, an agitator secured to the shaft within the hopper, a spiral secured to the shaft within the chute, blades on the lower end of the shaft in proximity to the platform, a con-

ical deflector secured to the shaft and having its base immediately above the blades, the ends of said blades extending beyond the said base, and means for causing the rotation of the shaft by the current of dust-laden  
5 air.

In testimony whereof we affix our signa-

tures, in presence of two witnesses, this 25th day of September, 1905.

GEORGE GEISENDORFER.

WILLIAM A. ALLEN.

Witnesses:

W. C. GRAF,

E. G. NEILSON.