Feb. 27, 1968 S. TAMNY ETAL 3,370,312

DISPOSABLE STREET SWEEPER GUTTER BROOM

Filed April 11, 1966 2 Sheets-Sheet 1

FIG. 1.

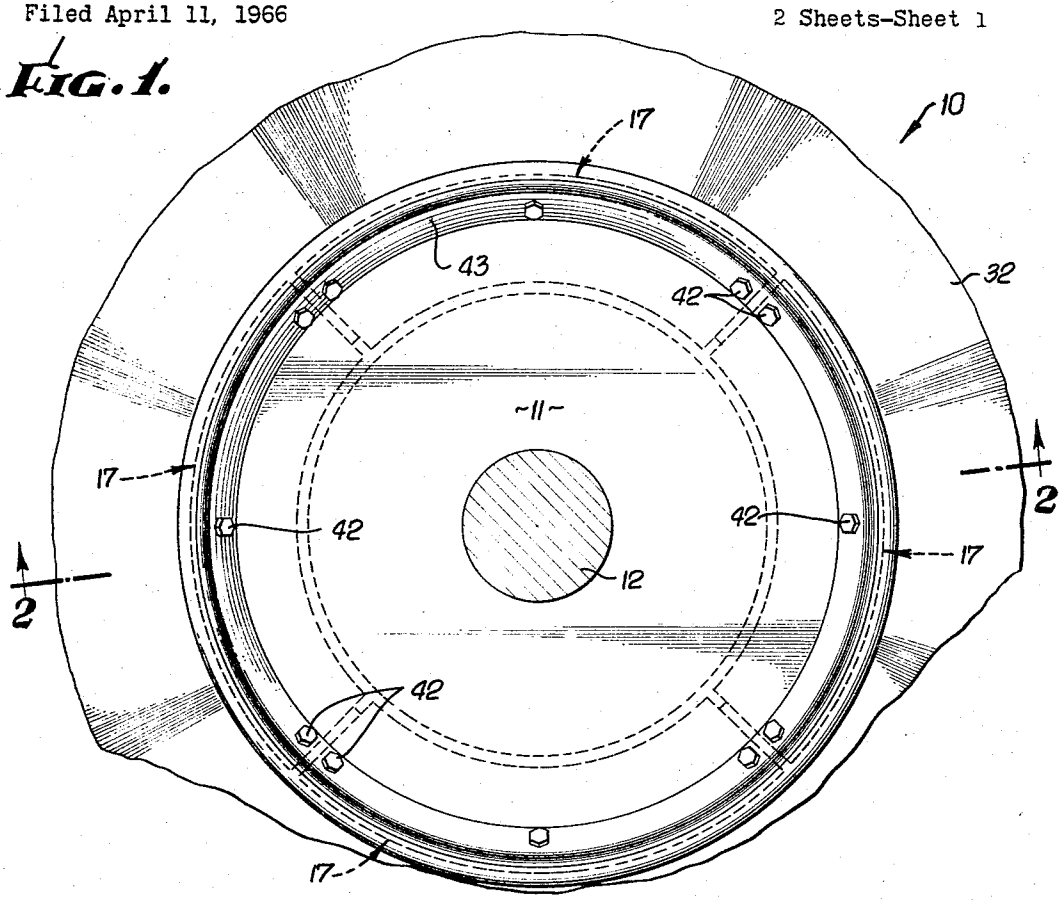
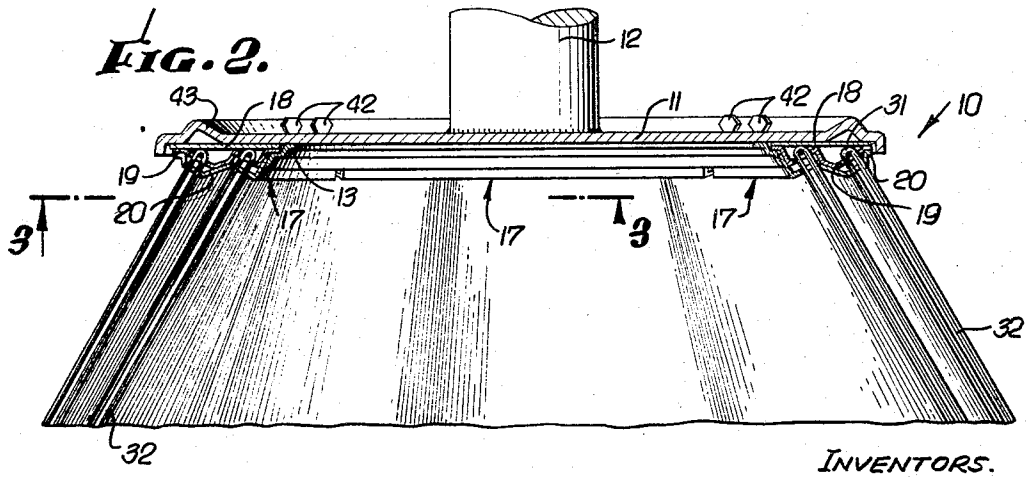


FIG. 2.



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FIG. 3.

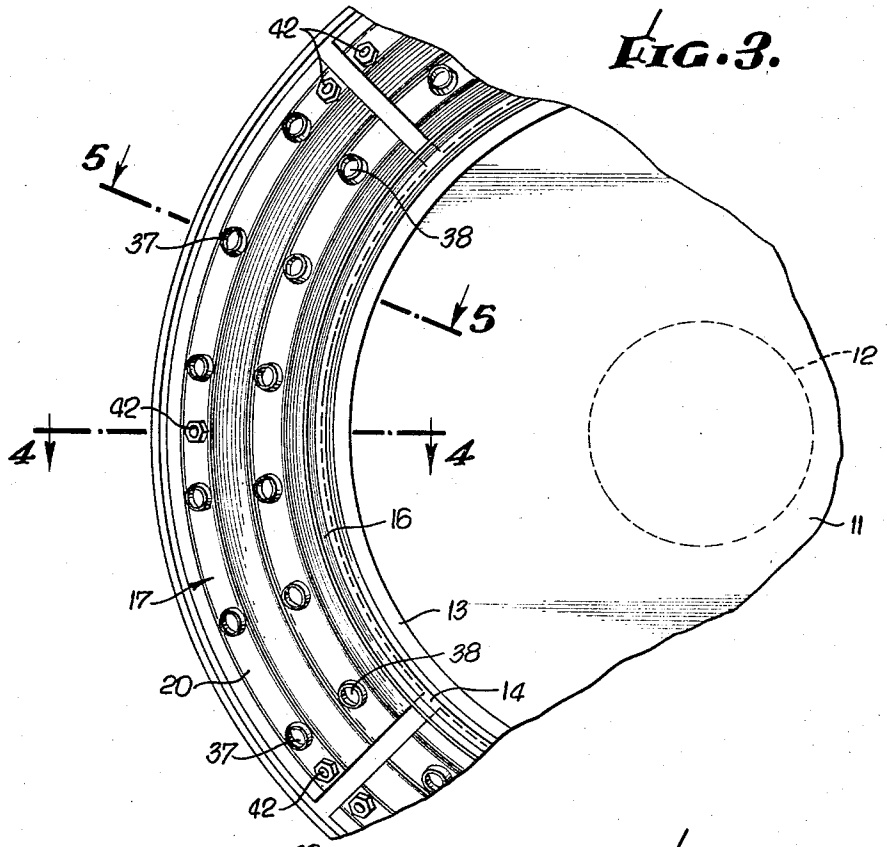


FIG. 4.

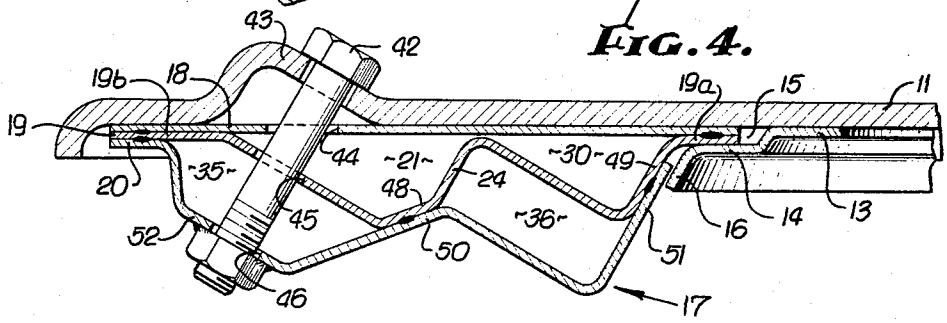
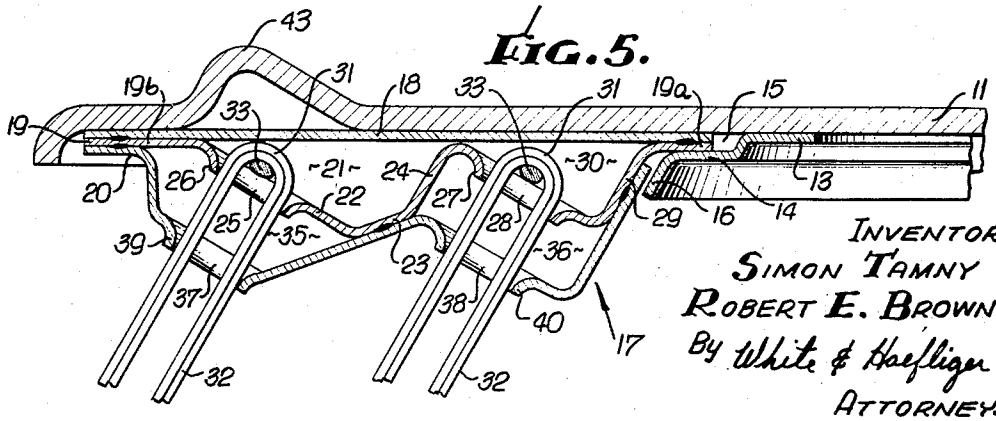


FIG. 5.



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DISPOSABLE STREET SWEEPER GUTTER BROOM

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6 Claims. (Cl. 15—180)

ABSTRACT OF THE DISCLOSURE

The invention contemplates a disposable street sweeper gutter broom construction employing the general combination of an upper bristle retainer plate, an engaging first bristle supporting plate in the form of a sheet metal stamping having outwardly directed apertures to receive bristles held between the stamping and retainer plate, and a second and lower plate secured to the first plate in spaced relation and having apertures which pass and laterally support the bristles.

This invention relates to street sweeper rotary gutter brooms and to novel features which render practicably desirable and economical disposability of preformed brush units when their bristles have become worn.

Such brooms are of circular configuration and operate in essentially vertical though variable axial position. As in conventional gutter broom assemblies, the replaceable unit with which the invention is concerned is carried by and below a head or support which is power driven from the sweeper machine.

The invention has for its general object to provide an economical and simply replaceable prefabricated brush unit which contains and retains the bristles in demountable relation to the driving head.

Particularly contemplated is a disposable unit capable of fabrication by low cost parts and assemblage requirements, including the use of stampings to retain and support the bristles at downward and outward inclination, and an associated closure that assures proper maintenance of the bristles throughout their usefulness.

In its preferred form the disposable unit includes at least one annular plate having deflected and apertured configurations which direct and support the bristles extending from locked-in retention between this plate and an overlying keeper plate. Associated with the apertured plate may be a similar lower plate also apertured to pass and laterally support the bristles.

Without further preliminary detail, the invention will be described in reference to an illustrative embodiment shown by the accompanying drawing, in which:

FIG. 1 is a partly broken away plan view of a mounted gutter broom;

FIG. 2 is a cross section taken on line 2—2 of FIG. 1;

FIG. 3 is a fragmentary enlarged showing of the underside of the bristle mounting plates, with showing of the bristles omitted and viewed from line 3—3 of FIG. 2; and

FIGS. 4 and 5 are enlarged fragmentary sections respectively on lines 4—4 and 5—5 of FIG. 3.

The demountable and disposable gutter broom structure generally indicated at **10** is shown to be carried by and to depend from a suitable head typified by the circular plate **11** connected to or otherwise associated with a generally vertical drive shaft **12**. Welded to the underside of the head **11** is a brush retaining means which may have the form of a concentric ring **13** or circular series of ring segments, deflected at **14** to form a keeper space **15**,

the metal being further deflected to form a downwardly and outwardly angled flange **16**.

The brush proper comprises a plurality, typically four, of arcuate segment assemblies **17** each comprising a correspondingly arcuate plate **18** and integrally joined deflected plates **19** and **20**. Between its inner and outer flat flanges **19***a* and **19***b*, plate **19** is locally deflected at circularly uniform spacings, to form radially outer recesses **21** defined by downwardly and inwardly angular extents **22** and reverse sloping extents **23** and **24**. The portion **22** is centrally apertured at **25** by outwardly necked deflection of the metal at **26**, thus to present a downwardly and outwardly axially directed flange opening at an angle of about 30 degrees from the vertical. Continuing inwardly from portion **24**, the metal is deflected at **27** to neck or flange about opening **28**, the axial angularity of which corresponds to that of opening **25**. Inwardly from the opening the metal is deflected at **29** to the flange **19***a* below space **30**.

The openings **25** and **28** receive the inner doubled ends **31** of the bristle tufts **32** which are angularly oriented in keeping with the openings and are held in place by wires or strips **33** terminally secured to the plate **19**. The sizes of the openings and bristle tufts are so related that the necked deflections **26** and **27** of the metal give lateral support to the bristles near their bases.

It is desirable that the bristle tufts be given additional lateral support below their mountings to plate **19**, for which purposes welded-on plate **20** is provided and given the illustrated configurations definitive of spaces at **35** and **36** and the bristle passing openings **37** and **38** which are axially alined with openings **25** and **28** and are defined by the annularly necked metal at **39** and **40** to laterally support the bristles in straight alinement with the deflected metal at **26** and **27**.

The unitized segments **17** thus consisting of the plates **18**, **19**, **20** and the mounted bristle tufts **32** are inwardly retained to the head **11** by reception of the inner edge of plate **18** and flange **19***a* within recess **15** above the keeper **14**. Outwardly the assemblage is held to the head as by bolts **42** inserted through the angular head upset **43** and through opening **44**, **45** and **46** respectively within plates **18**, **19** and **20**. Plate **19** is locally deflected at **48** and **49** to bear flatly against extents **50** and **51** of plate **20**, and the latter is deflected at **52** to parallel **47**, thus presenting the openings **45** and **46** in an angular alinement that may correspond to the bristle tuft angularity.

In reference to FIG. 5, the upper turned ends **31** of the bristles are engageable against the underside of plate **18** to block upward displacement of the tufts, and as explained, the wires **33** retain the bristles against downward displacement. Thus plate **18** serves the dual functions of a bristle keeper and, with the underlying flange **19***a* as an inner accommodation within space **15** for the integrated welded assembly.

Plates **18**, **19** and **20**, as described, may be formed economically as sheet metal stampings, which together with the simplicity of the bristle accommodation, justifies disposal of the segments **17** when the bristles have become worn, and substitution by similar replacement segments.

We claim:

1. A gutter broom comprising a keeper plate to be generally horizontally disposed in the use position of the broom, an arcuate metallic bristle support secured to the underside of said plate and deflected therefrom to provide bristle receiving spaces and to form an arcuate series of apertures directed radially outwardly of the support, bristles having doubled ends within said spaces and projecting radially outwardly through said apertures, a wire extending within and through said doubled ends of the bristles so that both the wire and keeper plate retain the

bristles within said spaces, and a second arcuate support attached to the first mentioned support and having outwardly directed bristle passing apertures alined with the first mentioned apertures and within which the bristles are laterally supported.

2. A gutter broom according to claim 1, in which said supports are metal stampings.

3. A gutter broom according to claim 2, in which the stampings have outwardly deflected necks about their bristle passing apertures.

4. A gutter broom according to claim 2, in which said supports are locally deflected to form spaces above their apertures and to form generally parallel outwardly inclined portions containing the apertures.

5. A gutter broom according to claim 1, including also a mounting plate, and means securing said keeper plate and supports to the mounting plate.

6. A gutter broom according to claim 5, in which said securing means comprise bolts passing through openings in the mounting plate, keeper plate and supports.

References Cited

UNITED STATES PATENTS

1,557,166	10/1925	Horn	15—180 X
1,892,926	1/1933	Bilde	15—180
2,853,729	9/1958	Link	15—180
3,074,094	8/1964	Lechene	15—180
3,142,854	8/1964	Nielsen	15—180
3,163,031	12/1964	Kestell.	
3,228,053	1/1966	Horton et al.	15—183

FOREIGN PATENTS

861,958	3/1961	Great Britain.

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