

June 12, 1962

R. L. BLACK, JR

3,038,191

TRAVELING SUCTION CLEANER WITH AUXILIARY AIR INLET

Filed Oct. 26, 1960

3 Sheets-Sheet 1

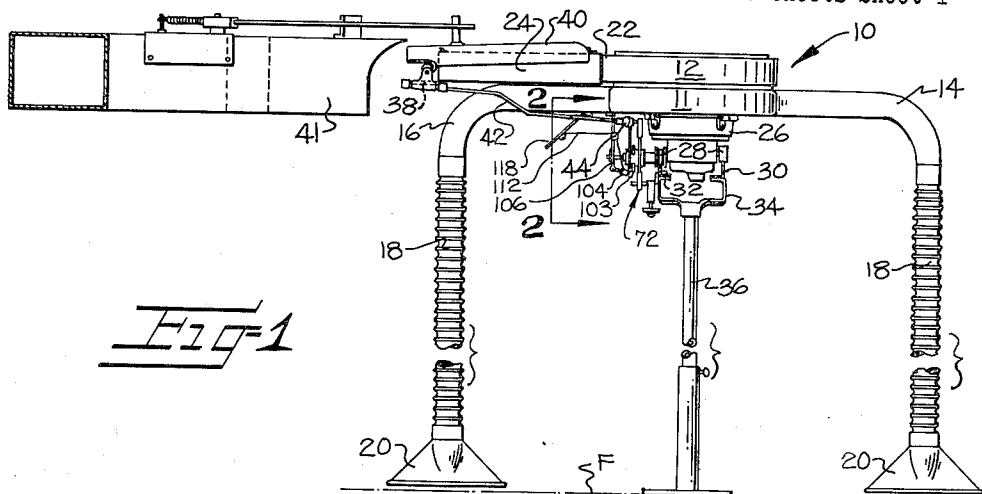


Fig-1

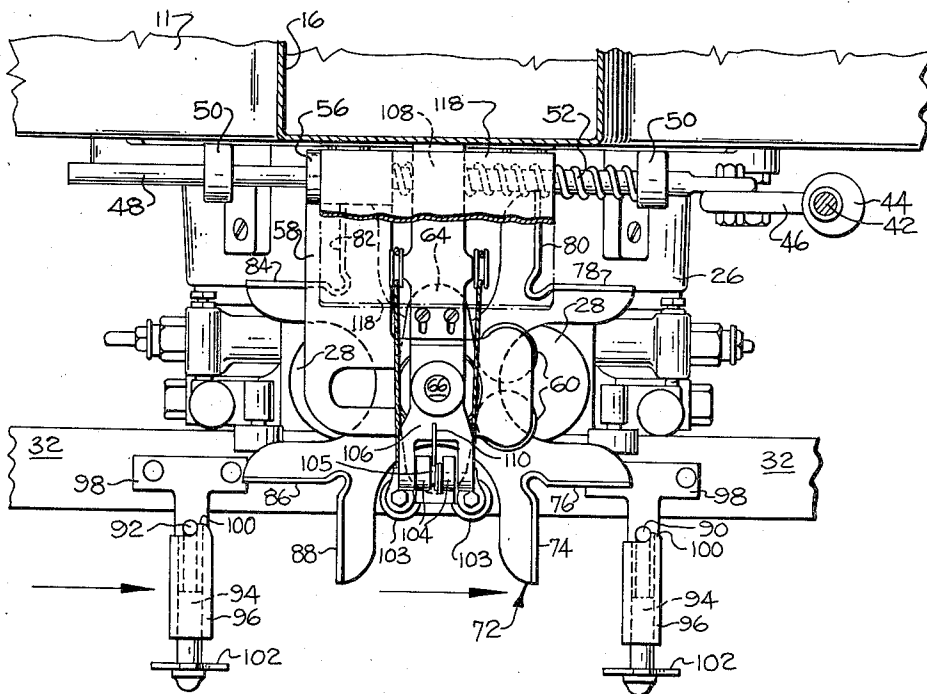


Fig-2

INVENTOR:
ROBERT L. BLACK, JR.

BY *Eaton, Bell, Hunt & DeLuz*

ATTORNEYS

June 12, 1962

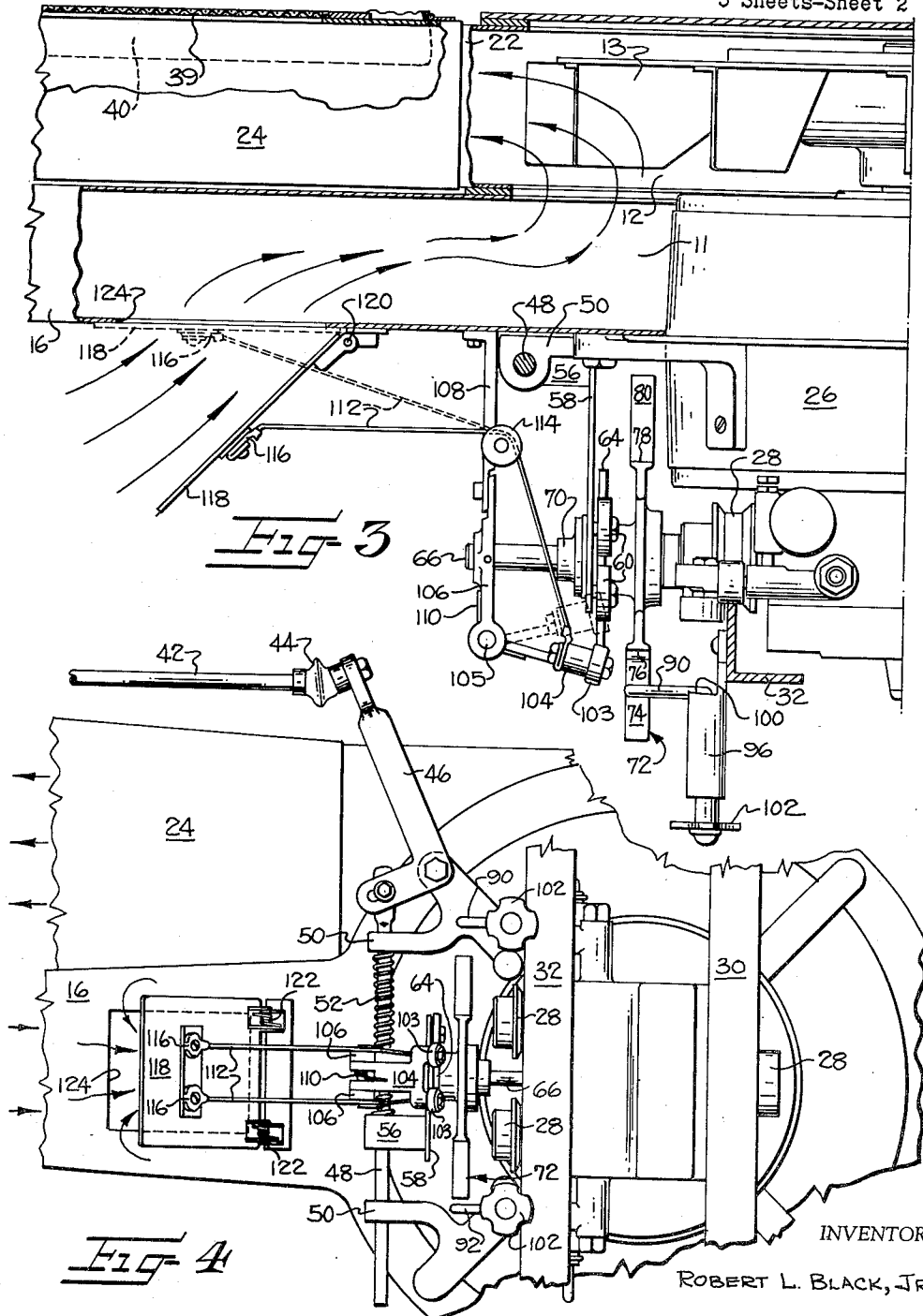
R. L. BLACK, JR

3,038,191

TRAVELING SUCTION CLEANER WITH AUXILIARY AIR INLET

Filed Oct. 26, 1960

3 Sheets-Sheet 2



INVENTOR:

ROBERT L. BLACK, JR.

BY *Eaton, Bell, Hunt & Deitger*

ATTORNEYS

June 12, 1962

R. L. BLACK, JR

3,038,191

TRAVELING SUCTION CLEANER WITH AUXILIARY AIR INLET

Filed Oct. 26, 1960

3 Sheets-Sheet 3

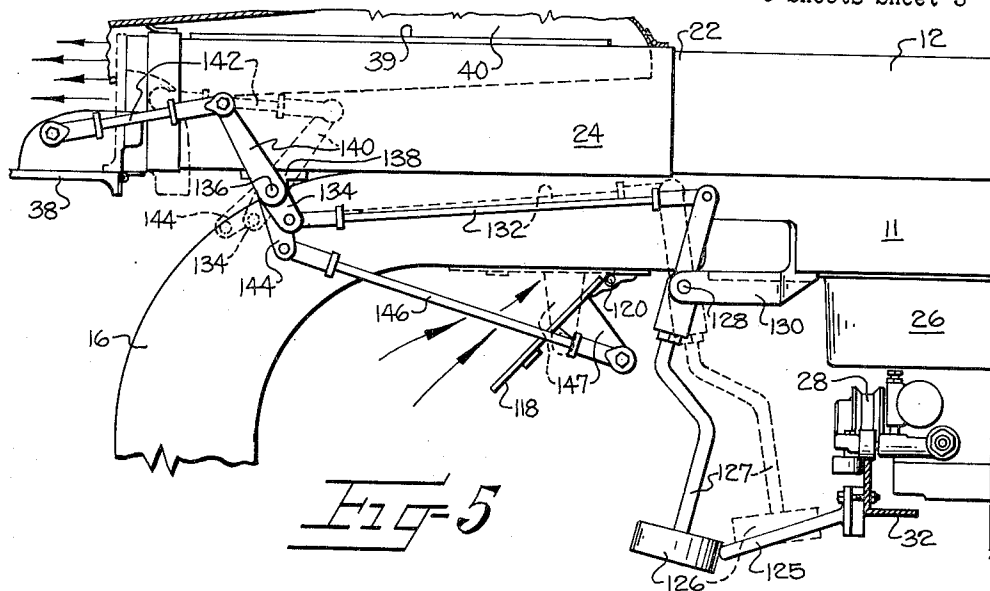


Fig-5

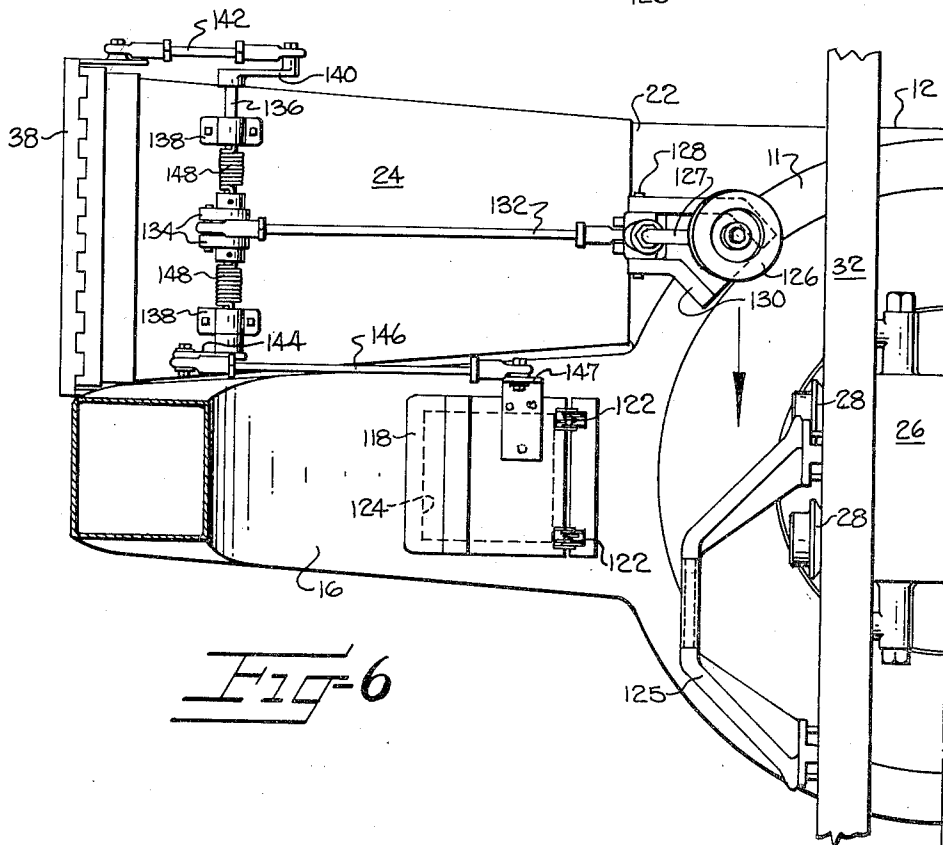


Fig-6

1

3,038,191

TRAVELING SUCTION CLEANER WITH
AUXILIARY AIR INLET

Robert L. Black, Jr., Charlotte, N.C., assignor to Parks-Cramer Company, Fitchburg, Mass., a corporation of Massachusetts

Filed Oct. 26, 1960, Ser. No. 65,219

18 Claims. (Cl. 15—312)

This invention relates to traveling cleaning apparatus particularly devised for removing lint, dust and other light material from room and machine surfaces in manufacturing plants, particularly in textile mills.

More particularly, the invention relates to overhead track mounted traveling suction cleaning apparatus of the type having suction nozzles which move along the floor, machinery and other surfaces in a textile mill and which has a collection chamber movable therewith for receiving lint and the like, the lint and the like being discharged from the collection chamber at certain intervals. Suction cleaning apparatus of this character is disclosed and claimed in co-pending U.S. applications Serial Nos. 757,809 and 759,797, filed August 28, 1958 and September 8, 1958, respectively, by Grover B. Holtzclaw, now Patent Nos. 3,011,925 and 3,011,202.

In the use of a preferred embodiment of the suction cleaning apparatus disclosed in the above-noted U.S. applications, lint and other light material is collected in a collection chamber provided with a filter and which moves with the traveling suction cleaner as the cleaner moves over the machines and floor. At certain intervals during the travel of the suction cleaning apparatus, the collection chamber moves adjacent a stationary receptacle. The collection chamber is then opened and the lint and other light material is exhausted from the collection chamber into the stationary receptacle.

Some difficulties were encountered in the use of this structure when the sole means for exhausting the lint and other light material from the collection chamber was the air drawn through the suction nozzles and exhausted by the blower through the collection chamber. In order to produce effective, high velocity suction currents at the nozzles, they should be restricted in area to an extent which properly reduces the volume of air which may be displaced by the blower. While the air drawn through the nozzles was sufficient to carry lint and other light material into the collection chamber, it was, at times, insufficient to efficiently discharge the collected material from the collection chamber when the latter was opened.

It is therefore the primary object of this invention to provide a traveling suction cleaning apparatus of the character described with a normally closed auxiliary air inlet communicating with the suction side of the blower and which is automatically opened when the collection chamber is opened to provide for a greater flow of air through the collection chamber so as to efficiently discharge the collected material from the chamber.

It is another object of this invention to provide a suction cleaner having a blower, a normally closed collection chamber, and apparatus for increasing the flow of air through the collection chamber when open to more readily facilitate the removal of collected material therefrom.

A still further object of this invention is to provide a suction cleaner having a normally closed collection chamber connected to the discharge side of a blower and apparatus for increasing the flow of air through the collection chamber when opened to more readily facilitate the exhaust of material from the collection chamber.

In its preferred embodiment, the traveling suction cleaner comprises a housing having a fan or air impeller therein and including intercommunicating volute suction

2

and blower casings with one or more suction nozzles connected to the inlet or inlets of the suction casing, and a collection chamber connected to the outlet of the blower casing. The housing is provided with a normally closed auxiliary air inlet which is preferably located in one wall of the suction casing and interposed between the suction casing and one or more of said suction nozzles, and means is provided for opening the auxiliary inlet whenever a discharge door to the collection chamber is opened, thus permitting a substantially greater amount of air to flow into the collection chamber than is permitted when air is drawn into the housing solely through the suction nozzles.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which—

FIGURE 1 is an elevation partially in section and with portions of two suction tubes and a support for the trackway broken away, and wherein the doors to the lint collection chamber and the auxiliary air inlet occupy open position;

FIGURE 2 is an enlarged fragmentary elevation of one embodiment of the invention, partially in section, looking in the direction of line 2—2 in FIGURE 1;

FIGURE 3 is an enlarged fragmentary view of a medial portion of FIGURE 1 partially in section and with portions broken away;

FIGURE 4 is a bottom plan view, on a reduced scale, of the structure shown in FIGURE 3 with portions broken away;

FIGURE 5 is an enlarged fragmentary elevation similar to the upper central portion of FIGURE 1, but showing a second embodiment of means for operating the doors to the collection chamber and the auxiliary air inlet, with portions broken away;

FIGURE 6 is a bottom plan view of the structure shown in FIGURE 5 partially in section and with portions broken away.

Referring to FIGURE 1, the traveling suction cleaner 10 comprises a volute lower suction casing 11 and a volute upper blower casing 12 which collectively form a housing. Said housing is provided with air circulating means in the form of a fan or air impeller 13 positioned within the blower casing 12 (FIGURE 3). Suction casing 11 is provided with a pair of substantially diametrically opposed, outwardly extending ducts 14, 16 communicating with the central portion of suction casing 11. The free end of each duct 14, 16 curves downwardly and has a suction tube 1, preferably of pliable or flexible construction, communicatively connected thereto and depending therefrom. The lower end of tubes 18 have respective, preferably flared nozzles 20 communicatively connected thereto which are adapted to move astraddle textile machines, not shown, and closely adjacent the floor F so as to suck therein lint and other light material from the floor.

An offset outlet portion 22 communicates at one end with blower casing 12 for exhausting the air and airborne lint therefrom. Outlet portion 22 communicates at its other end with a collection chamber 24 which collects the lint and other light material picked up by suction nozzles 20. Suction casing 11, blower casing 12 and collection chamber 24 are supported by an electric motor serving as a self-propelled carriage 26 having suitable carriage rollers or wheels 28 which ride upon tracks 30, 32. Impeller 13 and one or more of the rollers 28 are driven by the motor of carriage 26. Tracks 30, 32 are supported above textile machines, not shown, by suitable U-shaped brackets 34 mounted on posts 36, only one of which is shown.

3

Collection chamber 24 is in the form of an elongate walled housing whose end remote from blower outlet 22 is normally closed by foraminous door or cover 38. Door 38 is hingedly mounted for pivotal movement on the edge of the bottom wall of collection chamber 24. The upper wall of chamber 24 is also provided with a suitable filter or foraminate material 39. When door 38 occupies the closed position, air is exhausted through the door 38, as well as filter 39, while lint, dust and the like are retained within collection chamber 24. When door 38 occupies the open position, as in FIGURES 1 and 5, the lint and other light material is discharged from the collection chamber.

As disclosed in said co-pending applications, Serial Nos. 757,809 and 759,797 (now Patent Nos. 3,011,925 and 3,011,202), an open-ended hood or shield 40 may be pivotally connected to the inner end portion of chamber 24 so as to overlie filter 39 with its outer end normally open to the discharge of air therethrough. Shield 40 operates in synchronism with door 38 so that, when door 38 is opened, the outer end portion of the upper wall of shield 40 drops against the upper wall of chamber 24. This substantially seals filter 39 so that lint and other light material is subjected to the full force of the air stream from impeller 13 for discharging the material from the chamber 24 through the open outer end thereof. As the lint and other material is discharged from collection chamber 24 through the opening, which is normally closed by door 38, it passes into a stationary waste receptacle 41 to be carried, preferably by a suction current, to a more remote disposal point.

One embodiment of means for controlling the operation of door 38 is shown in FIGURES 1, 2, 3 and 4 and comprises a link 42, one end of which is pivotally connected to door 38 above the level at which door 38 is pivotally connected to the lower wall of collection chamber 24 (FIGURE 1). Link 42 extends inwardly toward track 32 and has a universal joint or connector 44 thereon for connecting the same to one arm of a bell crank 46. The other arm of bell crank 46 is pivotally connected to one end of a plunger or shifter rod 48. Shifter rod 48 is guided for horizontal sliding movement, substantially parallel to track 32, in guides 50 which are secured to or formed integral with suitable retaining brackets attached to carriage 26, and one of which pivotally supports bell crank 46.

Shifter rod 48 is encircled by a compression spring 52, one end of which bears against one of the guides 50 and the other end of which bears against a cuff member 56 fixed on shifter rod 48. Cuff 56 is attached to or formed integral with the vertical leg of a substantially L-shaped follower arm 58 (FIGURE 2) whose lower horizontal portion has a pair of cam followers or rollers 60 thereon. The cam followers 60 are urged, by spring 52, against the periphery of a substantially symmetrical and elliptical cam 64 mounted for rotary movement on a shaft 66 projecting outwardly from carriage 26. It will be seen in FIGURE 2 that the lower portion of the follower arm 58 is provided with a substantially horizontal slot 68 therein which is loosely penetrated by shaft 66 for guiding the follower arm 58 to maintain the same in the desired attitude relative to the shifter rod 48. Follower arm 58 is retained on shaft 66 by a suitable collar 70 (FIGURE 3) fixed on shaft 66.

Cam 64 is formed integral with or suitably secured to a rotatable actuating member or starwheel 72 which is also rotatably mounted on shaft 66. Starwheel 72 is provided with a plurality of circularly arranged eccentric arms or abutments 74, 76, 78, 80, 82, 84, 86, 88. The arms or abutments 74, 78, 82, and 86 are adapted to engage adjustable trip fingers 90, 92 carried by track 32. The arms 76, 80, 84 and 88 are not necessarily used in this instance, but are provided so that starwheel 72 may be used with either side thereof facing outwardly relative to the suction cleaner carriage 26 with either direction of

4

movement of the traveling cleaner along trackway 30, 32.

In this instance, the trip fingers 90, 92 are positioned in spaced relationship substantially opposite the corresponding stationary waste receptacle 41 so as to cause door 38 to be opened and then to cause the same to be closed as the traveling cleaner 10 moves past the stationary waste receptacle 41, in the manner to be later described. Each of the trip fingers 90, 92 has a downwardly extending stem 94 thereon (FIGURE 2) guided within a fixed tubular lower portion 96 of a bracket 98 suitably secured to and depending from track 32. The upper end of tubular portion 96 is provided with a stop 100 against which the corresponding trip fingers 90, 92 may be turned by manipulation of a handle or handwheel 102 provided on the lower end of stem 94, below the level of the corresponding tubular portion 96.

It is suggested that when either or both of the trip fingers 90, 92 need not be used, they may be turned by manipulation of the corresponding handwheel 102, so as to extend parallel to track 32 and out of the path of travel of starwheel 72. On the other hand, when the trip fingers 90, 92 are turned outwardly as shown in FIGURE 3, the stops 100 on the upper ends of the tubular portions 96 cause the respective trip fingers 90 and 92 to remain stationary as corresponding arms of the starwheel 72 engage and are moved by the same.

A second pair of cam followers 103 is journaled on a bracket or follower arm 104 pivotally mounted by a pivot pin 105 to a bracket member 106 which is suitably supported by a second bracket member 108 and shaft 66. Bracket member 108 is suitably secured to and depends from duct 16. Cam followers 103 are biased into engagement with cam 64 by a torsion spring 110 concentrically mounted around the pivot pin 105. A pair of pliable members or cables 112, which extend over pulleys 114 mounted on bracket 108, are connected to follower arm 104 at one end, and, at the other end, are connected at 116 to an auxiliary door or closure member 118.

Door 118 is pivotally connected to the lower wall of duct 16 by a pivot pin 120. Suitable torsion springs 122 (FIGURE 4) are mounted around pivot pin 120 to bias door 118 to the position where it normally closes an auxiliary air inlet opening 124 in the lower wall of duct 16.

In FIGURE 2, the carriage 26 of traveling cleaner 10 is shown as though it has moved from left to right and arm 86 has engaged trip finger 92. In operation, as arm 86 engaged trip finger 92, the movement of traveling cleaner 10 from left to right caused starwheel 72 to rotate one-fourth of a revolution so that it occupied the position shown in FIGURE 2. In so doing, the corresponding lobe or highpoint of cam 64 was moved out of engagement with cam followers or rollers 60 on follower arm 58, allowing spring 52 to expand to the left. The expansion of spring 52 moved shifter rod 48 to the left as seen in FIGURE 2 and downwardly as seen in FIGURE 4. This movement of shifter rod 48 rotated bell crank 46 (FIGURE 4) in a counterclockwise direction to occupy the position shown, and caused link 42 to move to the left as seen in FIGURE 4 and outwardly relative to cleaner 10 and track 32.

As link 42 was thus moved outwardly, door 38 was pivoted about its pivot from the closed position to the open position. Thus, while the cleaner 10 occupies the position shown in FIGURE 2, the flow of air from the blower 13 in casing 12 causes the contents of collection chamber 24 to be discharged into the stationary waste receptacle 41. However, if there is a large volume of waste material in collection chamber 24, the air which is received by blower 13 through nozzles 20, tubes 18 and ducts 14, 16 may not be sufficient to move the large volume of material from collection chamber 24. The auxiliary air inlet 124 is therefore provided to assist the blower 13 in delivering a sufficient volume of air to remove the material from collection chamber 24.

5

When the cam 64 is moved a quarter turn by the starwheel 72 to open the door 38 to the collection chamber 24, the second pair of cam followers 103 is moved downwardly by cam 64, thus swinging follower arm 104 about pivot pin 105 from the broken line to the solid line position shown in FIGURE 3. The downward movement of cam followers 103 and arm 104 exerts a force on cables 112 to pull downwardly on door 118. Thus, the door 118 is pivoted about pivot pin 120, against the action of springs 122, to open the auxiliary air inlet 124 in duct 16. The opening of the auxiliary air inlet 124 enables the blower 13 to deliver a larger volume of air than may be supplied through the suction nozzles 20, thereby allowing the impeller 13 to direct a relatively large volume of air outwardly through the collection chamber so as to efficiently discharge collected material from collection chamber 24. It will be apparent that, since cam 64 automatically opens both the door 38 on collection chamber 24 and the door 118, the air inlet 124 may only be open when the door 38 of collection chamber 24 is open and material is to be exhausted from the collection chamber into the stationary receptacle 41.

It will be noted that, with further left to right movement of the cleaner of FIGURE 2, arm 74 engages the second trip finger 90 which effects a quarter revolution to the starwheel 72. The cam 64 is also revolved in a clockwise direction for a quarter revolution, moving the corresponding high surface of cam 64 into engagement with and between the rollers or cam followers 60 and out of engagement with the cam followers 103. The high surface of cam 64 moves the cam followers 60 and, hence cuff 58 and shifter rod 48, from left to right. The link 42 is also moved to the right, as seen in FIGURE 4, moving door 38 from the open position to the closed position. As the high surface of cam 64 is moved out of engagement with cam followers 103 and the low portion of cam 64 is moved into engagement therewith, the springs 122 operate to move door 118 upwardly as seen in broken lines in FIGURE 3, thus closing the auxiliary air inlet 124.

A second embodiment of means for operating doors 38, 118 is shown in FIGURES 5 and 6 wherein like reference characters are used to designate like parts. It should be noted that doors 38, 118 occupy open positions in FIGURE 5 and closed positions in FIGURE 6. A cam member 125 is mounted on track 32 substantially opposite the corresponding stationary waste receptacle 41, and is substituted for the trip fingers 90, 92 of FIGURE 2. A cam follower 126 is journaled on the lower end of a composite cam follower lever 127 pivotally mounted by pivot pin 128 in a suitable bracket 130 secured to and depending from suction casing 11. Follower 126 is so suspended as to engage and be moved outwardly by the cam 125 as the traveling suction cleaner 10 moves along the tracks 30, 32.

Cam follower lever 127 is connected by a link 132 to a crank 134 fixed to a shaft 136. Shaft 136 is journaled in bearings 138 attached to the lower portion of collection chamber 24. Shaft 136 has a crank arm 140 fixed to one end thereof which is connected by a link 142 to the door 38 of collection chamber 24 for opening and closing the same.

Fixed to the other end of shaft 136 is a crank arm 144 which is connected by a link 146 to a bracket 147 attached to door 118 for opening and closing the same. A pair of torsion springs 148 are concentrically mounted on shaft 136 and are fixed at one end to the crank 134 and at the other end to brackets 138 for biasing the doors 38 and 118 to the closed position. The springs 148 also bias the cam follower 126 into position to engage the cam 125 on track 32.

In operation, as the traveling cleaner 10 moves from top to bottom as seen in FIGURE 6, cam follower 126 engages the leading edge of cam 125. The cam follower lever 127 is pivoted about the pivot pin 128 moving the link 132 to the right; i.e., from the broken line to the solid line position in FIGURE 5. The shaft 136 is thus

6

rotated in a counterclockwise direction as seen in FIGURE 5 by link 132 acting on crank 134. As shaft 136 rotates in a counterclockwise direction, crank arm 140 moves link 142 to the left against the action of spring 148, pivoting door 38 about its pivot and opening collection chamber 24. Also, as shaft 136 rotates, crank arm 144 moves link 146 to the right (FIGURE 5) to open door 118 against the action of springs 148 and springs 122.

It is apparent that, with further top to bottom movement of the cleaner in FIGURE 6, the cam follower 126 will move out of engagement with cam 125 and will be returned to the position shown in broken lines in FIGURE 5 by springs 148. As cam follower 126 moves to the position shown in broken lines in FIGURE 5 and solid lines in FIGURE 6, the springs 148 rotate shaft 136 in a clockwise direction as seen in FIGURE 5. As the shaft 136 rotates in this direction, the crank arm 140 is moved to the right and crank arm 144 is moved to the left. The movement of crank arm 140 to the right closes door 38 of collection chamber 24 through link 142 and the movement of crank 144 to the left closes door 118 by way of link 146.

It will be noted that, through the use of the apparatus of the present invention, the traveling suction cleaner 10 may be used to accumulate a greater volume of waste material than was heretofore possible, and any amount of collected waste may be discharged from the collection chamber 24 with more efficiency than has been attainable heretofore. Stationary waste receptacles, such as receptacle 41 may thus be spaced further apart, thus reducing the overhead structure in the mill, which will reduce the problem involved in cleaning this structure and will also reduce the cost of the installation.

In the drawings and specification there have been set forth preferred embodiments of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. In a traveling suction cleaner for surfaces in a textile mill having an overhead, track mounted, suction blower comprising a housing, an air impeller in the housing, at least one air inlet duct connected to the housing and having at least one restricted suction nozzle thereon adapted to move in sufficiently close relation to surfaces to be cleaned so as to suck lint and other light material thereinto, said housing having an air outlet, a collection chamber, normally closed to the discharge of lint and the like therefrom, movable with and communicating with said outlet, and means for opening said chamber to empty collected material therefrom; said duct having a normally closed auxiliary air inlet opening therein, and means operable automatically for opening said auxiliary air inlet opening when said chamber is opened to thereby admit more air to said impeller than that admitted through said nozzles and thereby serving to increase the flow of air through said chamber when the chamber is open.

2. The structure set forth in claim 1 in which said means for opening said chamber comprises a normally closed door on said chamber, at least one cam mounted on said track, follower means movably supported on said suction blower, means operatively connecting said follower means to said door, said follower means being engageable with and movable by said cam to momentarily move said door to open position, said means for opening said auxiliary air inlet opening comprising a normally closed door means for said opening operatively connected to said follower means and being movable to open position upon engagement of said follower means with said cam.

3. In a suction cleaner for the removal of lint and other light material from surfaces to be cleaned, said cleaner having a blower with air inlet and outlet openings, a normally closed collection chamber connected to said outlet opening of said blower, and means for automatically

periodically opening said chamber for predetermined intervals of time; normally closed auxiliary air inlet means communicating with said blower, and means operable in timed relation to the opening of said chamber for opening said auxiliary inlet means to increase the flow of air through said chamber when open.

4. In a suction cleaner for the removal of lint and other light material from surfaces to be cleaned, said cleaner having a blower provided with at least one restricted air inlet opening and an outlet opening, a walled collection chamber connected to the outlet opening of said blower, said collection chamber having a normally closed discharge opening, at least one wall of said chamber comprising a filter for the passage of air therethrough while entrapping lint and the like within the chamber and means for automatically periodically opening said collection chamber discharge opening; normally closed auxiliary air inlet means communicating with said blower, and means operable in timed relation to the opening of said chamber for opening said auxiliary inlet means to increase the flow of air to the blower and correspondingly the flow of air discharged through said collection chamber when said discharge opening is open.

5. In a traveling suction cleaner for the removal of lint and other light material from surfaces to be cleaned, said cleaner having a blower with at least one restricted air inlet opening and an outlet opening, and a collection chamber connected to the outlet opening of said blower, said collection chamber having a discharge opening therein, door means normally closing said collection chamber discharge opening, normally closed auxiliary air inlet means communicating with said blower, and means responsive to the movement of said cleaner for automatically periodically opening said auxiliary air inlet means and said collection chamber door means.

6. In a suction cleaner for the removal of lint and other light material from surfaces to be cleaned, said cleaner having a blower with at least one restricted air inlet opening and an outlet opening, and a collection chamber having at least one foraminous wall portion and being connected to the outlet opening of said blower, said collection chamber having a discharge opening therein, door means normally closing said collection chamber discharge opening, said blower having an auxiliary air inlet opening, door means normally closing said auxiliary air inlet opening, and means automatically periodically opening said door means of the collection chamber and said auxiliary air inlet opening for providing a relatively large volume of air through said collection chamber to assist in discharging collected material therefrom.

7. The structure set forth in claim 6 wherein the means for opening the collection chamber discharge opening and auxiliary air inlet opening constitutes a cam and a cam follower engaging said cam and connected to both of said door means.

8. In a traveling suction cleaner for the removal of light material from surfaces to be cleaned, said cleaner having a blower with at least one restricted air inlet opening and an outlet opening, a collection chamber connected to the outlet opening of said blower, said collection chamber having a discharge opening therein, and door means normally closing said collection chamber discharge opening; the combination of auxiliary air inlet means communicating with said blower, door means normally closing said auxiliary air inlet means, cam means mounted for rotary movement on said cleaner, spaced means adjacent the path of travel of said cleaner for intermittently rotating said cam means, a cam follower engaging said cam means and connected to the door means of said collection chamber and to the door means for said auxiliary air inlet means, and said cam means being operable to open both of said door means to increase the flow of air through said chamber to assist in discharging collected light material therefrom.

9. In a traveling suction cleaner for the removal of

lint and other light material from surfaces to be cleaned, said cleaner having a blower with at least one restricted air inlet opening and an outlet opening, a collection chamber connected to the outlet opening of said blower, said collection chamber having a discharge opening therein, and first door means normally closing said collection chamber; the combination of auxiliary air inlet means communicating with said blower, second door means normally closing said auxiliary air inlet means, a cam rotatably mounted on said suction cleaner, means spaced along the path of travel of said suction cleaner for intermittently rotating said cam, and cam follower means engaging said cam and connected to said first and second door means for opening the same at spaced intervals during the travel of said suction cleaner whereby said blower may draw air through said restricted air inlet opening and through said auxiliary air inlet means to assist in discharging collected material from the collection chamber when said first door means is opened.

10. In a track mounted traveling suction cleaner for the removal of lint and other light material from surfaces to be cleaned, said cleaner having a suction blower with at least one restricted air inlet opening and an outlet opening, a collection chamber connected to and movable with the outlet opening of said suction blower, said collection chamber having a discharge opening therein, and first door means normally closing said discharge opening; auxiliary air inlet means communicating with said suction blower, second door means normally closing said auxiliary air inlet means, cam means mounted on said track and spaced along the path of moved of said traveling cleaner, a cam follower mounted on and movable with said cleaner and positioned to engage said cam means, and means connecting said cam follower with said first and second door means for opening the same when said cam follower engages said cam to provide an increase flow of air through the chamber while discharging collected material from said collection chamber.

11. A track mounted traveling suction cleaner comprising a blower having a casing, said casing having at least one restricted air inlet opening and an outlet opening communicating with said blower, said air inlet opening being adapted to be passed adjacent surfaces to be cleaned so that lint and other light material is removed from the surfaces and carried into the blower casing, a collection chamber connected to the outlet opening of said blower and movable therewith for collecting the material removed from the surfaces, door means in said chamber having a closed position when the material is being collected in said chamber and an open position for the discharge of material from said chamber, means operable automatically for periodically momentarily opening said door means whereby the collected material is discharged by the air from said blower, normally closed auxiliary air inlet means, and means operable in timed relation to the opening of said door means to open the auxiliary air inlet means to provide a greater flow of air through said collection chamber and to thereafter close said auxiliary air inlet means.

12. The structure set forth in claim 11 wherein said blower includes an air inlet conduit forming said restricted air inlet opening, and said air inlet conduit having a normally closed door forming the auxiliary air inlet means and which is open only when said collection chamber is open for providing a greater flow of air to said blower when said last-named door and said chamber are open so the blower may discharge a greater flow of air through said collection chamber to empty the same.

13. The structure set forth in claim 12 wherein the means operable automatically for opening said door means comprises a cam follower connected to said door means, and a cam engageable by said follower and being operable responsive to the movement of said cleaner for opening said collection chamber door means and the door forming said auxiliary air inlet means.

9

14. The structure set forth in claim 13 wherein the cam is a stationary cam mounted on the track adjacent the path of travel of said cleaner.

15. The structure set forth in claim 13 wherein the cam is mounted for rotary movement on said cleaner.

16. The structure set forth in claim 15 including means spaced along the path of travel of said cleaner for rotating said cam.

17. In a traveling suction cleaner for textile machines and/or room surfaces, having a suction blower, a suction conduit communicatively connected to the inlet of said blower, a collection chamber communicatively connected to the outlet of said blower, said chamber being adapted for the continuous passage of air therethrough while being normally closed to the discharge of lint and the like, and first means for opening said chamber for the discharge of lint; normally closed damper means in said suction conduit, and means, operatively associated with said first means, for opening said damper means for increasing the flow of air moved by said blower through said chamber when the chamber is open.

18. In a traveling suction cleaner for removing lint and the like from textile machines and/or room surfaces, hav-

10

ing a suction blower provided with at least one restricted air inlet opening and an outlet opening, a normally closed collection chamber connected to the outlet opening of said suction blower and adapted to receive and collect lint and the like therein, means for opening said chamber for the discharge of the lint and the like therefrom by the air stream directed therethrough by said suction blower, damper means disposed on the inlet side of said suction blower, and means operable in timed relation to the opening of said chamber to open said damper means for increasing the volume of air directed through the chamber by said suction blower.

References Cited in the file of this patent

UNITED STATES PATENTS

2,901,881	Byrum	Sept. 1, 1959
3,011,202	Holtzclaw	Dec. 5, 1961

OTHER REFERENCES

Parks-Cramer Publication No. 411, published Sept. 25, 1958.