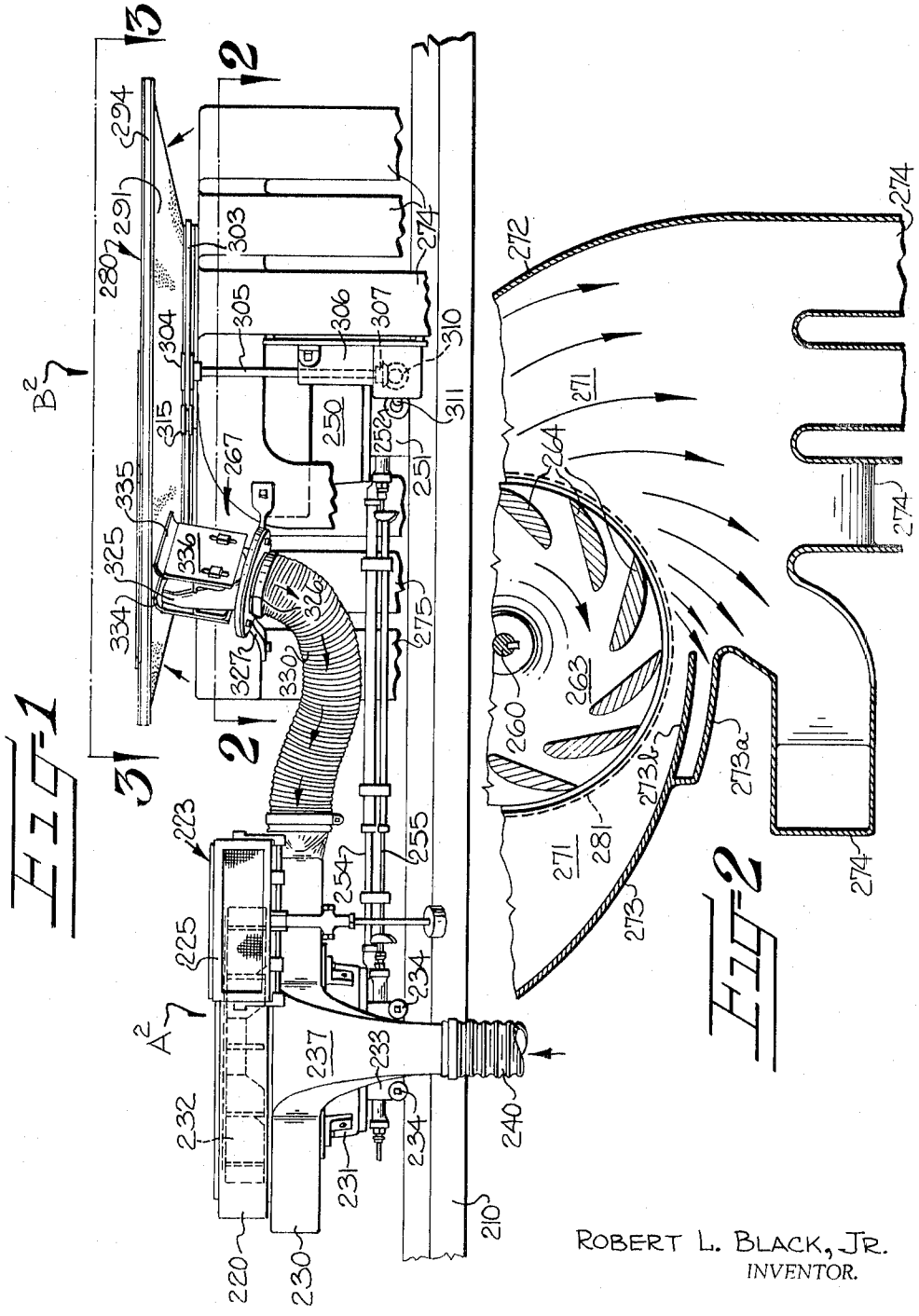
May 17, 1966 R. L. BLACK, JR 3,251,175

TRAVELING TEXTILE CLEANING APPARATUS WITH FILTER CLEANING MEANS

Filed July 2, 1962 3 Sheets-Sheet 1



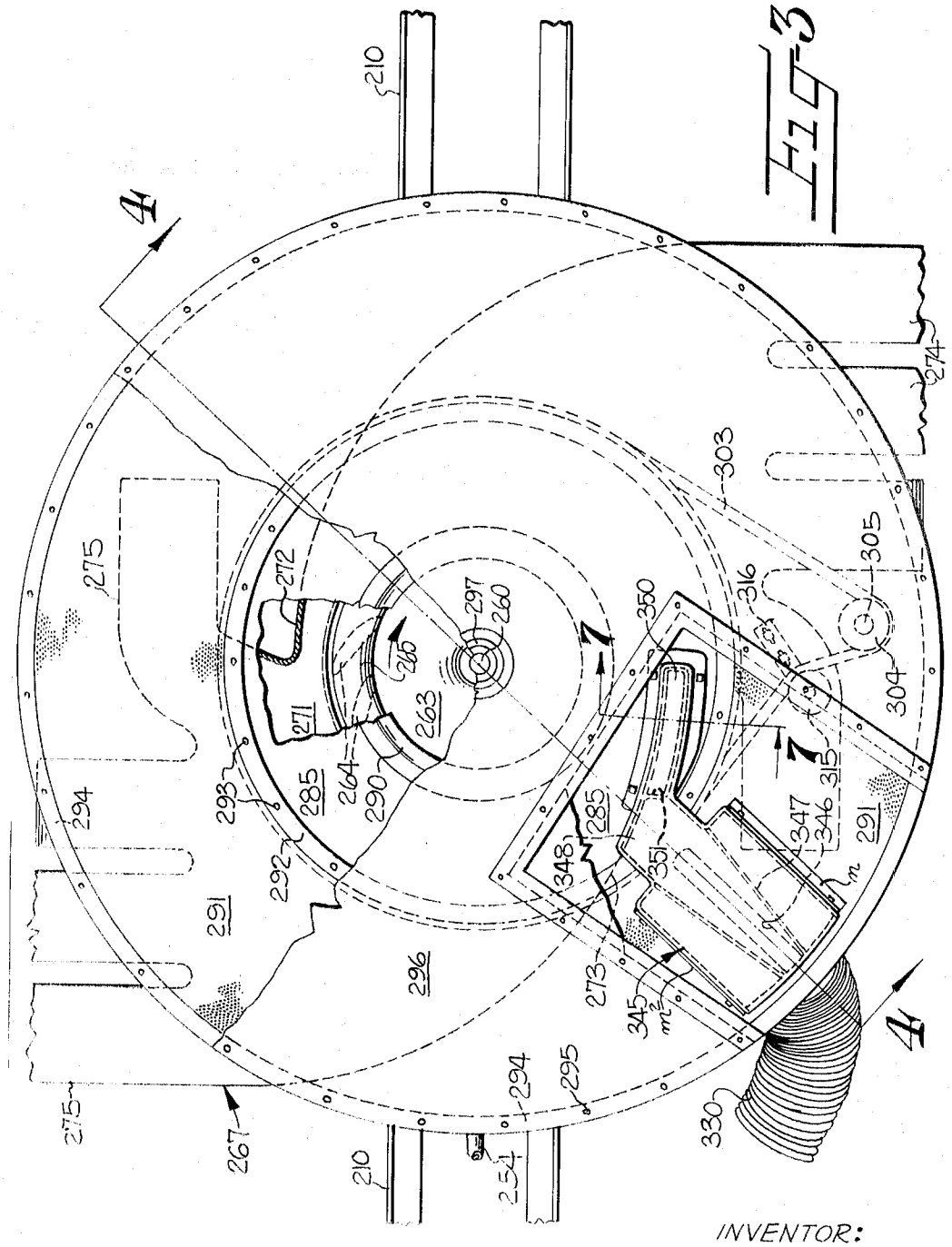
May 17, 1966 R. L. BLACK, JR 3,251,175

TRAVELING TEXTILE CLEANING APPARATUS WITH FILTER CLEANING MEANS

Filed July 2, 1962

3 Sheets-Sheet 2

FIG-3



INVENTOR:
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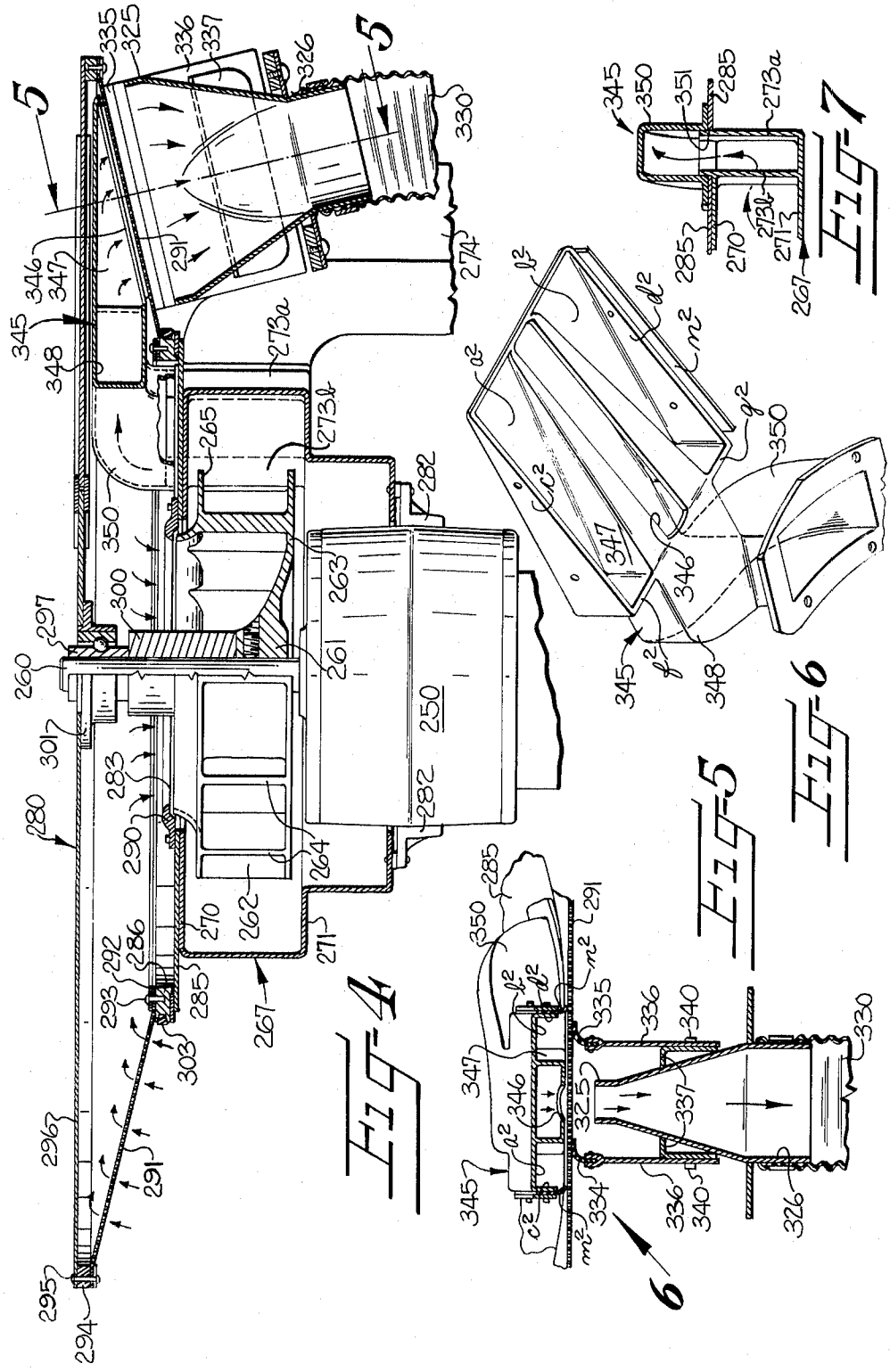
BY Eaton, Bell, Hunt & Seltzer

ATTORNEYS

May 17, 1966 R. L. BLACK, JR 3,251,175

TRAVELING TEXTILE CLEANING APPARATUS WITH FILTER CLEANING MEANS

Filed July 2, 1962 3 Sheets-Sheet 3



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3,251,175

TRAVELING TEXTILE CLEANING APPARATUS WITH FILTER CLEANING MEANS

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Filed July 2, 1962, Ser. No. 206,940
4 Claims. (Cl. 55—294)

This application is a continuation-in-part of my co-pending United States patent application Serial No. 128,511, filed August 1, 1961 and entitled Traveling Cleaning Apparatus, now Patent No. 3,055,038.

This invention relates to traveling blowing cleaning apparatus for textile mills and, more especially, to an improved means for cleaning the filtering medium of such apparatus while the apparatus is traveling over a textile manufacturing operation for disposing of lint and other light material generated as a result of the textile manufacturing operation.

Various types of traveling cleaners are currently being used in textile mills and generally include a blower means movable along a track extending over textile manufacturing operations. Such traveling blower means are provided with suction inlets and blowing outlets for disposing of lint, dust and other light loose particles or material generated as a result of the textile manufacturing operation and it is obviously necessary to suck ambient air into the blower means, through the inlets, to be discharged from the blowing outlets.

It has been determined that the value of traveling cleaners of the above types is increased by filtering the air before it enters the blower means so that relatively clean air is discharged through the blowing outlets of the traveling cleaner. In fact, it has also been found that, by providing a filter at or adjacent the inlet of such traveling cleaners, the filter serves as a collecting surface for lint and other light material, and the lint accumulating on the filter could be sucked away from the filter and conveyed to a suitable collection device or chamber by means of a relatively small suction nozzle with means for effecting relative movement between the suction nozzle and the filter. A traveling cleaner of the type provided with means for filtering the air drawn into the blower means and equipped with means for keeping the filter clean is disclosed and claimed in said copending application Serial No. 128,511.

When used in most departments of a textile mill, the suction means for cleaning the filter of a traveling cleaner, as substantially disclosed in said last-mentioned copending application, has served quite well in most respects and has generally permitted long periods of uninterrupted, efficient operation of the traveling cleaning apparatus. However, there are some rooms of textile mills in which ambient air must be maintained substantially more humid than it is in other textile rooms and, also, many textile rooms, weaving rooms in particular, have substantial amounts of starch or other sticky size material therein which has been applied to the textile strands or other textile products in process and such textile products generate lint which leaves the textile products as "fly" and, since it is desirable that such heavily moisture-laden or starch-laden lint is also removed from the machinery and from ambient air adjacent the textile manufacturing operation, such lint also collects on the filtering medium of the traveling cleaners, but it adheres to the filtering medium with greater tenacity than does the normal type of lint which is devoid of starch and contains only the normal amount of moisture. Accordingly, it would frequently happen that, even though a substantial negative pressure is present in the suction nozzle, this negative pressure was insufficient to dislodge the starch-laden or heavily moisture-laden lint and other waste fibers from the surface of the filter.

It is therefore an object of this invention to provide traveling cleaning apparatus of the character described with means for producing a blowing air current or currents adjacent the filter means and adjacent the suction current so that the blowing air current assists in dislodging and directing matter tending to adhere to the filter into the suction air current. The blowing air current is preferably positioned adjacent the inner surface of the relatively rotating filter with respect to the direction of flow of air through the filter so that the blowing nozzle, or other means for producing the blowing air current, is positioned directly opposite the suction nozzle or other means for producing the suction air current.

In its preferred embodiment, the blowing nozzle is positioned adjacent the inner surface of the rotating filter, which filter is preferably in the form of a perforated metal sheet or screen, and the filter-cleaning blowing nozzle has a duct extending therefrom and communicating with the outlet side of the blower means of the traveling cleaner. The common impeller means serves the purpose of effecting the cleaning function of the traveling blower by drawing air inwardly through the filter and discharging air from the blower means and also serves the purpose of directing a stream of air outwardly through the filter in opposite relationship to the suction nozzle positioned exteriorly of the filter.

Also, since air flows inwardly through the filter on the inlet side of the blower means and it is necessary that the filter-cleaning blowing nozzle discharges air through the filter in the opposite direction from that in which it flows in its course to the inlet side of the blower means, the blowing nozzle is preferably provided with suitable air shields embodied herein in the form of static air chambers on opposite sides of the blowing nozzle with respect to the direction of movement of the filter, and is also preferably provided with a pair of flexible or yieldable wipers at opposed sides of the static air chamber so that the air passing inwardly through the filter to the inlet side of the blower means does not interfere with the action of the blowing stream of air emitting from the filter-cleaning blowing nozzle in effecting its function of assisting in removing from the filter accumulations of lint and other light material, particularly fibrous material which has an unusually strong tendency to stick to the outer surface of the filter.

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 a side elevation of a traveling blowing cleaner and a traveling suction cleaner, in, tandem mounted on a track positioned above a textile manufacturing operation, with portions of the blowing and suction inlets or conduits thereof broken away;

FIGURE 2 is an enlarged fragmentary sectional plan view taken substantially along line 2—2 in FIGURE 1 and showing, in particular, the manner in which a lower portion of the blowing housing is so formed as to deflect air upwardly and outwardly therefrom through the improved filter-cleaning blowing nozzle;

FIGURE 3 is an enlarged top plan view of the traveling blowing cleaner taken substantially along line 3—3 in FIGURE 1, with parts broken away;

FIGURE 4 is an enlarged transverse vertical sectional view through the traveling blowing cleaner taken substantially along line 4—4 in FIGURE 3 with parts broken away to clearly show the manner in which the filter-cleaning blowing nozzle is supported opposite the filter-cleaning suction nozzle;

FIGURE 5 is a fragmentary vertical sectional view taken substantially along line 5—5 in FIGURE 4, showing the air shields of the filter-cleaning blowing nozzle

and also showing the wipers carried by both nozzles for assisting in cleaning the filter as well as forming somewhat of an air seal along opposite sides of each blowing and suction nozzle;

FIGURE 6 is an enlarged perspective view of the improved filter-cleaning blowing nozzle looking generally in the direction of the arrow 6 of FIGURE 5, but showing the nozzle disassociated from the traveling cleaner and also omitting the wiper element or seal from one side portion thereof for purposes of clarity;

FIGURE 7 is an enlarged fragmentary vertical sectional view taken substantially along line 7—7 in FIGURE 3.

The present apparatus is particularly adapted for use in the disposition of lint and other light material in a textile mill and is, therefore, adapted to travel over a textile manufacturing operation. Accordingly, the present apparatus is shown mounted upon a trackway **210** (FIGURES 1 and 3) which extends longitudinally above a textile manufacturing operation, not shown, such as weaving looms in particular, but also including carding machines, spinning frames, roving frames, and other fiber or strand processing machinery or even above areas in which fibers in bale or lap form may be handled.

Trackway **210** may be of any desired or conventional construction and has the suction blower of a traveling suction floor cleaner A^2 and the blower unit of a traveling blowing cleaner B^2 mounted thereon. Trackway **210** may be constructed and the traveling suction floor cleaner A^2 and traveling blowing cleaner B^2 moved along the trackway in a manner substantially as disclosed in U.S. Patent No. 2,011,763 issued to W. B. Hodge et al., on August 20, 1935.

The traveling suction floor cleaner A^2 may be of a type described and claimed in U.S. Patent No. 3,011,202 issued to Grover B. Holtzclaw on December 5, 1961. Therefore, only so much of the traveling suction floor cleaner A^2 will be described as is deemed necessary to clearly describe its manner of cooperation with the traveling blowing cleaner B^2.

It will be observed in FIGURE 1 that the traveling suction floor cleaner A^2 comprises a centrifugal blower, which, as disclosed in said Holtzclaw patent, is in the form of volute upper blower casing **220** having a body, to the outlet of which the inner end of a box-like traveling collection chamber **223** is communicatively connected. Collection chamber **223** should be partially foraminate or screened so that it serves as a filter through which air escapes from collection chamber **223** leaving behind the fibers and other particles directed into the collection chamber from the volute casing **220**.

The free end of collection chamber **223**; i.e., the end of the collection chamber **223** nearest the observer, in FIGURE 1 is provided with a normally closed screened or foraminate door **225** which is adapted to be opened periodically for discharging the contents of collection chamber **223** into a stationary waste receptacle, not shown. Door **225** may be opened and closed at the desired intervals by means fully disclosed in said Holtzclaw Patent No. 3,011,202 and, therefore, a detailed description thereof is deemed unnecessary.

Blower casing **220** rests upon and is suitably secured to a lower or suction casing **230**, the proximal walls of the casings **220**, **230** being opened to provide communication therebetween. The lower wall of suction casing **230** is suitably secured to and encircles the enlarged upper portion of an electric motor **231** having an impeller wheel or fan **232** mounted on the upper end of its shaft and positioned within the upper blower casing **220**.

Electric motor **231** rides upon a carriage **233** shown in the form of a gear box having suitable rollers **234** thereon which ride upon trackway **210**. One or more of the rollers **234** may be driven by electric motor **231** substantially as disclosed in said Hodge et al. Patent No. 2,011,763. Suction casing **230** is provided with one or more radially and outwardly extending ducts **237**, only one of which is shown, and which curves downwardly at its free end and has a suction tube **240** communicatively connected thereto. The lower end of tube **240** may be provided with a suction nozzle for moving in close proximity to the floor below the track **210** or for movement past various parts of machines or other textile operations below the track. The suction nozzle is not shown in the present instance but may be of the type disclosed in said Holtzclaw patent.

It is apparent that, as traveling suction cleaner A^2 moves along trackway **210**, impeller wheel **232** creates a continuous suction current in conduit or duct **237** and causes lint and other light particles to be drawn into tube **240** through duct **237** and into suction casing **230**. The suction current then passes upwardly into blower casing **220** where it is converted into a blowing or positive air pressure current which passes outwardly through the outlet of blowing casing **220** and into the traveling collection chamber **223**.

It is with a traveling suction floor cleaner of the general character described that the present traveling blowing cleaner B^2 is particularly adapted to be associated, since in this instance, the traveling suction floor cleaner A^2 serves as a convenient source of suction for the filter-cleaning suction means associated with the traveling blowing cleaner B^2, although it is to be distinctly understood that other means may be provided for producing suction in the filter-cleaning suction means to be later described.

The filter-cleaning suction means disclosed herein associated with the filter medium of the traveling suction blower is of substantially the same type as the suction nozzle arrangement described and claimed in said copending application, and it is in combination with this type of suction filter cleaner that the present blowing filter cleaner is particularly adapted to be associated, although important modifications have been made in the traveling blower cleaner which form parts of, and which facilitate the adaptation of, the novel filter-cleaning blowing means of the present invention.

Traveling blowing cleaner

The blower-type traveling cleaner B^2 comprises a blower unit including an electric motor **250** which rides upon a carriage **251** (FIGURE 1) in the form of a gear box fixed to or formed integral with the housing of electric motor **250** and also having suitable rollers **252** thereon, only one of which is shown in FIGURE 1, which ride upon trackway **210**.

Although either or both of the traveling cleaners A^2, B^2 may be self-propelled, the carriages **233**, **251** thereof are interconnected in the present embodiment of the invention illustrated in FIGURE 1. If a separate tractor is not employed, it is apparent that one or more rollers on at least one of the carriages must be driven to propel both of the traveling cleaners A^2, B^2 along trackway **210**. In this instance, carriages **233**, **251** are interconnected by a pair of longitudinally extensibly adjustable links or connecting rods **254**, **255**, opposite ends of which are suitably pivotally secured to carriages **233**, **251**.

As best shown in FIGURE 4, electric motor **250** of traveling blowing cleaner B^2 has a shaft **260** thereon which preferably rotates about a vertical axis and on which a hub **261** of an impeller or fan **262** is fixedly mounted. Impeller **262** may be of conventional or other construction and, in FIGURES 1 and 2, it will be noted that the hub **261** of impeller **262** has a circular disk or plate **263** integral therewith which has the lower ends of circularly spaced blades **264** formed integral therewith (FIGURES 2 and 4), the upper ends of which are preferably formed integral with an annular rim **265** which defines an opening through which air may be drawn by the rotating impeller blades **264** whereby the air flows generally radially outwardly in a somewhat volute path from the blades of impeller **262** in a well-known manner.

Impeller 262 is positioned within a lower substantially volute casing 267 which is preferably substantially symmetrical in plan as shown in FIGURE 3. Lower casing 267 of traveling cleaner B^2 includes top and bottom walls 270, 271, the shape of which conforms to substantially diametrically opposed volute side walls 272, 273. Thus, at substantially diametrically opposed points, transversely of the trackway 210, the walls 272, 273 are positioned in relatively close proximity to the fan or impeller 262 while, on the other hand, the side walls 272, 273 curve outwardly in opposite relation to each other so that the inner surfaces thereof are generated in an arcuate path progressively increasing in distance away from the impeller 262. The side walls 272, 273, with the corresponding portions of the top and bottom walls 270, 271 form discharge ducts which, in turn, form outlet portions 274, 275 projecting outwardly adjacent opposite sides of the trackway 210.

There are various ways in which the outlets 274, 275 may be arranged for directing currents of air toward machines, floors, ceilings, walls and other areas, as may be desired. Accordingly, a further detailed illustration and description thereof is deemed unnecessary. The outlets 274, 275 may be arranged as disclosed in said copending application Serial No. 128,511 or as disclosed in U.S. Patent No. 2,931,061, granted to G. B. Holtzclaw on April 5, 1960, for example.

An upper casing 280, which may also be termed as a suction casing or filter carrier casing, is carried by and rotates relative to lower casing 267. Therefore, although the lower and upper casings 267, 280 move with carriage 251, along trackway 210, the lower and upper casings may also be termed respectively as stationary and rotary casings which collectively form a composite centrifugal blower.

The lower portion of casing 267 has a plurality of circularly spaced brackets 282 thereon which are provided for securing the lower casing 267 to electric motor 250.

Now, in order to filter the air in its course to the inlet 283 of the lower casing 267 and to prevent excessive accumulation of lint and other light material on the filter means, the upper casing 280 is mounted for rotation upon the lower casing 267 and is provided with a filter means, to be presently described, with novel means for cleaning the same as air flows inwardly through the casing 280, into lower casing 267 and is caused to flow through the outlets 274, 275 by the rotating impeller 262. To this end, the top wall 270 of lower casing 267 (FIGURE 4) has a relatively large annular plate 285 fixed thereon which serves as a stationary bottom wall for the rotary upper casing 280 and also serves as a support for the rotary casing 280.

The lower portion of upper casing 280 has a ring or annular pulley 286 on the lower portion thereof whose lower surface is preferably provided with a suitable bearing race adapted to move in rotary engagement with the upper surface of the outer portion of annular plate 285. The annular plate 285 has an annular lip member 290 on the central portion thereof which overlies the upturned central portion of the upper flange or annular portion 265 of fan 262 and defines the air inlet opening 283 of the lower casing 267.

The upper surface of the annular pulley 286 supports the lower inner portion of an annular somewhat frusto-conical foraminate filter or screen 291 which is secured to the upper surface of annular ring or pulley 286 by means of an annular plate 292 and screws or rivets 293. Filter 291 may be planar, if desired, but is preferably frusto-conical so that its surface area is enlarged without enlarging its external diameter or decreasing its inside diameter.

The outer portion of filter 291, adjacent the periphery thereof, is secured to an annular frame member or ring 294, as by rivets 295. The latter rivets 295 also serve to secure and upper circular wall or plate 296 to the upper surface of the annular frame member or ring 294.

In order to maintain rotary casing 280 in concentric relation to annular plate 285 during rotation of rotary casing 280, the upper end of shaft 260 of electric motor 250 has the inner race of an anti-friction bearing 297 mounted thereon, which inner race is shown as being of greater length than the outer race of bearing 297 and rests upon a sleeve or spacer 300. Sleeve 300 is mounted on shaft 260 and its lower portion is positioned within the circularly arraged blades 264 of fan 262 and bears against the upper surface of the hub 261 of fan 262. The outer race of bearing 297 has an annular enlarged portion 301 thereon upon which the centeral portion of plate 296 of upper casing 280 is positioned. If so desired, plate 296 may be secured to the flange 301 on the outer race of anti-friction or ball bearing 297.

In order to impart rotary movement to upper casing 280 relative to lower casing 267, pulley 286 is engaged by an endless belt 303, which may be in the form of a V-belt. The V-belt 303 also engages a relatively small pulley 304 (FIGURES 1 and 3) mounted on the upper end of a substantially vertically disposed shaft 305. Shaft 305 is journaled in a gear box 306 suitably secured to one of the duct portions 274.

The lower end of shaft 305 in FIGURE 1 has a bevel gear 307 fixed thereon which meshes with a bevel gear 310 fixed on one end of a shaft 311. Shaft 311 is fixed to one of the rollers 252 of carriage 251 so that, with rotation of the corresponding roller 252 in engagement with trackway 210, rotation is imparted to shaft 311, gears 310, 307, shaft 305, pulley 304 and belt 303 to thus impart rotation to the upper casing 280 at a relatively slow speed as compared to the speed of rotation of the fan 262, for example. If so desired, a suitable idler pulley 315 (FIGURES 1 and 3) may be journaled on a bracket 316 adjustably secured to one of the outlet portions 275 of lower casing 267 for maintaining the endless belt 303 under tension.

Suction-filter cleaning apparatus

In order to remove and dispose of lint and other light material as it adheres to the outer or lower surface of filter 291 a relatively narrow elongate suction nozzle 325 (FIGURES 1, 4 and 5) has its mouth spaced immediately below and in registration with filter 291. It should be noted that the mouth of suction nozzle 325 is of substantially the same or slightly lesser length than the width of annular filter 91 and the mouth of nozzle 325 is of substantially lesser width than the length of the filter and extends generally radially thereof.

Suction nozzle 325 is suitably connected to traveling blowing cleaner B^2 so as to travel therewith while remaining stationary with respect to the rotating filter 291. In other words, means are provided for effecting relative movement between filter 291 and suction nozzle 325. In this instance, it will be observed in FIGURE 1 that the lower portion of suction nozzle 325 projects downwardly and terminates in an enlarged rounded portion 326 which is suitably secured to the adjacent lower casing 267, as by brackets 327.

Suction nozzle 325 may be connected to any suitable source of suction so arranged that suction nozzle 325 can move with the traveling blowing cleaner B^2. Of course, it is highly desirable that such source of suction include means for collecting and storing the lint drawn into suction nozzle 325. In its preferred embodiment, suction nozzle 325 is connected to the inlet side of the traveling suction cleaner A^2. To this end, it will be observed in FIGURE 1 that one end of a flexible tube or conduit 330 is communicatively connected to the lower end of nozzle 325. The other end of tube 330 is connected to the side wall of suction casing 230 of traveling suction cleaner A^2 for communication with the interior of suction casing 230.

It is thus seen that, during rotaion of filter **291**, it moves continuously past suction nozzle **325**, and suction nozzle **325** sucks lint and other light material off the lower surface of filter **291**. The lint sucked off the filter **291** by nozzle **325** is thus drawn through flexible tube **330**, into suction casing **230** of traveling suction cleaner A^2, into blower casing **220** and is thus blown into traveling collection chamber **223**. Thus, traveling collection chamber **223** serves as a collector for the lint and other light material removed from the lower surface of annular filter **291** by suction nozzle **325**.

Spaced combination seals and brushes or wiper elements **334**, **335** may be provided adjacent opposite sides of the mouth of nozzle **325** to yieldably bear against the outer surface of filter **291** so as to assist in dislodging lint and other light material from the lower surface of the filter **291**. Although opposed ends of the mouth of suction nozzle **325** are exposed to the atmosphere, the wiper elements on adjacent opposite sides of the mouth of suction nozzle **325** also serve to seal the mouth of the suction nozzle **325** to some extent so that the inward flow of air through filter **291** does not materially affect the effectiveness of the suction stream produced by the suction nozzle **325**.

The seals **334**, **335** may be made from various types of material such as rubber, Neoprene, soft plastic material, leather or the like. Each of the seals **334**, **335** is shown as being relatively thin and is clamped in the bifurcated upper end of a plate **336** which extends parallel to the mouth of the nozzle **325** and is spaced outwardly therefrom. As best shown in FIGURE 5, opposed sidewalls of nozzle **325** extend downwardly in diverging relationship and the lower portions of the plates **336** are suitably secured to angle brackets **337**, as by screws **340**. Each angle bracket **337** may be welded or otherwise suitably secured to the corresponding diverging wall of nozzle **325**.

Blowing filter-cleaning apparatus

The suction nozzle **325** heretofore described and the related filter carrier **280** and filter **291** may be generally of the type disclosed and claimed in said copending application Serial No. 128,511 and it is in combination with a structure of this general character that the novel filter cleaning means of the present invention is particularly adapted to be associated, although not limited thereto. As heretofore stated, the suction nozzle of the type disclosed herein and indicated at **325**, has served quite well in most respects in dislodging lint and other light material which would collect on the lower or outer surface of filter **291**. However, in instances where the lint may be particularly damp or, more importantly, in instances in which the lint or other light material contains substantial amounts of starch or other sticky size material, such as the lint which is generated by looms in the processing of sized yarns, the lint may adhere quite tenaciously to the outer surface of the filter **291**, with the result that the suction nozzle **325**, even though assisted by the wiper elements **334**, **335**, may fail to dislodge such tenaciously adhering fibers from the external face of the filter.

Therefore, in order to assist in the removal of lint and other light material from the external face of the rotating or movable filter **291**, means are provided for producing a blowing current of air immediately adjacent the mouth of the suction nozzle **325** and directing the blowing current of air generally toward or into the mouth of the suction nozzle **325**. In this instance, the means for producing the filter-cleaning blowing current of air is shown in the form of a filter-cleaning blowing nozzle broadly designated at **345**.

The blowing nozzle **345** includes a hollow body **347** which is disposed closely adjacent to the inner face of filter **291**, the nozzle body **347** being provided with an air discharge opening or mouth **346** therein which is positioned substantially directly opposite the mouth of the suction nozzle **325** so that air emanating therefrom flows directly through the rotating filter **291** and into the mouth of suction nozzle **325**. The body **347** of nozzle **345** is formed as a substantially triangularly-shaped free end portion of a duct **348** which is substantially L-shaped and has a laterally extending and downwardly curved hollow portion **350** integral therewith which is suitably secured to the annular plate **285** and communicates with the interior of lower casing **267** through an opening **351** formed in the plate **285** and in the upper wall **270** of lower casing **267**.

As best shown in FIGURES 2 and 3, the wall **273** of lower casing **267** is provided with an offset portion **273***a* adjacent that end thereof which is disposed in the closest proximity to the fan **262**. This offset portion corresponds with the opening **351** formed in the upper wall **270** of lower casing **267**. Although it is not entirely necessary, the wall **273** also preferably has an inner extension **273***b* spaced inwardly of the offset portion **273***a* thereof so that air is entrapped to some extent, in the space between the wall portion **273***a* and wall extension **273***b* (FIGURE 2). Since this space coincides with the opening **351** formed in the upper wall **270** of the lower casing **267**, it is apparent that air is deflected upwardly through duct portions **350** and **348** and is exhausted through the opening **346** of nozzle **345**.

As best shown in FIGURES 4 and 5 blowing nozzle **345** is positioned in close proximity to filter **291** and, thus, the air circulated by blower fan **262** is also utilized as the source of compressed air for blowing nozzle **345** and this air pressure against the inner surface of the filter **291** is generally more than sufficient to dislodge any fibers which may tenaciously tend to adhere to the opposite outer face of filter **291**, even though such fibers may be impregnated with starch or other sticky substances.

In order to further insure that the stream of air from the opening **346** of nozzle **345** is efficiently effective, there is provided a pair of shields or air deflectors a^2, b^2, which straddle the hollow body **347** of nozzle **345**. The air deflectors a^2, b^2 are in the form of hollow static air chambers. The upper wall of the body **347** of nozzle **345** extends outwardly substantially beyond the body **347** per se and has downwardly projecting flange portions or auxiliary side walls c^2, d^2 thereon which define the static air chambers a^2, b^2 with opposed side walls of the body of nozzle **345**.

The sidewalls of body **347** as well as the spaced apart auxiliary sidewalls c^2, d^2 are all substantially right-triangularly shaped and the inner ends of the auxiliary side walls c^2, d^2 have the outer edges of corresponding wall portions f^2, g^2 connected thereto and extending inwardly and being secured to the opposed side wall surfaces of duct **348**. Thus, static air chambers a^2, b^2 reduce air circulation in the area immediately adjacent opposed sides of the mouth **346** of the nozzle **345**.

It will also be observed that the walls c^2, d^2 have respective wiper elements or seals m^2, n^2 suitably secured thereto and rubbingly or yieldably engaging the upper surface of filter **291** so that, with the exception of the porosity of the filter **291**, the static air chambers a^2, b^2 are substantially sealed against the flow of air therethrough. Further, it will be noted that the seals **334**, **335** associated with the suction nozzle **325** coincide substantially with the static air chambers a^2, b^2 so that a minimum of turbulence is present adjacent the discharge opening **346** of the blowing air nozzle **345** and so that the inward flow of air through the filter **291**, as effected by the fan **262**, has very little, if any effect on the flow of air outwardly from filter-cleaning blowing nozzle **345** and inwardly through the mouth of filter-cleaning suction nozzle **325**.

It is thus seen that there has been provided a novel means for preventing airborne lint and other light material, including such material which may have a sticky substance adhering thereto, from clogging the filter **291**

to such extent as to interrupt or retard the inward flow of air therethrough and wherein the suction nozzle **325** cooperates with the blowing nozzle **345** so as to continuously dispose of the lint and other light material removed from the filter by the cooperative action of blowing and suction streams produced by the respective nozzles **345**, **325**, thereby insuring that clean air is discharged from the blowing outlets and/or nozzles of the traveling blowing cleaner B^2 and greatly increasing the efficiency of such blowing outlets and preventing accumulation of lint on the machines and various objects in the room of a textile mill or in the ambient air adjacent the traveling blowing cleaner.

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. A pneumatic traveling cleaner supported on a track extending over textile machines arranged in rows for movement over said machines during the generation of lint by said machines comprising

(a) a motor driven carriage mounted for travel on said track,

(b) a motor driven blower fan,

(c) a housing for said blower fan having an air inlet and an air outlet,

(d) duct means connected to the air outlet of said blower fan housing for directing blowing air streams toward the textile machines over which the cleaner travels for blowing lint and the like from such machines,

(e) a screen filter for the air inlet of said fan housing for filtering ambient lint and the like from air entering the inlet, and

(f) means for cleaning the filter comprising

(1) a suction nozzle positioned adjacent the outer surface of said filter and communicating with a suction source and lint collector traveling with said cleaner;

(2) a blowing nozzle positioned adjacent the inner surface of the filter in juxtaposed relation to the suction nozzle;

(3) means causing a blowing air stream to flow from the blowing nozzle through the filter toward the suction nozzle; and

(4) means causing relative movement between the filter and the blowing and suction nozzles to effect cleaning of substantially all of the filter.

2. A traveling cleaner according to claim **1** in which the blowing nozzle is communicatively connected to the air outlet of the blower fan housing.

3. A traveling cleaner according to claim **2** wherein the filter is movable relative to the blowing and suction nozzles and means are provided for automatically imparting movement to the filter during travel of the cleaner to cause substantially all areas of the filter to be subjected to the cleaning action of the blowing and suction nozzles.

4. A pneumatic cleaner supported on a track extending over textile machines arranged in rows for movement over said machines during the generation of lint by said machines comprising

(a) a motor driven carriage mounted for travel on said track,

(b) a motor driven suction fan,

(c) a housing for said suction fan including air inlet means for picking up lint generated by said textile machines,

(d) a collecting chamber into which said lint is delivered,

(e) a motor driven blower fan,

(f) a housing for said blower fan having an air inlet and an air outlet,

(g) duct means connected to the air outlet of said blower fan housing for directing blowing air streams toward the textile machines over which the cleaner travels for blowing lint and the like from such machines,

(h) a screen filter for the air inlet of said blower fan housing for filtering ambient lint and the like from air entering the inlet, and

(i) means for cleaning the filter comprising

(1) a suction nozzle positioned adjacent the outer surface of said filter and communicating with the housing for said suction fan, whereby lint is sucked from the surface of said filter for delivery into said lint collecting chamber;

(2) a blowing nozzle positioned adjacent the inner surface of the filter in opposed relation to the suction nozzle;

(3) means communicatively connecting the blowing nozzle to the air outlet of the blower fan housing whereby a blowing air current is directed through the filter to assist in removing lint tending to collect on the filter, and directing it toward the suction nozzle; and

(4) means causing relative movement between the filter and the blowing and suction nozzles to effect cleaning of substantially all of the filter.

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