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SAND BLAST CABINET

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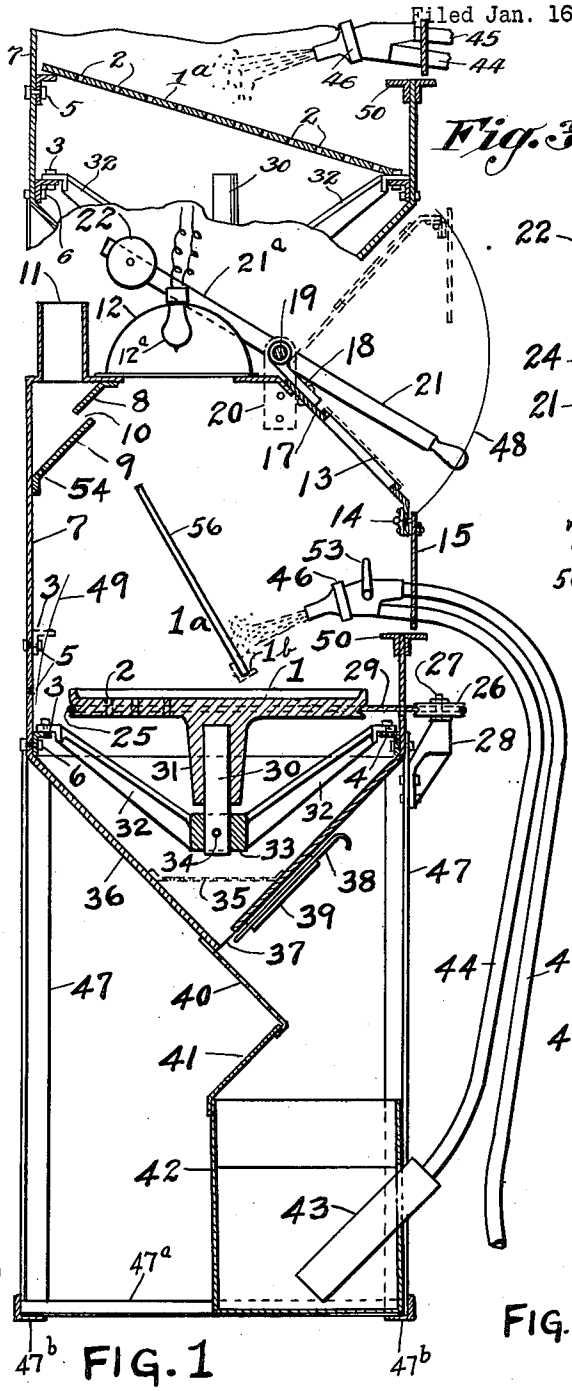


Fig. 3.

FIG. 1

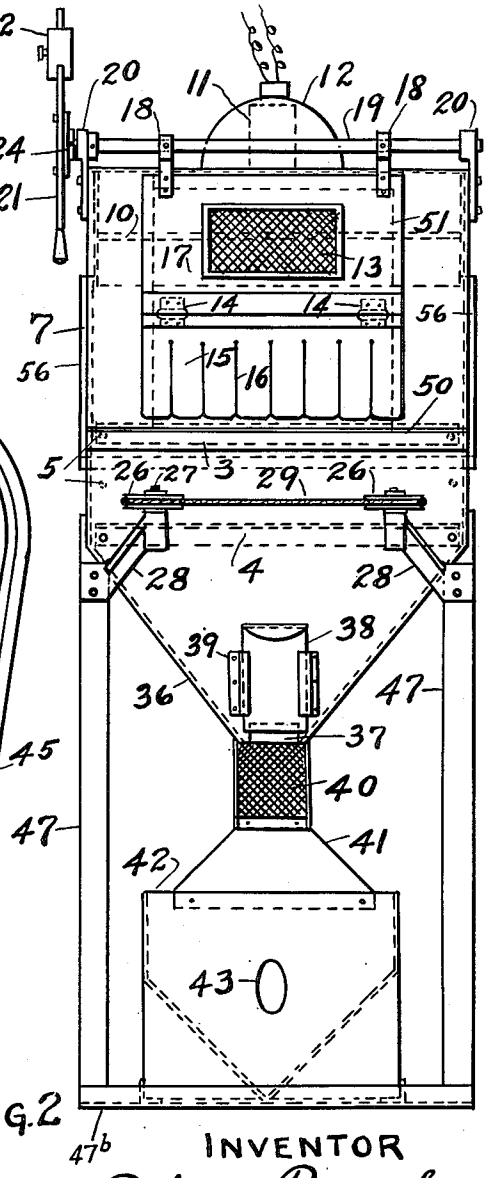


FIG. 2

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RICHARD RUEMELIN, OF ST. PAUL, MINNESOTA.

SAND-BLAST CABINET.

Application filed January 16, 1922. Serial No. 529,532.

This invention relates to improvements in cabinets in which castings, or other articles, to be cleaned, are placed and held while being acted upon by sand blast jets. Devices of this kind are especially adapted for use in the industries for removing dust, dirt or scale from castings, or articles, where it is desired to expose a clean surface.

One of the objects of the invention is to provide a sanitary cabinet to promote healthful working conditions for the operator.

Other objects of the invention are to provide means for quick and unobstructed access to the inside of the cabinet, and its supporting table for removing or replacing articles on the table; to provide the enclosing casing with electric lights; to provide for illumination of its interior; to provide a sight screen or window for observation of the parts while being cleaned; to provide a sand hopper, inside of the casing, for the collection of sand and dirt, with means for screening and re-claiming the sand that is capable of re-use; and to provide a casing which may be fitted with either a rotatable or an adjustable table.

Other objects of the invention will appear from the following detailed description taken in connection with the accompanying drawings, in which,

Figure 1 is a central vertical section of the cabinet;

Figure 2 is a front elevation of the same;

Figure 3 is a detail sectional view showing a modified form of the article support or table.

In the drawings, 7 represents the cabinet casing, which is preferably of rectangular form, and is supported at any convenient height by means of legs 47, preferably four in number, the lower ends of the legs being connected by the transverse bars 47^a and 47^b (Figures 1 and 2).

The casing is preferably provided with a hopper bottom 36, having at its lower end a discharge opening 37, adapted to be closed by a slide 38 held in position upon the wall of the hopper by guides 39. Below the discharge opening 37 is an inclined screen 40 over which the sand passes from the discharge opening 37 of the hopper, and through which the fine dust will pass onto a dust chute 41, from which it may fall onto the floor, upon which the cabinet is supported, or into any convenient receptacle. A box 42 for the clean sand, preferably provided with a hopper bottom, is arranged in front of the dust chute 41 in position to receive the sand that passes over the screen 40.

Above the hopper bottom of the casing I provide a table or support for the articles to be cleaned. I have shown in full lines in Figure 1 a circular table 1, provided with suitable perforations 2. This table has preferably a downwardly projecting hub 31 rotatably engaging a vertical stud 30. The edge of this table is preferably in the form of a belt pulley having a groove 25 for the reception of a belt 29, which passes through openings in the front wall of the casing, and around pulleys 26, mounted upon vertical studs 27, carried by brackets 28, preferably secured to the legs 47 of the cabinet. By grasping the portion of the belt that extends between the pulleys 26 and drawing upon said belt in one direction or the other, the operator can turn the table 1 upon its support in either direction, thereby properly positioning the articles upon the table in respect to the jet or jets of sand, as hereinafter described.

For supporting the article carrying table within the casing, I preferably provide upon the inside of said casing the transversely extending angle bars 3 and 4, preferably provided with bolts 6 that are passed through said bars and through suitable holes 5 in the walls of the casing. When the rotatable table is used the stud 30 will preferably be arranged in a hub 33, a pin 34 being provided extending through the stud 30 and through said hub, and said hub will also be provided with the outwardly extending arm, the ends of which rest upon and may be suitably secured through the rails or bars 3 and 4, thereby forming a firm support for the rotatable table 1.

I may, however, remove the rotatable table, and provide a stationary rack or table 1^a, also provide with suitable perforations 2, and I may adjust the rear rail or supporting bar 3 to a position that will bring it considerably above the front rail 4. The table 1^a may then be supported in an inclined position upon said rails, as indicated by dotted lines in Figure 1.

If preferred I may use, as a supporting means within said cabinet a rail or rack bar 1^b extending across the cabinet, above the

table 1. This rack bar may be used without removing the table from the casing, and if preferred it may rest on said table.

When it is desired to apply the sand blast to sheets or plates of metal, glass or other material, that are too long to be placed in said cabinet, I may provide slots 56, preferably inclined, in the end wall of the casing, the lower ends of said slots being preferably in line with the supporting rack or rail bar 1^b (Figure 1), or if preferred, with the top of the rotatable table, or the inclined table.

A plate to be operated upon may be inserted through one of the slots 56, supported upon the rail 1^b or upon one of the tables 1 or 1^a. Said plate may be gradually moved through the casing and be subjected to the sand blast within said casing.

In order to remove as much as possible of the dust created within the cabinet while the device is in operation I preferably provide the top of the cabinet with a pipe 11, to which a suitable exhaust fan may be connected, and I arrange below said pipe the sand deflecting plates 8 and 9, having an air passage 10 between them, the lower deflecting plate 9 being preferably provided with an opening 54, through which any sand or heavy particles that drop behind the deflector plate 9 can pass out into the casing.

The upper front portion of the cabinet is preferably open, and, as here shown, the upper forward portions of the side walls are inclined. A door 17 having an opening therein covered by a screen 13 is secured by suitable straps 18 to a shaft 19, said shaft being journaled in bearings 20 secured to the casing. A handle 21 is secured to the shaft 19 and said handle is also preferably provided with an arm or extension 21^a carrying an adjustable counterweight 22. The lower edge of the door 17 has supported thereon by hinges 14 a flexible curtain 15 provided with a series of vertical slots 16. The door opening at its lower edge is preferably provided with a suitable ledge 50. The top of the cabinet is preferably provided with a suitable opening covered by a reflector 12 within which is located a suitable electric light 12^a.

I preferably provide a suitable sand gun or blast nozzle 46, having an air supply pipe 45, with a controlling valve 53. A sand supply pipe 44 having a sand sucker 43, is also connected to the sand gun or blast nozzle, the sand sucker being adapted to be inserted in the sand box 42 through an opening in the front wall thereof.

In operating the device the castings or articles to be cleaned, if of proper size to be put into the cabinet, are placed upon the table 1, or 1^a. If it is desired to operate upon a long sheet or plate of glass, or other material, the same can be inserted through the opening 56 in the end wall of the cabinet, resting upon the table 1, or 1^a, or upon the rack 1^b. Said plate may be moved through said cabinet, and out of the corresponding opening in the opposite end, as the sanding operation proceeds.

The sand blast gun or nozzle can be held in the hand of the operator, and pushed into the cabinet through the slots in the curtain 15, and the gun or nozzle may be turned by the operator, and directed towards the part of the object upon which it is desired to operate. The electric light will illuminate the interior of the cabinet, and, by looking through the screen 13, the operator can watch the process of the sand blasting operation within the cabinet. When the articles are supported upon the rotatable table 1, the operator can turn said table as the sanding operation proceeds, by means of the belt 29 extending across the front of the cabinet.

It will be obvious that the details of the construction may be varied in many particulars without departing from my invention.

I claim as my invention:

1. In a device of the class described, the combination with a casing, of an article support arranged therein, said casing having an opening in its wall above said article support, through which articles to be cleaned are placed upon said support, a door for the upper portion of said opening, and flexible means adapted to close the lower portion of said opening and permitting a sand blast gun to be projected therethrough to operate upon articles within said casing resting upon said support.

2. In a device of the class described, the combination with a casing, of a horizontally rotatable article support arranged therein, a cable peripherally mounted on said support, sheaves mounted outside said casing and engaging said cable, said cable being adapted to be moved manually to rotate said support, said casing having an opening above said support and flexible means normally covering said opening but permitting a sand blast gun to be projected therethrough to operate upon articles within said casing on said support.

3. In a device of the class described, the combination, with a casing, of an article support arranged in said casing, said casing being provided with an opening in its walls above said article support through which articles to be cleaned are placed upon said support, a door for said opening, flexible means depending from said door within said opening and permitting a sand blast gun to be projected therethrough to operate upon articles within said casing and resting upon said support, said door being also provided with a sight opening, a lamp arranged within said casing above said supporting means,

and a deflector above said lamp arranged to deflect the light onto articles upon said support.

4. In a device of the class described, the combination with a casing, of an article support arranged therein, said casing being provided with an opening in its wall above said support through which articles to be cleaned are placed upon said support, a door covering a portion of said opening, a curtain carried by said door and fitting within said opening and permitting a sand blast gun to be projected therethrough to operate upon articles within said casing, and said door having a sight opening adjacent to said curtain.

5. In a device of the class described, the combination, with a casing, of an article support arranged in said casing, said casing being provided with an opening in its wall above said article support, a door hinged at its upper edge, and closing the upper part of said opening, and a slotted curtain secured to said door, and closing the lower part of said opening, and permitting a sand blast gun to be inserted therethrough to operate upon articles carried by said support.

6. In a device of the class described, the combination, with a casing, of an article support arranged in said casing, said casing being provided in its wall with an opening and door therefor and a curtain carried by said door through which a sand blast gun can be inserted to operate upon articles upon said support, and with oppositely arranged slots in its end walls to permit passage through the casing of articles too long to be placed therein.

7. In a device of the class described, the combination with a casing, of an article support arranged therein, said casing being provided with an opening above said article support through which articles to be cleaned are placed upon said support, a door mounted in said opening for closing a portion of the same, a counterbalance for said door and an operating means therefor, a curtain adapted to close a portion of said opening and permitting a sand blast gun to be thrust therethrough to operate upon the articles within said casing.

In witness whereof, I have hereunto set my hand this 5th day of January 1922.

RICHARD RUEMELIN.