

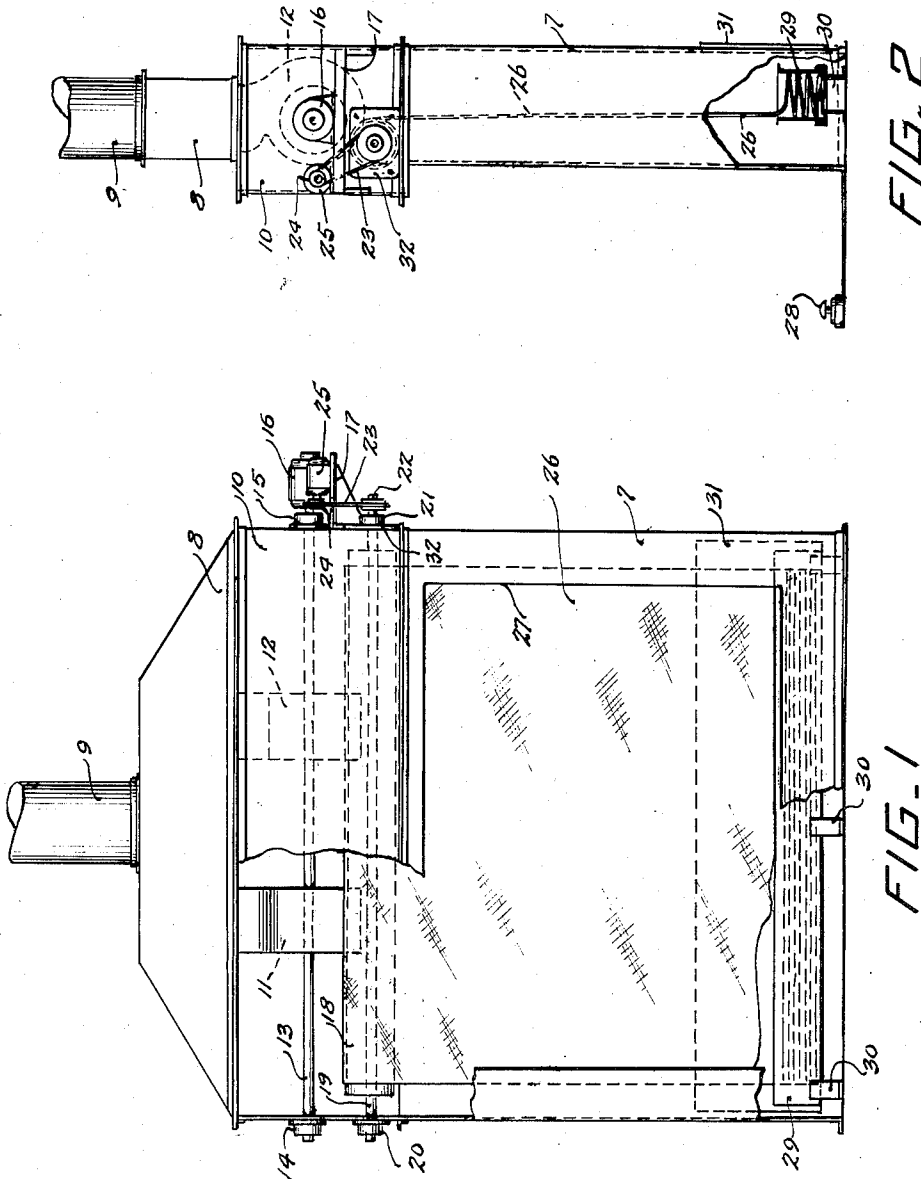
July 1, 1958

S. M. FORSHEE

2,841,073

PAINT SPRAY BOOTH

Filed Sept. 29, 1954



INVENTOR.
SHEILA M. FORSHEE
BY
Edward M. Apple
ATTY

1

2

2,841,073

PAINT SPRAY BOOTH

Sheila M. Forshee, Detroit, Mich.

Application September 29, 1954, Serial No. 459,040

6 Claims. (Cl. 98—115)

This invention relates to paint spray equipment, and has particular reference to a paint spray booth which has a disposable backdrop curtain therein for trapping and dissipating excess paint from a spraying operation.

An object of the invention is to generally improve paint spray booths, and to provide a device of that character, which is simple in construction, economical to manufacture, and efficient in use.

I am aware of the fact that many types of paint spray booths are now known to the public, the most widely used device of this character employing the water fall curtain principle in which a curtain of water is used to carry away the excess paint. Such equipment is usually very bulky, and expensive to construct and operate. Such devices now known to the public require a substantial water supply, a water pump, a pump motor, miscellaneous valves and water lines, together with tanks or reservoirs. The maintenance and cleaning of such devices now known to the public presents heavy burdens upon the over all cost of operating the spray booth, particularly in operations such as the automotive industry, wherein it usually takes two men six hours each, or twelve hours labor time, to clean the water tank approximately every five days, and wherein as much as 620 gallons of fresh water must be employed every five days in even the smallest booth. In such operations, it costs approximately \$2.40, per eight hour day, to operate the pump motor alone for each booth.

It is, therefore, an object of this invention to obviate some of the foregoing difficulties, and to provide a paint spray booth which has a comparatively inexpensive, normally dry disposable, highly absorbent fabric cloth backdrop curtain arranged to catch the excessive paint, with means for advancing the curtain and means for collecting and disposing of the used portions thereof.

The foregoing and other objects and advantages of the invention will become more apparent as the description proceeds, reference being made from time to time to the accompanying drawing forming part of the within disclosure, in which drawing:

Fig. 1 is a front elevational view, with parts broken away, of a device embodying the invention.

Fig. 2 is a side elevational view thereof, with parts broken away.

Referring now more particularly to the drawing, it will be understood that in the embodiment herein disclosed, the reference character 7, in general, indicates the spray booth, which is preferably formed of a suitable gauge sheet metal, the parts of which are secured together by any suitable means. The booth 7 has a collector hood 8 and an exhaust stack 9, through which the fumes are exhausted from the booth. The booth 7 is provided with an upper compartment 10 in which is housed the exhaust fans 11 and 12, which are mounted on a common shaft 13, which is supported at either end in bearings 14 and 15 and which is rotated by means of an electric motor 16, which is mounted on a suitable bracket

17 positioned on the exterior of the booth. Also mounted in the upper compartment 10 is a roll of highly absorbent fabric 18 which is mounted on a shaft 19, which rotates in suitable bearings 20 and 21, and which is rotated by means of a drive wheel 22, which is rotated by a belt 23, which is driven by a wheel, which in turn is driven by a variable speed geared motor 25 also mounted on the bracket 17 on the exterior of the booth. The fabric carried on the roll 18 extends downwardly to form a backdrop curtain 26 which is positioned in spaced relation back of the opening 27 formed in the front wall of the booth 7. It will be noted that the curtain 26 is substantially wider than the opening 27, in order that it may receive all of the excessive paint spray. The motor 16 operates continuously during the use of the spray booth, whereas the motor 25 operates only when it is desired to advance the curtain 26.

The motor 25 is operated through a suitable electric circuit (not shown) which is controlled by means of the foot switch 28. The used portion of the curtain 26 is received in a rectangular container 29, which is supported at the bottom of the booth 7 on suitable brackets 30. When the roll 18 of disposable fabric has been entirely used and collected in the container 29, the latter may be removed through a suitable door 31 and disposed of. A new roll of fabric 18 may then be inserted into the upper compartment 10 through a suitable door 32.

It will be noted that the container 29 is spaced above the floor of the booth 7 so that air may freely circulate around the lower part of the curtain 26 and the container 29. Air is also drawn in and about the roll 18 through the upper portion of the opening 27 from whence it is exhausted through the fans 11 and 12 and the stack 9.

In the operation of the device, a fresh roll of fabric 18 is first positioned on the shaft 19 and the motor 25 is operated, rotating the roll 18 until the lower end of the fabric curtain 26 is received in the container 29. The spraying operation is then performed as in conventional practice, and when the exposed portion of the fabric curtain has collected a sufficient abundance of excessive paint spray, the motor 25 is again operated to advance a fresh section of the curtain 26. The contaminated portion of the curtain is received in accordin like folds in the container 29, which is of such proportions that the entire roll 18 may be received therein before the container 29 has to be emptied. A new roll 18 is then inserted by removing the door 32 and the device is again ready for operation.

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

1. A paint spray booth having a back, a top, side walls, and a front wall with an opening therein, an exhaust for said booth, and a backdrop curtain consisting of a continuous length of normally dry, highly absorbent fabric material, spaced from the back and sides of said booth, said curtain having a tensile strength sufficient to support itself, and having an exposed area dimension greater than the opening in said front wall, feed means for said material, and a removable receptacle for collecting previously exposed portions of said material.

2. The structure defined in claim 1, including a replacement supply of material for said curtain, with automatic rotatable means for supporting said replacement supply.

3. The structure of claim 1, in which said exhaust is in the top of said booth and said receptacle is spaced from the bottom and sides of said booth, whereby air may be circulated about said material and said receptacle.

4. The structure of claim 1, including manually operable controls for actuating the said material feed means.

5. The structure of claim 1, including an upper compartment in said booth, part of which serves as a collector for spray fumes and part of which serves as a housing for the storage of a fresh supply of material.

6. The structure of claim 1, in which said booth has a covered opening for replenishing said material and a covered opening for the removal of said material after it has been used.

References Cited in the file of this patent

UNITED STATES PATENTS

1,982,639	Christofferson	Dec. 4, 1934
2,016,991	Dollinger	Oct. 8, 1935
2,119,978	Wolthuis et al.	June 7, 1938
2,232,561	Richards	Feb. 18, 1941
2,752,003	Hersey, Jr. et al.	June 26, 1956
2,763,139	Callan et al.	Sept. 18, 1956