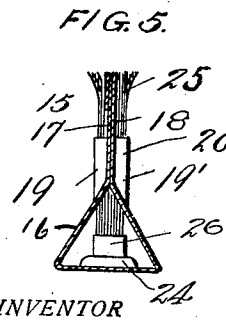
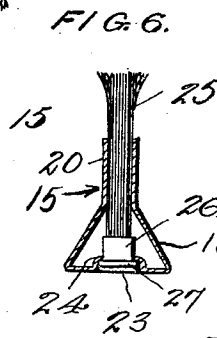
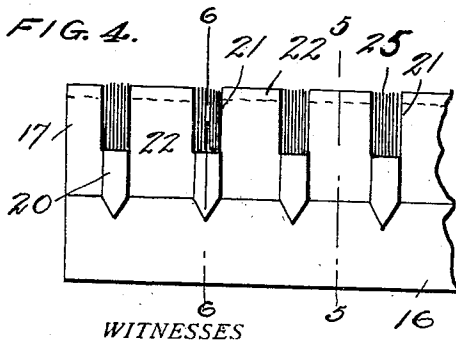
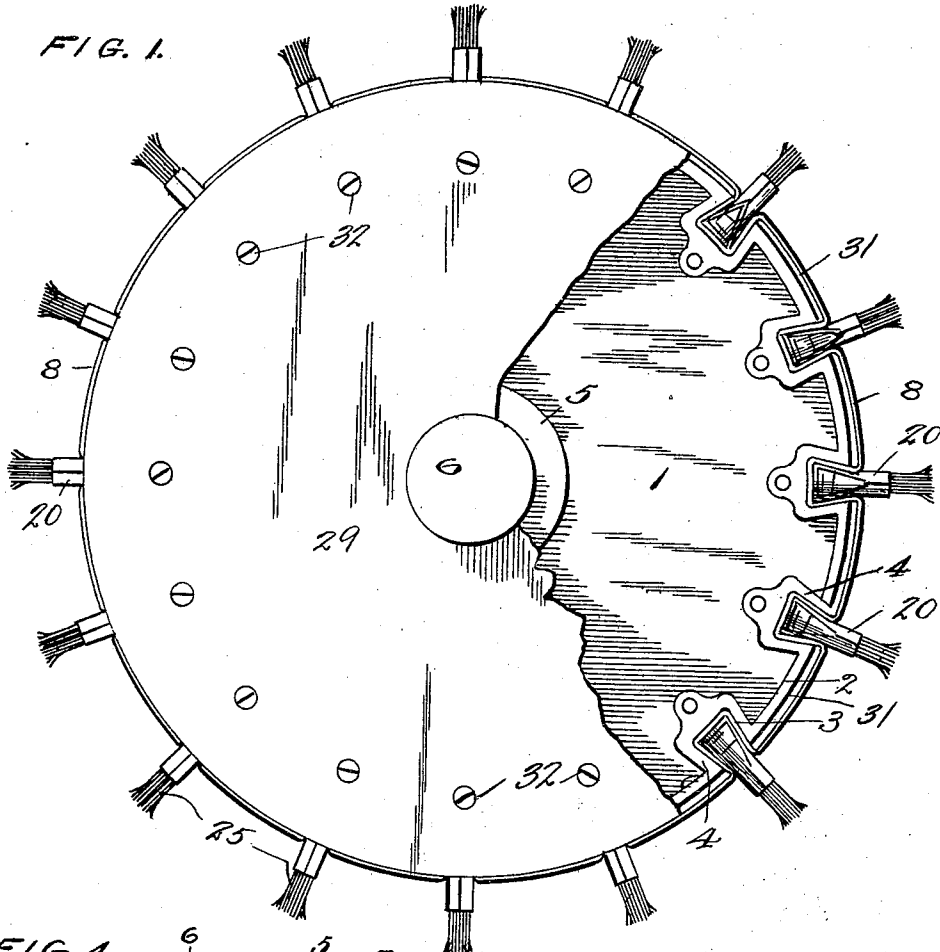


A. A. VARDELL.  
METALLIC BRUSH CYLINDER.  
APPLICATION FILED AUG. 30, 1909.

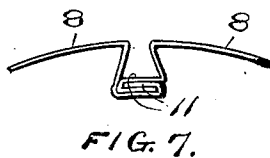
968,820.

Patented Aug. 30, 1910.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

FIG. 2.

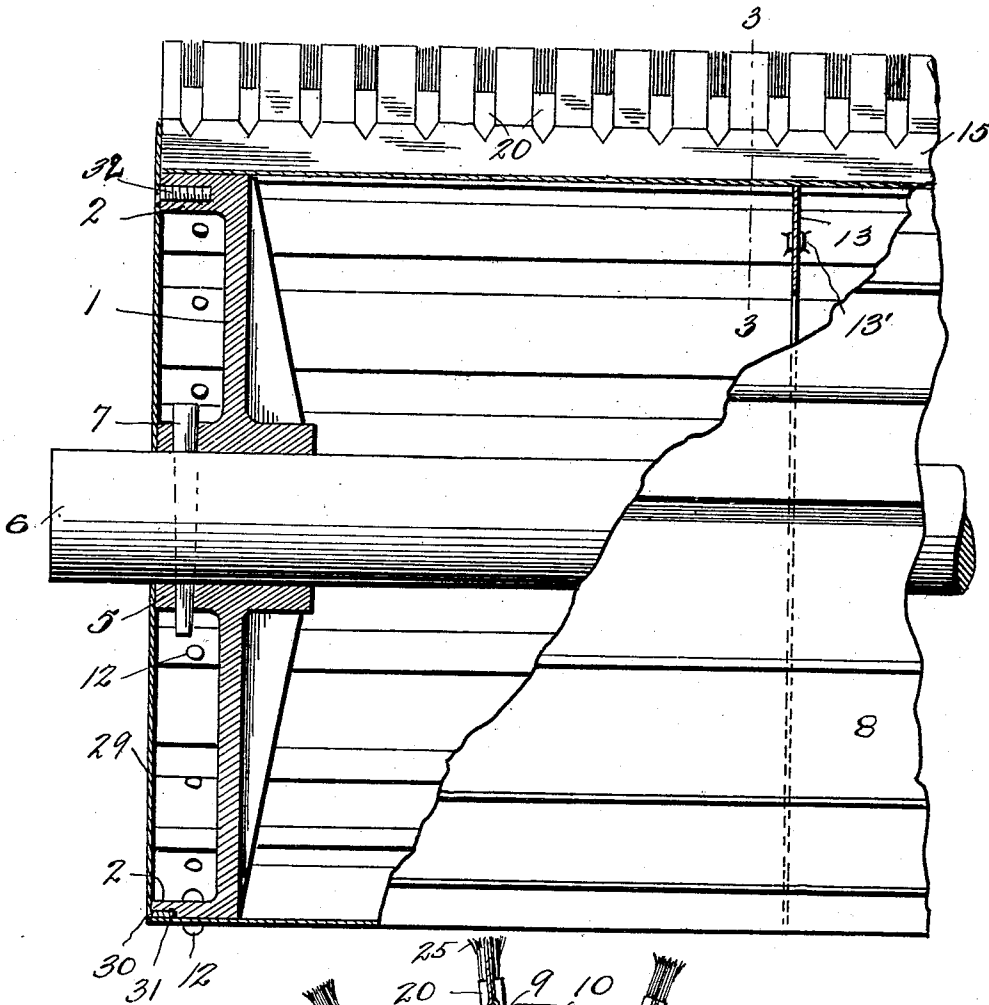
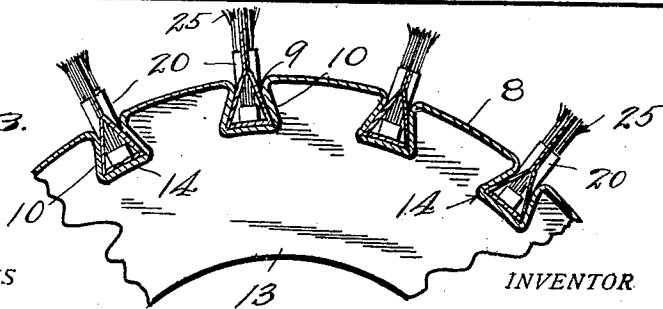


FIG. 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ARTHUR A. VARDELL, OF DALLAS, TEXAS.

METALLIC BRUSH-CYLINDER.

968,820.

Specification of Letters Patent. Patented Aug. 30, 1910.

Application filed August 30, 1909. Serial No. 515,218.

*To all whom it may concern:*

Be it known that I, ARTHUR A. VARDELL, residing at Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Metallic Brush-Cylinders, of which the following is a specification.

My invention relates to rotary brushes, and more particularly to rotary gin brushes.

10 An object of my invention is to provide a gin brush comprising a cylinder having means associated therewith for holding brush-carrying members, said means being arranged within the cylinder, thus leaving  
15 the periphery of the cylinder free from any projections.

A further object of my invention is to provide a brush of the character described, comprising a cylinder which will be cheap  
20 to manufacture, light in construction, and highly durable.

My invention consists generally of a cylinder provided with internally arranged chambers, formed by bending the periphery  
25 of the cylinder inwardly, and having brush-carrying members arranged within said chambers.

In the accompanying drawings, forming a part of this specification, and in which like numerals are used to designate like parts throughout the same, Figure 1 is an end view of my brush, a portion thereof broken away. Fig. 2 is a fragmentary longitudinal vertical sectional view of my brush. Fig. 3  
35 is a fragmentary cross-sectional view taken on the line 3—3 of Fig. 2. Fig. 4 is a fragmentary side view of one of the brush-carrying members. Fig. 5 is a cross-sectional view taken on the line 5—5 of Fig. 4. Fig.  
40 6 is a cross-sectional view taken on the line 6—6 of Fig. 4. Fig. 7 is a detailed view showing the manner in which the sections of material forming the periphery of the cylinder of my brush are joined together.

45 The cylinder of the gin brush comprises like spaced circular end pieces and a sheet metal shell, connecting and surrounding said end pieces. The end pieces are similar as above stated and I will therefore describe  
50 only one of them. Each of the end pieces 1 is circular and is provided upon its periphery with an outwardly extending flange 2. The flange 2 extends around cavities 3 arranged at spaced intervals upon the pe-  
55 riphery of said circular end pieces, and said cavities 3 are trapezoidal in cross-section.

Each of the cavities 3 has sloping sides 4, so that the cavity is larger at the inner portion than at the outer portion. Each of the circular end pieces 1 is provided centrally  
60 thereof with a hub 5, which is rigidly mounted upon a shaft 6, said hub 5 being rigidly connected to the shaft 6 by means of a pin 7, which extends through said hub 5 and said shaft 6.

65 The periphery of the cylinder is formed of sheet metal, and said periphery may be formed of two or more sections of sheet metal of similar dimensions, but I have found that the best results are obtained by  
70 employing two semi-circular sections of sheet metal, for the joints forming the union of the two sections will be diametrically arranged upon the end pieces 1. Each of the semi-circular sections of sheet metal 8 has  
75 portions of its material bent inwardly at spaced intervals to form longitudinally arranged internally extending chambers 9, which are substantially trapezoidal in cross section. Each of the longitudinally  
80 arranged chambers 9 has sloping sides 10 which are arranged at the same angle as the sides 4 of each of the cavities 3, as clearly shown in Fig. 1. It is to be understood that the internally arranged chambers 9 are ar-  
85 ranged at corresponding spaced intervals to the cavities 3. Each of the semi-circular sections of sheet metal 8 above referred to, is provided with longitudinal edges 11 which are bent or hooked as illustrated in Fig. 7, and by having the longitudinal edges of each of the sections of sheet metal bent as illustrated in Fig. 7, said sections 8 may be se-  
90 cured together without the use of solder or rivets. After the two semi-circular sections of sheet metal are thus secured together, said sections 8 are arranged upon the end pieces 1 and constitute the periphery of the cylinder. It is to be understood that the walls of the longitudinally arranged chambers 9 will  
100 fit within the cavities 3. The periphery formed of the sheet metal sections 8 is then bolted or otherwise secured to each of the circular end pieces 1 as at 12. If the cylinder is sufficiently long to make it desirable,  
105 I may employ a desired number of ring-shaped reinforcing strips 13 which are arranged at spaced intervals internally of the cylinder, and provided with cavities 14 which are trapezoidal in cross section. The  
110 cavities 14 are adapted for the reception of the walls of the internally arranged cham-

bers 9. The principal object of the reinforcing ring-shaped strips 13 is to prevent the periphery of the cylinder from being twisted or distorted by centrifugal force. Each of the reinforcing ring-shaped strips 13 is held in place by means of pairs of tongues 13', the tongues forming each pair being arranged upon opposite sides of the ring-shaped strip 13. It is to be understood that there are to be any desired number of pair of tongues 13'. The tongues 13' are stamped out of the inner walls of the chambers 9. When a cylinder is used which is relatively short, I may dispense with the strips 13, for the circular end pieces 1 will afford sufficient strength to the cylinder.

In most of the brushes for cotton gins, the sticks or strips to which the bristles are secured, form a part of the periphery of the cylinder of the brush, and said sticks or strips are firmly secured to the heads of the cylinder by means of glue, screws or like means. If the strips to which the bristles are secured are made of iron, the bristles are permanently secured upon the iron strips, and if some of the bristles should become damaged, the entire strip must be discarded. Some of the strips are made of wood and the bristles are sewed in with twine and glued in a groove formed upon the strip, and said bristles are therefore permanently secured to said strip. This last form of strip and the manner of securing the bristles thereto has proven unsatisfactory. From the foregoing, it is obvious that the removal of the strips to which the bristles are attached, is accomplished with damage to the strip, cylinder and cylinder-heads. To overcome the above enumerated difficulties, I provide a device formed of sheet metal, which is especially adapted to cooperate with the cylinder above described, and which may be readily removed from the cylinder without damage to said cylinder or said device. This device is so constructed that the bristles are arranged upon said device in separate bunches and each bunch is independently removable from said device. The detailed description of this device will be given hereinafter.

The device for carrying the bristles above referred to, is designated as a whole by the numeral 15, and comprises a long hollow body portion 16 formed of a section of bent sheet-metal. The body portion 16 is substantially triangular in cross section, and the sloping sides of the same extend upwardly to form vertical strips 17 and 18 which are in contact with each other. The strip 18 extends above the strip 17 and is bent down over the same, whereby the strips 17 and 18 are locked together. The strips 17 and 18 are provided at corresponding spaced intervals with portions 19 and 19' respectively, which are semi-circular in cross section. The corresponding portions 19 and

19' cooperate to form tubular sleeves 20, for the reception of bunches of bristles to be hereinafter referred to. Above the tubular sleeves 20, the strips 17 and 18 are provided with cut out portions 21, thus forming spaced intervals between portions 22 of the said strips 17 and 18. The body portion 16 is provided upon its bottom wall at spaced intervals and in alinement with the tubular sleeves 20, with circular openings 23, around the edge of each of which is formed an upwardly and inwardly extending flange 24. Each of the bunches of bristles 25 has one end thereof mounted within a thimble 26, and said bunch of bristles is cemented or otherwise secured within the thimble. It is to be understood that I do not restrict myself solely to the use of bristles, for I may employ such suitable material as felt or cloth as a substitute for the bristles. Each of the bunches of bristles 25 is introduced into one of the tubular sleeves 20, by inserting the free end of the bunch 25 through the opening 23, and drawing said bunch 25 out through sleeve 20 until a flange base 27 formed upon the thimble 26 fits within the cavity formed by the flange 24. By this construction the bunches of bristles 25 are suitably supported intermediate their ends by the tubular sleeves 20 and said bunches 25 may be readily removed when they become damaged. Owing to the shape of each of the longitudinally arranged chambers 9 and the shape of the body portion 16 of the device for carrying the bristles, it is evident that said body portion 16 is adapted to fit within the chamber 9. The body portion 16 may be disposed within the chamber 9, by inserting one end of said body portion 16 within said chamber 9 and then moving said body portion 16 longitudinally within said chamber. When a body portion 16 carrying the bunches of bristles 25, has been disposed within each of the chambers 9, a circular end plate 29 provided with an inwardly extending circumferential flange 30, adapted to fit within a corresponding recess 31, in each of the end pieces 1, is then fastened upon the outer side of each of said end pieces 1. The end plates 29 are secured to the end pieces 1 by means of screws 32 which are tapped into the flanges 2. The end plates 29 prevent the longitudinal displacement of the devices for carrying the bunches of bristles 25. It is obvious that the bottom wall of the chambers 9 will prevent the thimbles 26 from being displaced.

It is well known that a gin brush, besides serving the function of removing the lint from the gin saws must serve as a fan to convey said lint when removed from the vicinity of the saws, through the lint-chute into the condenser. For the second function of removing the lint from the vicinity of the saws, my brush is especially adapted, since

the portions 22 extend outwardly even with the ends of the bunches of bristles 25, and thus serve as means for generating currents of air.

5 I wish to state that I have obtained the best results by making the periphery and the devices for carrying the bunches of bristles out of sheet metal, owing to the strength and lightness of the same, however, I do not  
10 desire to restrict myself to the employment of sheet metal alone, for any other suitable material may be employed.

Having fully described my invention, I claim:—

15 1. A device of the character described, comprising end pieces provided upon their peripheries with openings substantially trapezoidal in cross-section, a sheet-metal casing connecting said end pieces and pro-  
20 vided with inwardly arranged chambers substantially trapezoidal in cross-sections and formed of bent portions of said casing, the walls of said chambers being disposed within said openings, and brush bars dis-  
25 posed within said chambers.

2. A device of the character described, comprising end pieces provided upon their

peripheries with openings substantially trapezoidal in cross-section, a flange ar-  
30 ranged upon each of said end pieces, said flange following the periphery of the end piece and the walls of said trapezoidal open-  
ings, a sheet-metal casing connecting said end pieces and provided with longitudinal  
35 inwardly arranged chambers, formed of bent portions of said casing, the walls of said chambers fitting within said opening formed upon the end pieces, and brush-bars arranged within the chambers.

3. The combination with a cylinder pro-  
40 vided with longitudinally arranged chambers, of brush-bars disposed within said chambers, each of said brush-bars being provided with spaced sections of material for forming fan-blades, tubes arranged between  
45 said spaced sections and terminating near the centers of the same, and bristles removably held within each tube.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR A. VARDELL.

Witnesses:

O. H. DAMMETT,  
CHAS. STEEGER.