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SANITARY POWDERING DEVICE

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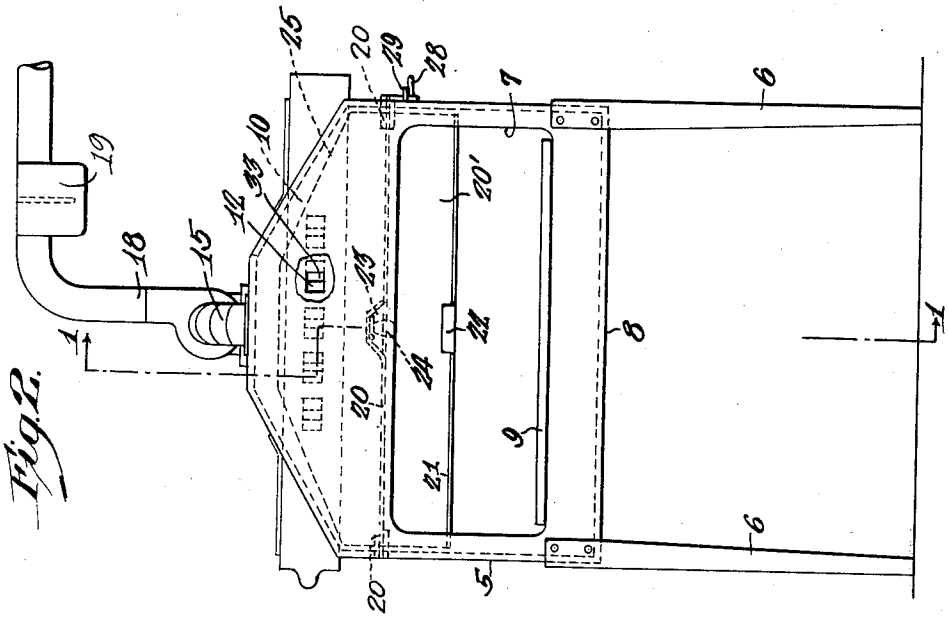


Fig. 2.

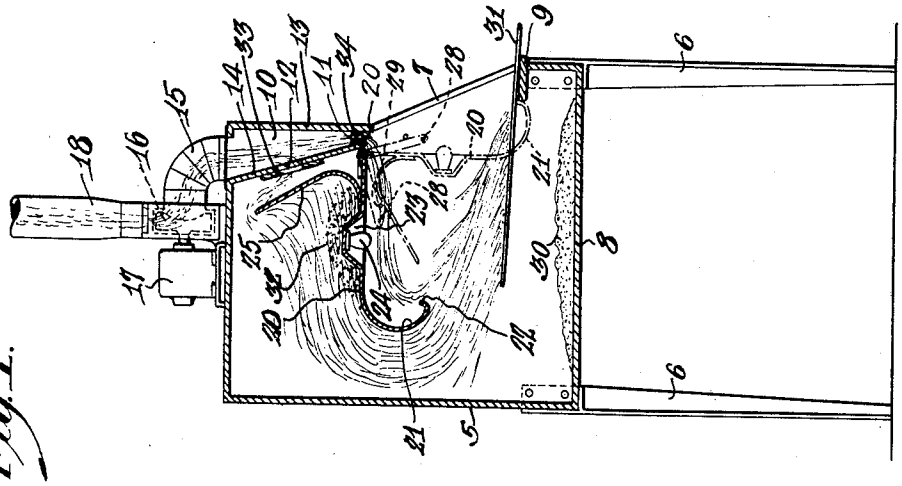


Fig. 1.

Inventor:
William Guenst

by J. S. Steell Jackson
Attorney

Witness:
Walter Chism

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SANITARY POWDERING DEVICE

William Guenst, Philadelphia, Pa.

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10 Claims. (Cl. 91—60)

My invention relates to a powdering device for use in powdering plates for printing preparatory to etching the plates.

In preparing printing plates for etching it is usual practice to protect portions of the plate from the etching liquor by means of powder.

This powder is dusted on to the plate in four directions from one side after the other, the plate being heated after each dusting operation, the heating melting the powder so that it adheres as a thin coat over the undercut surfaces during the subsequent etching process.

In the past the dusting operation has been accompanied by a deleterious escape of the dust into the room and to the lungs of the operator and others nearby.

A purpose of my invention is to provide a cabinet for performing the operation of dusting plates preparatory to etching that will effectively prevent the escape of dust into the room and that will be convenient for the performance of the dusting operation.

A further purpose is to mount a suction device upon a dusting cabinet for use in drawing dust-laden air away from an open doorway of the cabinet, and to swing a door that is adapted to normally close the doorway inwardly that it may serve as a baffle during the dusting operation for guiding the dust-laden air rearwardly and upwardly away from the doorway.

A further purpose is to catch the dust depositing from the dust-laden air inside a dusting cabinet while dusting a plate upon the back of an inwardly raised door and to return the settled powder to the bottom of the cabinet by the closure of the door.

A further purpose is to place an exhaust inlet inside a dusting cabinet along one or more edges of a doorway thereof, preferably along the top of the doorway when the inlet is along one edge only of the doorway.

A further purpose is to make a gentle inflow of air into the doorway of a dusting cabinet, providing an inwardly extending baffle above the doorway and exhaust inlets above the baffle and preferably also along one or more edges of the doorway.

Further purposes will appear in the specification and in the claims.

I have elected to show one only of the different forms of my invention, selecting a form that is practical and efficient in operation and which well illustrates the principles involved.

Figure 1 is a vertical section through a cabinet embodying a desirable form of my invention, being a section taken upon the line 1—1 of Figure 2.

Fig. 2 is a front elevation of the structure embodying my invention.

Like numerals refer to like parts in all figures.

Describing in illustration and not in limitation and referring to the drawing:—

In the illustrated embodiment of my invention, I show a box 5 supported upon legs 6.

The box is provided with a front doorway 7 spaced somewhat above the bottom 8 of the box, a sill member 9 being provided along the bottom of the doorway.

The sides of the doorway preferably slope rearwardly and upwardly and above the doorway. I provide an exhaust flue 10 with inlets 11 inside the box along the top of the doorway and other inlets 12 into the interior of the box well above the doorway.

The flue 10 is shown extending the length of the box and formed by the front wall 13 of the box above the doorway and an inwardly spaced partition 14 cooperating with the ends of the box.

The exhaust flue has a pipe connection 15 to an exhaust fan 16 driven by a motor 17 and discharging to any suitable flue 18.

The flue 18 may desirably be provided with a dust separator 19 of any suitable type for eliminating any dust that may be still carried by the air after it has reached the flue 18.

Spaced somewhat inwardly and preferably upwardly from the top of the doorway I provide hinge support 20 for a door 20'.

The door 20' is adapted to swing rearwardly in position to form a baffle member, being shown in full line in its rearward position, where it functions as a guiding baffle and shown in dot-and-dash in its closed position.

The bottom of the door may desirably be curved forwardly and somewhat upwardly at 21 to seat against the inner edge of the sill member 9 where it may carry a handle 22, shown at the middle of the door.

Desirably the door is dished or recessed at 23 to provide a shielding niche for a light 24.

I preferably mount a baffle member 25 on the back of the door.

While the door is closed the member 25 extends inwardly and its weight keeps the door pressing shut against its seat while the door is closed.

When the door is open the baffle member extends diagonally upward and additionally guides the dust-laden air to near the top of the box be-

fore it can reach the inlets 12 to the exhaust flue.

The door is indicated as being rigidly fastened to its pivot member 19 which extends through the end walls of the box, carrying a handle 28 outside the box at one end thereof.

The door may be set in any desired position by means of a suitable pin 29 engaging the crank portion of the handle after the door has been placed in its desired position.

In operation a suitable quantity of powder 30 is placed inside the box. The door is opened to the position indicated in Figure 1, being fastened to place in any suitable way as by the pin 29 in the end wall of the box engaging the arm of the handle 28.

A work plate 31 is presented into the box, dipped into the powder and then turned on edge so that the powder runs across the surface of the plate.

An operator then takes a brush and with the plate about horizontal dusts the plate from the forward side rearwardly into the interior of the box, the brush setting up a considerable amount of dust, most of the dust-laden air being drawn to the rear of the box by the suction at inlet holes 12 to the flue 10, passing in gentle flow rearwardly and upwardly as indicated by Figure 1.

Much of the floating dust settles out at 32 upon the upwardly directed back of the door 20 so that the air entering the exhaust flue has been to a considerable extent freed from its load of dust before passing over the baffle member 25 into the exhaust flue through the perforations 12.

A portion of the dust-laden air may move forwardly in eddy currents to the doorway and for this reason I provide inlets 11 to the exhaust flue inside the doorway along one or more of the edges thereof.

While I usually find it sufficient to place the suction inlets 11 along the top edge only of the doorway, it will sometimes be preferable to extend the exhaust flue around the doorway with suitable flue inlets around the doorway along the inside edges thereof.

After an operater has dusted a plate on one side, the plate is taken out of the cabinet and heated in any suitable or usual way sufficiently to set the dust effectively by melting.

The plate is then powdered in another direction, dipping one of its other sides into the powder in the same way as before, the plate being then up-turned as before so that the powder runs over the whole area of the plate and the powder is then brushed rearwardly from the other edge to suitably cover the undercut surfaces of the plate that are presented toward the other side.

The plate is then heated as before to set the dust and subsequently the operation is repeated in the same way for the other two sides of the plate.

The best conditions inside the cabinet with respect to the rate at which the dust-laden air flows to the rear of the box and with respect to the requisite suction along one or more of the edges of the doorway may be variant according to variation in the character of the powder used, in the sizes of the work plates and in the personal equations of the different operators and for this reason I have indicated the inlet openings adapted to adjustment.

The inlets 12 into the interior of the cabinet above the baffle 20 are shown adjustably closed by a slide 33 that is shown extending through suitable cuts in the end walls of the cabinet, and being adapted to be shifted by an operator to any desired position at the projecting ends in order to adjustably uncover the inlets 12. This adjustment is a familiar grading adjustment such as is used for engine valves and for dampers in the fronts of store doors.

A similar sliding adjustment is provided at 34 for the inlets 11 along the top of the doorway.

Obviously where conditions are uniform the inlet adjustment members may be dispensed with.

In view of my invention and disclosure variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art, to obtain all or part of the benefits of my invention without copying the structure shown, and I, therefore, claim all such in so far as they fall within the reasonable spirit and scope of my invention.

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

1. A dusting cabinet, comprising a box having a doorway higher than the bottom of the box, a door opening inward and when open being adapted to serve as a baffle and suction means for drawing air from the box interior and adapted to maintain the box under slight suction.

2. A dusting cabinet, comprising a box having an opening across the front thereof spaced above the bottom of the box for the purpose of allowing unused dust to accumulate in the bottom and a baffle member extending inwardly from the front of the box above the opening toward the rear of the box in combination with means for applying suction to the box above the baffle

3. A dusting cabinet, comprising a box having a doorway higher than the bottom of the box, a door opening inward and when open being adapted to serve as a baffle and means for drawing air from the box interior having an inlet out of the box at a point beyond the opened door and having another inlet from the doorway along an inside edge of the doorway, said baffle having a hinge support at the front adapting it to be swung downwardly across the opening.

4. A dusting cabinet, comprising a box having an opening in the front thereof some distance above the bottom of the box, a door hinged inwardly of and above the opening adapting the door to be swung rearwardly and upwardly for use as a baffle, and means for applying suction to the interior of the box above the door in use as a baffle.

5. A dusting cabinet, comprising a box having a front opening spaced above the bottom of the box for the purpose of allowing unused dust to accumulate in the bottom, a baffle extending inwardly from the front of the box above the opening and an exhaust flue having an inlet from the opening along the top of the opening and another inlet from the portion of the box above the baffle.

6. A dusting cabinet, comprising a box having a front doorway spaced above the bottom of the box, a door hinged at the top of the doorway adapted to serve as a baffle when swung inwardly and an auxiliary baffle plate fastened to the door normally projecting inwardly and its weight tending to hold the door shut when the door is closed.

7. A dusting box having a front doorway into the interior thereof, said doorway being spaced above the bottom of the box, a door hinged at

the top vertically inwardly from the opening, a partition spaced from the front of the box cooperating with the box ends to form an exhaust flue, said partition having an opening above the door into the interior of the box and means for applying suction to the flue to effect slight suction inside the box.

8. A dusting box having an opening across the front into the interior thereof, said opening being spaced above the bottom of the box, a door hinged at the top vertically inwardly from the opening and a partition spaced from the front of the box cooperating with the box ends to form an exhaust flue, said partition having an opening above the door into the interior of the box and having an opening into the box in front of and below the hinges.

9. A dusting cabinet comprising a box having a front opening spaced above the bottom of the box, a baffle extending inwardly from the front of the box above the opening, an exhaust flue having an inlet beyond the baffle from the portion of the box above the baffle and a second inlet from the opening along the top of the opening and means for adjusting the size of one of the inlets.

10. A dusting box comprising a box having a front opening spaced above the bottom of the box, a baffle extending inwardly from the front of the box above the opening, an exhaust flue above the baffle, said flue having inlets beyond the baffle out of the box above the baffle and having another inlet out of the doorway along an edge thereof and means for adjusting the effective sizes of the first inlets.

WILLIAM GUENST.