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R. RUEMELIN
DUST ARRESTER BAG
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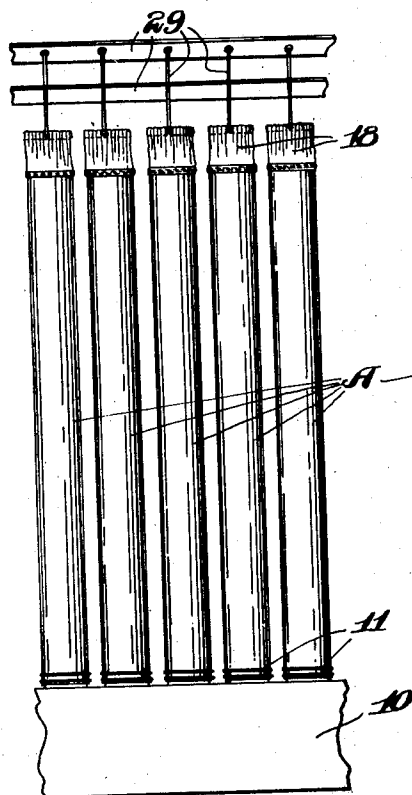


Fig. 1

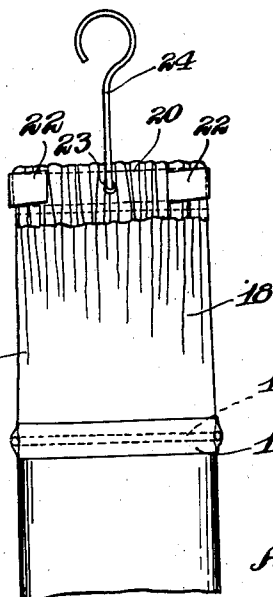


Fig. 2

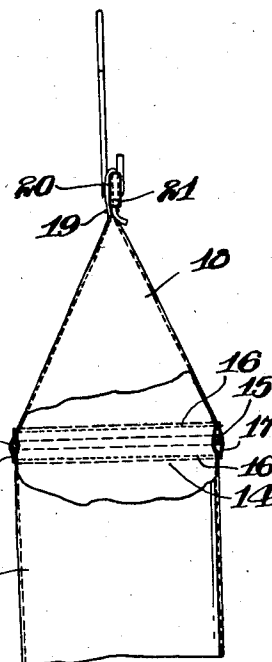


Fig. 3

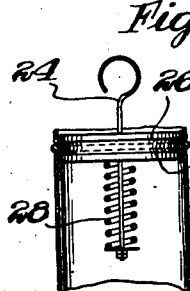


Fig. 6

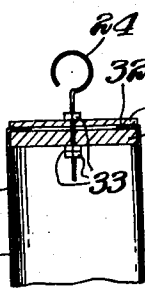


Fig. 7

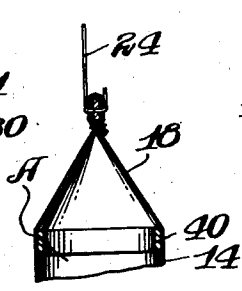


Fig. 8

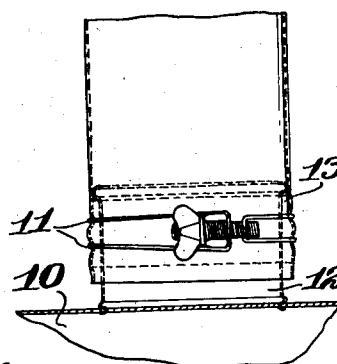


Fig. 9

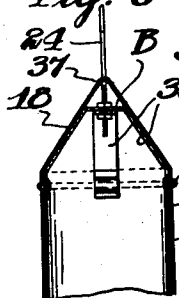


Fig. 4

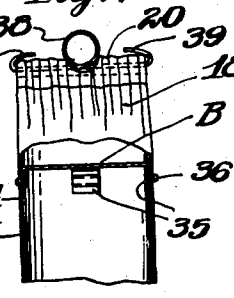
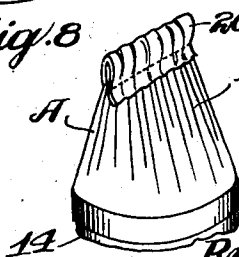


Fig. 5



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DUST ARRESTER BAG

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5 Claims. (Cl. 183—51)

This invention relates to dust arrester bags made of tubular textile material, each tube forming the dust arrester bag and I have developed a means of making these tubes so that they may be held in a manner to maintain them virtually wide open from end to end in a tubular formation.

Heretofore dust arrester bars of a tubular nature made of textile material have been employed in dust arresters, however, the supporting of one end of the same in the dust arrester has been of a different character and one which would tend to close or flatten the side walls against each other at the upper supporting end, which flattening condition would taper down to almost the very attached lower end which usually is held around a collar to hold these tubular textile bags to firmly clamp the same to the collar. My structure for supporting these dust arrester bags therefore performs an important means of holding the same. In practice usually a multiplicity of these dust arrester bags are extended vertically from the dust collecting box at the bottom of the dust collector and the upper end must be held by means which supports the dust arrester tubular bags extending virtually parallel to each other and held so as not to tear the body of the bags, but to hold them with their outer surface out full so that a greater dust arresting surface is provided within the tubes and so that any dust collected therein may fall back into the dust collecting box at the bottom and to which the dust arrester bags or tubes are connected.

A feature resides in providing a means of clamping the upper end of the dust arrester tubular bags by a ring-like collar means which holds the upper end of the tube expanded to the full diameter of the tubular bag and providing a securing means either by shaping the upper end of the dust arrester tubular bag itself beyond the expanding ring to provide a loop for supporting a reinforcing member which is engaged by a hook member to hold the upper end of the bag expanded and reinforced, or by placing a disc member to which a ring-like member clamps the upper end of the bag, and then engaging the disc by the hook which holds the upper end of the bag.

The details and features will be fully and more clearly defined.

In the drawing forming a part of this specification:

Figure 1 is a side view of a portion of a dust

arrester, showing a series of tubular textile bags held in operative position.

Figure 2 is an enlarged detail of one means of holding the upper end of the tubular textile bags.

Figure 3 is a side view of one of the tubular bags, showing the same connected at the bottom to the collar of the dust collecting box and the upper end held by my improved tube expanding and hook supporting means, while the middle portion is broken away.

Figure 4 illustrates another form of expanding and fastening the upper end of the bag illustrated in section.

Figure 5 illustrates still another form, part of which is shown in section.

Figure 6 illustrates a disc-like clamping member with a spring connected to the disc and hook for supporting the upper end of the tubular textile dust arrester bag.

Figure 7 illustrates still another means of holding the upper end of the bag expanded and connected to a hook.

Figure 8 illustrates a ring-like band inside the upper end of the dust arrester tube and the top end extended and formed into a loop through which the supporting hook engages.

Figure 9 is a perspective view of the structure illustrated in Figure 8, only a portion of the bag being shown.

My dust arrester bags A are formed of textile material or cloth, particularly woven for the use in dust arresters and of a seamless tubular nature. The bags A are adapted to be connected at the bottom to a dust collecting box 10 by means of the clamping rings 11, more clearly illustrated in Figure 3. A collar 12 projects upwardly from the box 10 so as to provide a firm tubular attaching means for the lower end 13 of the bag A. The collar is large enough to hold the lower end 13 of the bag expanded virtually to its full diameter.

The improvement is designed to hold the upper end 14 of the bag A expanded to virtually its full diameter. I accomplish this in a manner to hold the bag A securely and at the same time prevent injuring the body of the bag so that any holes will permit the leakage of dust. In Figures 2 and 3 the upper end 14 of the bag is constructed with an expanding ring or hoop 15 which is held between the stitching 16. The rings or hoops 15 may be held by the band 17 which is stitched by the stitches 16 on the outside of the bag, thereby confining the ring or hoop 15 in a manner to act as an expander to hold the upper end 14 of the

bag fully expanded to its normal diameter at the top of the same.

The extreme upper end of the bag A in this construction may be carried into a peak 18 and the end of the bag folded over and stitched at 19 to form the loop 20. This loop 20 is adapted to receive a flat strip supporting means 21, the ends 22 of which may be folded over to lock the strip supporting means 21 in position in the loop 20 of the bag, while a hole 23 is provided centrally in the strip in which a hook suspending means 24 engages so as to attach the upper end of the bag A in the dust arrester, as illustrated in Figure 1.

The upper end of the bag A may be expanded by the internal disc 25 as illustrated in Figure 6, which is provided with an annular groove 26. In this construction the upper end 14 of the bag is held around the disc 25 by an outer clamping ring 27 which forces the material of the upper edge of the bag into the groove 26 and clamps it tightly therein. The hook suspending means 24 is adapted to extend axially through the disc 25 and a coil spring 28 extending on the inside holds the inner end of the hook 24 by spring means so that when the hook 24 is hooked into place in the frame members 29 of the dust arrester, as illustrated in Figure 1, the upper end of the bag A is held under the tension of the spring 28.

It is also practical to secure the upper end of the bag A by the expanding inner disc 30 which co-operates with an outer disc 31 to clamp the intumed edge of the upper end of the bag A as illustrated in Figure 7, so that when the discs 30 and 31 are clamped together by the hook 24 and the nuts 33, the edge 32 is clamped tightly between the discs 30 and 31 with the upper end of the bag A fully expanded to its normal diameter.

A simple form of expander is illustrated in Figure 4 wherein a series of spring arms 35 are formed to provide a spider which extends inside of the peak end 18 of the bag A. Then by means of a clamping ring 36 which engages in the grooved ends of the arms 35, the upper end 14 of the bag is held in expanded position. This spider B is adapted to be held by the hook 24 while the upper or apex end 37 of the peak 18 is closed by restricting the same around the shank of the hook 24.

Figure 5 illustrates another form of the spider B with short spring arms 35 and a clamping ring 36. In this form the spider extends straight across the upper end 14 of the bag A. It will also be noted that in this form the upper peak end 18 of the bag A is formed with the loop 20 and by means of the wire supporting member 38 an eye for attaching the upper end of the bag A is formed, while the ends 39 of the wire suspending means 38 are bent over as illustrated in Figure 5 to hold the wire member 38 connected to the loop at the apex of the bag.

A simple means of expanding the upper end of the tubular dust arrester A is illustrated in Figures 8 and 9, wherein the peak end of the bag with the loop 20 is secured in the same manner as illustrated in Figures 2 and 3. Then within the upper end 14 of the bag I slip an expanding ring 40 which is pushed up just as far as possible toward the peak end 18 and which is held by friction and the expanding nature of the ring 40 to hold the upper end 14 of the bag A fully expanded.

My dust arrester bag A in its present form and means for securing the same to the dust ar-

rester is of primary importance because the bags A are held fully expanded virtually throughout their entire length, thereby giving greater efficiency to a dust arrester of this construction and permitting the upper ends of the dust arrester tubes to be held so that the dust collected within the same during operating of the dust collector may more easily be shaken down into the dust collecting box 10 by the reciprocating motion of the frame 29 which shakes the upper ends of the dust arrester tubes A. It will be quite apparent that the dust may more easily fall from the fully expanded wall of the tube A which extends straight up and down in operative position, as illustrated in Figure 1.

I have found the capacity of a dust arrester constructed in this manner to be much more efficient than where a large portion of the tube A must be flattened to hold the upper end of the bag A. Heretofore these bags have been held in this manner extending up in a loop-like formation and having the ends secured to two of the collars, such as 12, whereas here, each bag is separate and is fully expanded throughout its length and extends straight up from the bottom to the top.

In accordance with the patent statutes I have endeavored to represent the best embodiment of my invention and while the illustrations show the forms set forth, variations should be considered as within the scope of the following claims.

I claim:

1. A dust arrester bag including a dust receptacle, means for securing said bag to said dust receptacle, a hoop for holding said bag expanded to its full diameter adjacent the top of the bag, means for clamping the bag end together, and a hook on said clamping means adapted to be laterally reciprocated.
2. A dust arrester bag including, a tubular body, a reinforcing ring within said body adjacent one end of said tube, a closing fold in said tube adjacent said one end, a loop formed by the folded end of said bag, and supporting means extending through said loop, and bends in said supporting means at either end of said loop to restrict the length of the loop to the diameter of the tube.
3. A dust arrester bag including, a tubular body, means for holding said body extended to its full diameter adjacent one end of said body, a flattened end adjacent said holding means, a loop in said flattened end, a supporting means extending through said loop, and means on said supporting means for restricting the length of said loop to within the diameter of the tubular body.
4. A dust arrester bag including, a single flexible tubular body, a hoop adjacent one end for holding said body expanded to its full diameter, a sealed end on said body including a transverse loop formed by the end of the bag, supporting means extending through said transverse loop, and suspending means extending transversely through said loop and supporting means.
5. A dust arrester bag including, a tubular body, a reinforcing ring in said body adjacent one end thereof, a flattened end on said bag adjacent said ring, a loop formed in said one end, supporting means extending through said loop, and suspending means for said supporting means on said supporting means preventing movement of said loop along said supporting means.