United States Patent

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[54] **ROTARY BRUSH SECTION**
5 Claims, 7 Drawing Figs.

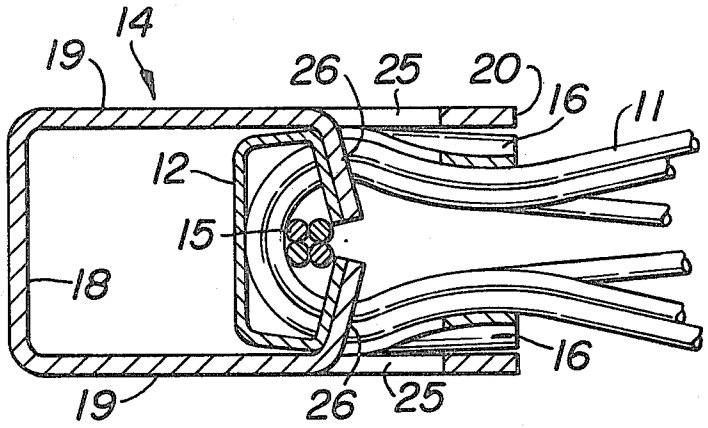
[52] **U.S. Cl.** **15/181**
[51] **Int. Cl.** **A46b 13/02**
[50] **Field of Search** 15/179–183, 198, 200; 300/21

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ABSTRACT: A rotary brush section of the type mounted in suitable numbers on a central core to be driven thereby for heavy duty sweeping, such as street or industrial sweeping purposes. It comprises a split ring which receives and retains heavy radially extending bristles, and a connection for the split ring which not only serves as a connection but as a driving lug to be engaged by the core.



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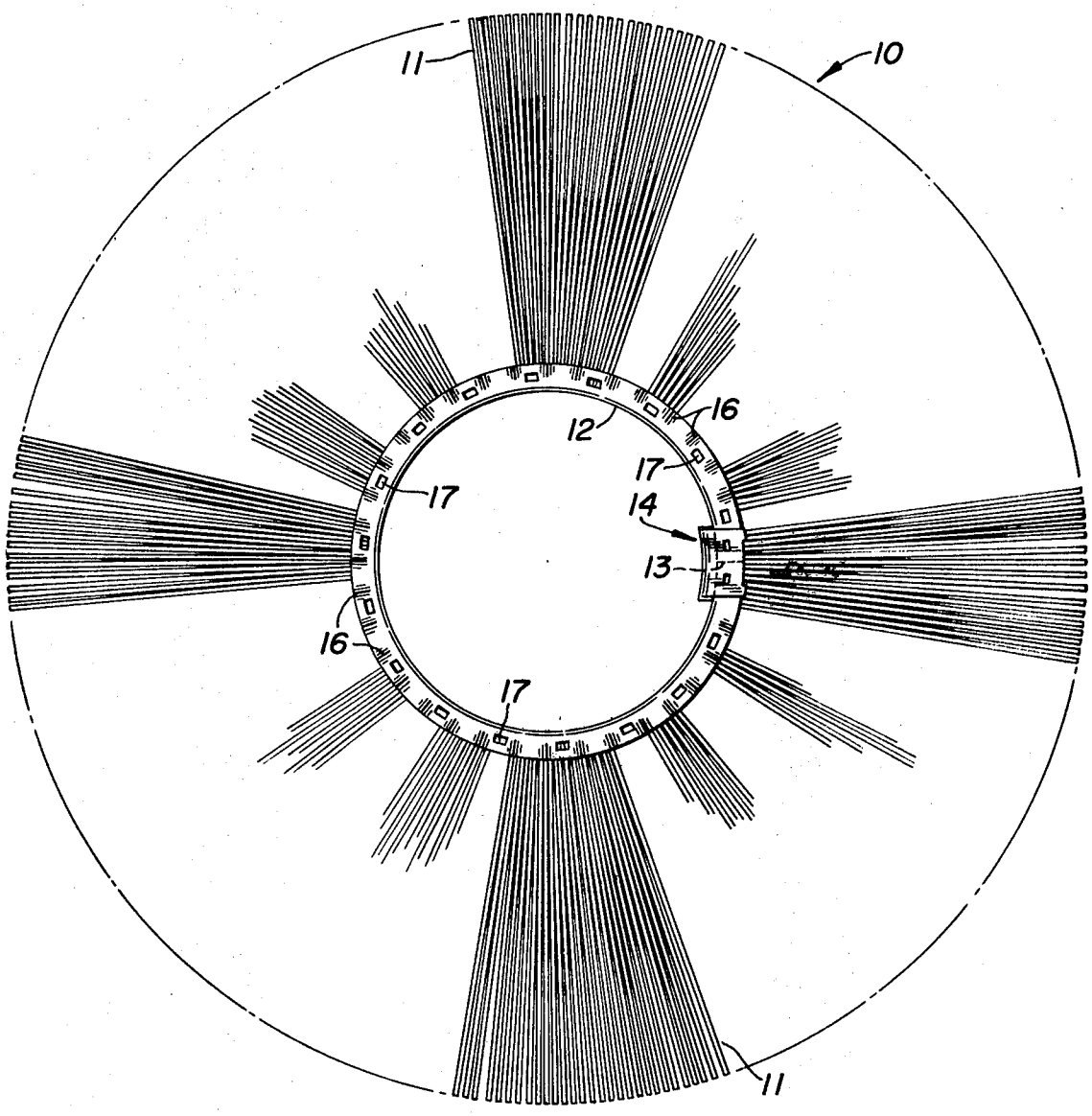


Fig 1

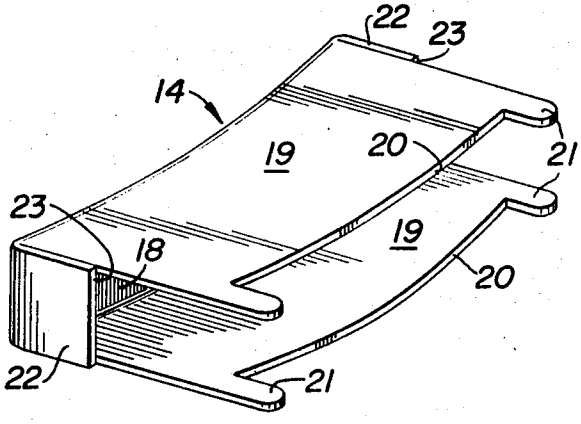


Fig 2

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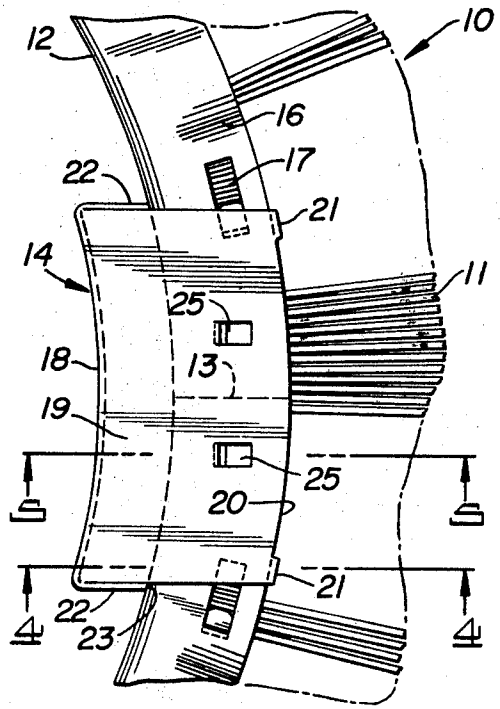


Fig 2

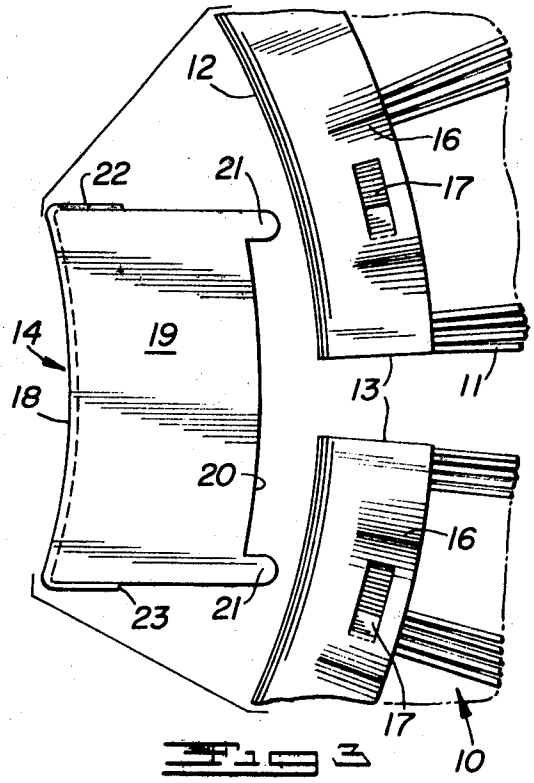


Fig 3

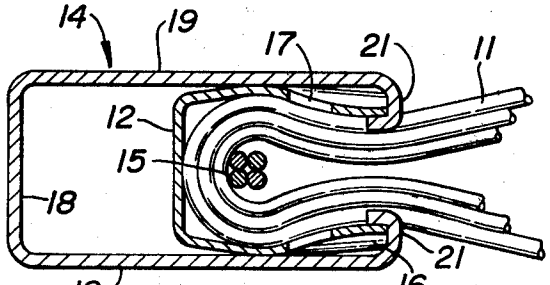


Fig 4

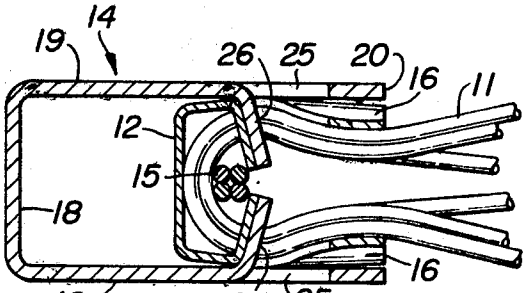


Fig 5

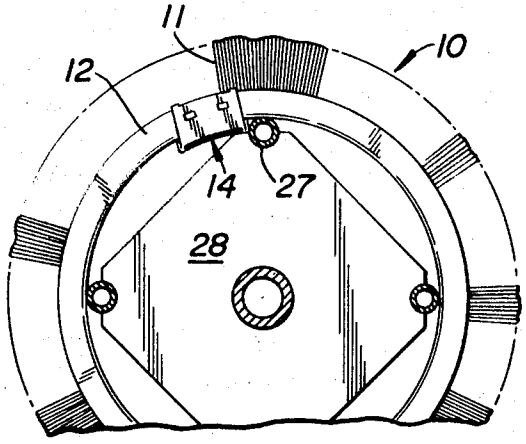


Fig 6

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ROTARY BRUSH SECTION

In sweeper brushes of this general type, the split ring is usually connected by some complicated and expensive connecting device and a separate driving pin or pins is usually provided on the ring in inwardly extending radial relationship thereto to be drivingly engaged by the core. Two separate devices are necessary, that is, the connecting device and the driving pin, which adds to the cost and, furthermore, the pin is usually not very strong. The present invention provides a simple combination connecting and driving lug, which is very effective and rugged but which is of relatively low cost.

In the accompanying drawings, I have illustrated a brush including a split ring with the combination connecting and driving lug device of my invention.

In these drawings:

FIG. 1 is a side elevational view of the brush section.

FIG. 2 is a detail in enlarged side elevation of the combination connecting and driving lug device in final connecting position relative to the split ring.

FIG. 3 is a similar view but showing the ring before connection by the associated connecting and driving lug device.

FIG. 4 is a transverse sectional view taken along line 4—4 of FIG. 2.

FIG. 5 is a transverse sectional view taken along line 5—5 of FIG. 2.

FIG. 6 is a schematic sectional view showing a sweeper brush core with the brush section mounted thereon.

FIG. 7 is an enlarged perspective view of the connecting and lug device before it is applied to the split ring.

With reference to the drawings, in FIG. 1 a complete rotary sweeper brush section is shown and is indicated generally at 10. It comprises the radially extending bristles 11 mounted on a central metal ring 12 which is split at 13 where a connecting and driving lug member 14 is provided, according to my invention, for joining the adjacent ends of the split ring and for providing a driving lug extending inwardly of the ring.

The ring 12 is of metal and is of U or channel cross section opening outwardly. The bristles 11 are of a common type and are arranged in U form and held or anchored in the ring by a wire or cable 15 passing within the turns or bends of the bristles, as is customary with the free ends of the bristles outermost. The sidewalls or flanges of the ring 12 are crimped at angularly spaced intervals, as indicated at 16, and are lanced at angularly spaced intervals, as indicated at 17, to provide lugs extending inwardly over the wire to retain the wire and bristles in position. The channel of the ring may be filled with plastic which will set and further aid in retaining the bristles therein. This structure is a common type of brush structure used in the art.

The member 14 is of the form illustrated in FIG. 7 before being applied over the split or joint 13 of the ring to connect it. It is also of channel or U cross section, opening outwardly, having an inner curved wall 18 and the parallel outwardly extending flanges 19 which have outer curved edges 20. Each of the edges 20 has the outwardly extending tongues 21 at its respective ends. The wall 18 has its ends 22 extended and bent outwardly over the adjacent end edges of the flanges 19 and terminating at the outer stop edges 23. The curvatures of the inner wall 18 and outer edges 20 are concentric with that of the ring 12.

To connect the ends of the split ring 12, the member 14 is slipped outwardly, from the position indicated in FIG. 3, over the ring ends, after they have been brought into contact until the stop edges 23 engage the inner wall of the channel of the ring. This will be in the position indicated in FIG. 2 and at that time, the tongues 21 will then be bent around the outer edges of the flanges or sides of the channel of the ring and hooked around the extremities thereof as shown in FIG. 4. Then the sides or flanges 19 of the channel member 14 will be lanced as indicated at 25 to provide lugs 26, as shown in FIG. 5, extending from the member 14 into the ring 12 and over the wire 15, to interlock the overlapping flanges of the two members together and further hold the wire in place. Thus, the member 14 will not only connect the two ends of the ring 12 together in alignment but will project radially inwardly to provide a driving lug, as indicated in FIG. 6. This lug will be engaged by a portion 27 of a central core frame 28 on which a plurality of the brush sections 10 may be mounted in side-by-side axially spaced relationship. One end wall 22 of the member 14 will be engaged by the member 27.

It will be apparent from the above that this invention provides for a sweeper brush in which the split ends of the bristle-supporting ring are connected together by an inexpensive rigid member which also provides a rugged driving lug.

I claim:

1. A brush section comprising a split ring with adjacent ends and being of channel cross section opening outwardly and having bristles anchored therein and extending radially outwardly therefrom, said ring having an inner wall and outwardly extending sidewall flanges, a channel member connecting the ring ends together, said channel member being of outwardly opening channel cross section and slipped outwardly over the adjacent ends of the ring into straddling relationship thereto, said channel member having an inner wall and outwardly extending spaced sidewall flanges of substantial depth which overlap the adjacent sidewall flanges of the ring, shoulders on said channel member intermediate the depth of said sidewall flanges to engage the inner wall of said ring and to space the inner wall of said channel member substantially radially inwardly of said inner wall of said ring resulting in a driving lug portion extending radially inwardly from the ring a substantial distance, and means for attaching the sidewall flanges of the channel connecting member to the underlying sidewall flanges of the ring.

2. Structure according to claim 1 in which said fastening means comprising interlocking portions between said overlapping flanges.

3. Structure according to claim 2 in which the connecting member has its outer wall turned outwardly over the ends of the flanges to provide outwardly disposed stop edges which serve as said shoulders for engaging the inner wall of the channel ring.

4. Structure according to claim 3 in which the outer edges of the flanges of said connecting member are provided with tongues bent around the adjacent outer edges of said ring flanges.

5. Structure according to claim 3 in which the inner wall of said connecting member and the outer edges of said flanges of the connecting member are curved concentrically with the curvature of the ring.