BOWLING LANE DUSTER WITH TAPERED ROLLER

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The present invention relates to improvements in dusters and is more particularly concerned with the novel construction and assembly of a cloth roll type duster for bowling lanes and floor surfaces.

More particularly, the apparatus of the present invention comprises a rigid frame structure including side boards and a cross head extending between the side boards and of a length to bridge a bowling lane with the side boards overhanging the gutters on the sides of the lane. The side boards incorporate a cloth, the web of which is extended beneath the cross head so as to rest upon the surface of the lane, and which, when soiled, is collected on a rewinding roller. In use, the duster is advanced along the length of the lane and, as the web beneath the cross head and contacting the floor surface becomes soiled, the cloth is intermittently wound upon the rewinding roller by actuating a ratchet assembly. When all of the cloth is wound upon the rewinding roller, the loaded rewinding roller is removed from the frame and the soiled cloth is removed from the rewinding roller.

In order to avoid this troublesome task, applicants have provided a rewinding roller of novel construction which is comprised of two like frusto-conical halves arranged end to end and which, have, mounted between their opposed ends, a cutter arranged to be selectively operated to slit the web circumferentially as it is wound thereon. Thus, when the loaded rewinding roller is removed from the frame, the roller will separate into two halves each of which may be easily slipped from the rewinding roller portion about which it is wound.

Therefore, it is an object of the invention to provide a duster cloth apparatus of novel construction.

Another object of the invention is to provide an apparatus of the character described with a rewinding roller of novel construction.

Another object is to provide a two-piece rewinding roller and associated web cutting means which is inexpensive and easy to manufacture, simple to assemble and disassemble, and very efficient in operation and easy to use.

The structure by means of which the above noted and other advantages and objects of the invention are attained will be described in the following specifications, taken in conjunction with the accompanying drawings showing a preferred illustrative embodiment of the invention, in which:

FIG. 1 is a perspective view of a bowling lane duster assembly showing the front view of the present invention, showing it seated on a bowling lane;
FIG. 2 is a longitudinal sectional view of the rewinding roller assembly and its mounting, taken substantially on line 2—2 of FIG. 1;
FIG. 3 is a detail perspective view of a part of the rewinding roller assembly;
FIG. 4 is a transverse sectional view of the wiper taken substantially on line 4—4 of FIG. 1; and
FIG. 5 is a view of a fragmentary piece of the duster cloth.

Referring to the exemplary disclosure in the accompanying drawings, the bowling lane duster best shown in FIG. 1 comprises a pair of spaced side boards 11 having a cross-head 12 bridging the gap between them and secured thereto firmly in any suitable manner. Locally journaled in the side boards 11 rearwardly of cross-head 12, on trunnions 13, is a roll of wiping cloth 14. The web of the cloth is carried downwardly beneath cross-head 12 and its free end is attached to a rewinding roller 16, described in detail hereinafter. The roller 16 is also journaled for free rotation in said side boards and is located forwardly of the cross-head.

In use, the lane duster is advanced over the surface to be cleaned, in this instance a bowling lane 17, a handle 18 being provided for this purpose. The side boards 11 are spaced apart a distance to permit them to clear the gutters on the sides of the lane so that the web 15 extending beneath the cross-head is in surface contact with the lane surface to be dusted. Continued advance along the lane surface results in the contacting portion of the web picking up the dust particles and when said web portion has become soiled, the rewinding roller 16 is rotated in a manner and by means to be described presently so as to wind up a predetermined amount of the web on said roller and locate a clean portion beneath the cross-head.

The rewinding roller 16 is comprised of a pair of like halves 16a, each of which is substantially frusto-conical in shape and which are aligned axially with their smaller diameters disposed in opposition relation. The opposed ends are each provided with a non-circular, preferably square, axial recess or socket 19, each adapted to removably receive telescoped therein one end of a non-circular trunnion 21. The trunnion has a hexagonal enlargement 22 between its ends and which functions as a connecting spacer for the opposed roller halves 16a. A stud 23 is provided on the outermost end of each roller half 16a to afford a journal for mounting the assembled roller in side board bearings having direct communication with the ends of the side boards 11 through an entrance slot 24. Studs 23 may each have a head 25 on its outer end to prevent axial displacement of the roller.

The two roller halves 16a are mounted as a unit in the side boards and the web of the cloth is wrapped thereon in a clockwise direction, a ratchet assembly generally indicated at 26 between its ends and which functions as a connecting spacer for the opposed roller halves 16a. A stud 27 is mounted in a lever 28, forming part of assembly 26, that extends normally in an upwardly direction from roller 16. When it is desired to rotate the rewinding roller to take up a soiled portion of the wiper cloth, said lever 28 is rocked about the roller axis forwardly-downwardly, an operating link 29 being connected thereto and terminating at a point of ready manipulation by the operator. When the roller has been rotated clockwise a given distance, the link 29 is pulled to return lever 28 to its initial substantially upright position. At such time a sharpened edge 31 on said lever cuts the web of cloth just wound on said roller, as shown at 32, thus dividing the rewound roll of cloth into two sections, one on each roller half 16a. After all or substantially all of the soiled cloth has been wound upon the rewinding roller and slit, the roller is removed from the side boards and its two halves separated. The frusto-conical halves 16a are easily withdrawn from the roll of soiled cloth thereon and the cloth discarded.

In order to facilitate and simplify cutting of the cloth by lever 28, said cloth preferably is of a kind that slits or tears easily in a longitudinal direction. A cloth comprised of long-fibred cotton with the fibres running paral-
The length of the roll web, as illustrated in FIG. 5, is best suited for this purpose although other cloth having a center line weakened in any fashion, or otherwise fabricated to tear longitudinally, will function satisfactorily.

It is believed that the invention, its mode of construction and assembly, and many of its advantages should be readily understood from the foregoing without further description, and it should be manifest also that while a preferred embodiment of the invention has been shown and described for illustrative purposes, the structural details are nevertheless capable of wide variation within the purview of the invention as defined in the appended claims.

What we claim and desire to secure by Letters Patent of the United States is:

1. In a duster apparatus including a web of material adapted to be rolled upon a rewind roller, said rewind roller comprising a pair of like halves spaced apart and arranged end to end and upon which said web is wound, and a cutter mounted on between the roller halves, said cutter being rotatably movable independently of said rewind roller to slit the web as it is wound upon said roller.

2. In a duster apparatus of the character described comprising a roll of fabric adapted to have its web wound upon a rewind roller, said rewind roller comprising a pair of like halves spaced apart and arranged end to end, said halves being tapered inwardly toward each other, means extending between said halves for connecting said halves for rotation in unison, ratchet means including an arm mounted on said connecting means operable to rotate the roller when moved in one direction, and said arm having a knife edge operable to slit the web when the arm is moved in an opposite direction.

3. In apparatus including a rewind roller and a ratchet assembly operable to rotate said roller, said ratchet assembly including an oscillatable arm and a ratchet operable when the arm is moved in one direction to wind a web of material on said roller, and cutting means carried on said arm effective when the arm is moved in an opposite direction to slit the web wound on said roller.

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