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H. B. CALDWELL

2,372,933

CAR WASHING BRUSH

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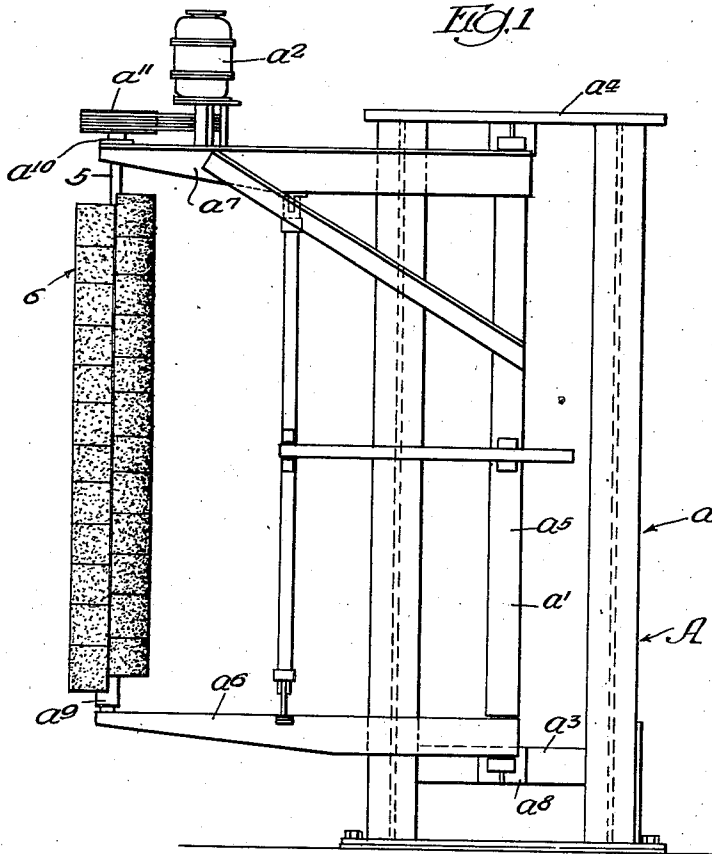


Fig. 2

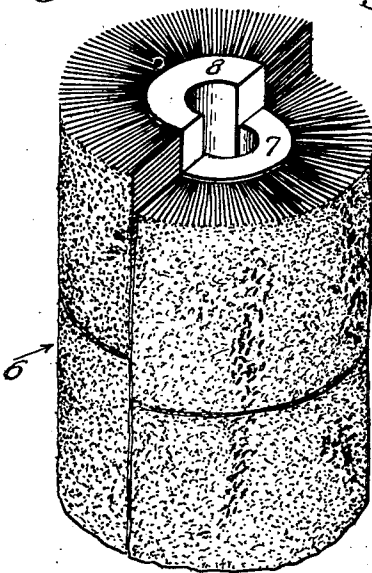


Fig. 3

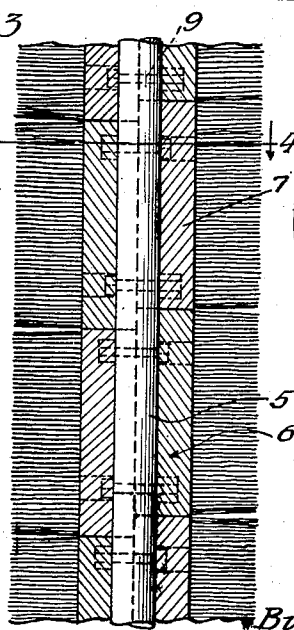
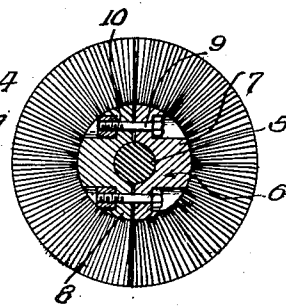


Fig. 4



Inventor
Harold B. Caldwell
By *Thed Gerlach*
Atty.

UNITED STATES PATENT OFFICE

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CAR WASHING BRUSH

Harold B. Caldwell, New York, N. Y., assignor to
Whiting Corporation, Harvey, Ill., a corporation
of Illinois

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3 Claims. (Cl. 15—181)

The present invention relates to brushes for use in washing cars, such as railway cars. More particularly the invention relates to that type of brush which comprises a vertically extending shaft and a series of bristle carrying sleeves on the shaft and is adapted to form a part of a car washing apparatus of the variety that embodies a mast structure at one side of a track for the cars to be washed, an upstanding C-shaped frame which is pivotally connected to the mast structure to swing to and from the cars, carries at the outer or distal ends of the upper and lower arms thereof bearings for the ends of the brush shaft and has means for urging it in the direction of the cars in order to bring the brush into contact or engagement with the cars as the latter are propelled past the apparatus, and power driven means which is associated with the frame and serves to drive the brush for car washing purposes when the frame is in its operative position.

In fabricating a car washing brush of this type it has heretofore been customary to utilize brush equipped sleeves which are split longitudinally to form complementary semi-cylindrical sections and to arrange the sections of each sleeve so that the ends thereof are conterminous or coplanar. It also has been customary to clamp each of the bristle carrying sleeves to the shaft by way of bolts which extend transversely through the complementary semi-cylindrical sections. In practice it has been found that a car washing brush which is fabricated in the aforementioned manner has certain disadvantages or defections. In the first place, the brush, especially after it becomes worn, has ring shaped spaces between the bristles at the ends of the sleeves and these spaces result in the cars being washed by the brush having unwashed streaks or zones. Secondly, the sleeves sometimes slip relatively to the shaft when, in connection with a car washing operation, the bristles thereof are brought into engagement with car protuberances, such, for example, as window frames and hand rails.

The primary object of the invention is to provide a car washing brush which is an improvement upon, and eliminates the disadvantages or defections of, previous brushes by reason of the fact that the semi-cylindrical bristle carrying sleeve sections at one side of the shaft are longitudinally offset with respect to the complementary sections at the opposite side of the shaft. By having the sleeve sections at one side of the shaft longitudinally offset with respect to the comple-

mental sections at the other side of the shaft the brush, even when worn, has no ring shaped spaces which result in unwashed streaks or zones on the cars. Furthermore, the sleeve sections are interlocked throughout the length of the shaft and hence the tendency of the sections to slip when the bristles thereof are brought into engagement with car protuberances is obviated.

Another object of the invention is to provide a car washing brush which is generally of new and improved construction, may be manufactured at a low and reasonable cost and is characterized by high efficiency and long life.

Other objects of the invention and the various advantages and characteristics of the present car washing brush will be apparent from a consideration of the following detailed description.

The invention consists in the several novel features which are hereinafter set forth and are more particularly defined by claims at the conclusion hereof.

In the drawing which accompanies and forms a part of this specification or disclosure and in which like numerals of reference denote corresponding parts throughout the several views:

Figure 1 is a front elevational view of a car washing apparatus having a brush embodying the invention;

Figure 2 is a fragmentary perspective of the brush showing the manner in which the bristle carrying semi-cylindrical sleeve sections at one side of the shaft are longitudinally offset with respect to the sections at the other side of the shaft;

Figure 3 is a fragmentary longitudinal section of the improved brush; and

Figure 4 is a transverse section taken on the line 4—4 of Figure 3 and illustrating in detail the manner in which the sleeve sections at one side of the shaft are bolted to the sections at the other side of the shaft.

The brush which is shown in the drawing constitutes the preferred form or embodiment of the invention. It is especially designed and adapted for use in washing cars, comprises a vertically extending shaft 5 and a series of bristle carrying sleeves 3, and forms a part of a car washing apparatus A. The latter, in addition to the brush, embodies a mast structure *a*, a C-shaped frame *a*¹ and a brush driving electric motor *a*². The mast structure *a* of the car washing apparatus A is located at one side of a track (not shown) for the cars to be washed. It serves pivotally to support the C-shaped frame *a*¹ and includes a crossbar *a*³ at its lower end and a

crossbar a^4 at its upper end. The C-shaped frame a^1 comprises a vertically extending member a^5 , a lower horizontally extending arm a^6 and an upper horizontally extending arm a^7 . The ends of the vertically extending member a^5 of the frame a^1 are provided with pintles and these are journaled in bearings a^8 on the crossbars of the mast structure a and permit the frame to swing to and from the cars to be washed. Spring or other means (not shown) is applied to the frame and serves in connection with use of the apparatus to urge the frame towards the cars in order to bring the brush into its operative position. The brush as shown in Figure 1, extends between the outer or distal ends of the horizontally extending arms a^6 and a^7 of the C-shaped frame. The outer end of the arm a^6 is provided with a bearing a^9 for the lower end of the brush shaft 5. The upper end of the brush shaft is journaled in, and extends through, a bearing a^{10} on the outer or distal end of the upper horizontally extending arm a^7 of the C-shaped frame a^1 . The electric motor a^2 is mounted on the frame a^1 and is connected to drive the brush by way of a belt and pulley connection a^{11} comprising a pulley on the armature shaft of the motor, a pulley on the upper end of the brush shaft and an endless belt arranged around the two pulleys. When the motor a^2 is in operation it effects drive of the brush.

The sleeves 6 of the brush are split longitudinally to form complementary semi-cylindrical sections 7 and 8. The bristles of the brush project radially from the sleeves and have the inner ends thereof suitably connected to the outer peripheral portions of the sections. The sleeve sections 7 are located at one side of the shaft 5 and are arranged so that the ends thereof are in abutment. The sleeve sections 8 are located at the other side of the shaft 5 and are arranged so that the ends thereof abut against one another. As shown in the drawing, the sleeve sections 8 are longitudinally offset with respect to the sections 7 and are secured to the latter by transversely extending bolts 9. Such bolts extend through aligned transversely extending holes 10 in the sections 7 and 8 and serve to clamp the bristle carrying sleeves 6 around the shaft 5. The sleeve sections 7 are the same in length as the sections 8. By reason of the fact that the semi-cylindrical sections 8 are longitudinally offset with respect to the sections 7 the brush, even when worn, has no ring shaped spaces between the bristles at the ends of the sleeves and hence during use thereof operates to wash and effectively clean all portions of the cars that are drawn therepast. In addition, the sleeve sections are interlocked throughout the length of the brush and hence there is no likelihood of the

sleeves slipping with respect to the shaft when the bristles are brought into engagement with car protuberances, such, for example, as window frames and hand rails.

The herein described car washing brush effectively and efficiently fulfills its intended purpose and is characterized by simplicity of design or construction and long life.

The invention is not to be understood as restricted to the details set forth since these may be modified within the scope of the appended claims without departing from the spirit and scope of the invention.

Having thus described the invention what I claim as new and desire to secure the Letters Patent is:

1. A car washing brush comprising a drive shaft, a longitudinal series of semi-cylindrical bristle carrying sleeve sections mounted on one side of the shaft, and a longitudinal series of complementary semi-cylindrical bristle carrying sleeve sections mounted on the other side of the shaft and arranged in such longitudinally offset relation with the sections of the first mentioned series that each of its sections with the exception of one of its end sections overlaps two opposed sections of said first mentioned series.

2. A car washing brush comprising a drive shaft, a longitudinal series of semi-cylindrical bristle carrying sleeve sections mounted on one side of the shaft and arranged so that the ends thereof are in abutment, and a longitudinal series of end to end complementary semi-cylindrical bristle carrying sleeve sections mounted on the other side of the shaft and arranged in longitudinally offset relation with the sections of the first mentioned series and in such manner that each of its sections with the exception of one of its end sections is in abutment with, and overlaps, two opposed sections of said first mentioned series.

3. A car washing brush comprising a drive shaft, a longitudinal series of semi-cylindrical bristle carrying sleeve sections mounted on one side of the shaft and arranged so that the ends thereof are in abutment, a longitudinal series of complementary end to end semi-cylindrical bristle carrying sleeve sections mounted on the other side of the shaft and arranged in such longitudinally offset relation with the sections of the first mentioned series that each of its sections with the exception of one of its end sections overlaps two opposed sections of said first mentioned series, and means extending transversely through the side portions of the sections and serving reasonably to clamp the sections in place around the shaft.

HAROLD B. CALDWELL.

CERTIFICATE OF CORRECTION.

Patent No. 2,372,933.

April 3, 1945.

HAROLD B. CALDWELL.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, line 56, claim 3, for the word "reasonably" read --releasably--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 12th day of June, A. D. 1945.

Leslie Frazer

(Seal)

Acting Commissioner of Patents.