

(No Model.)

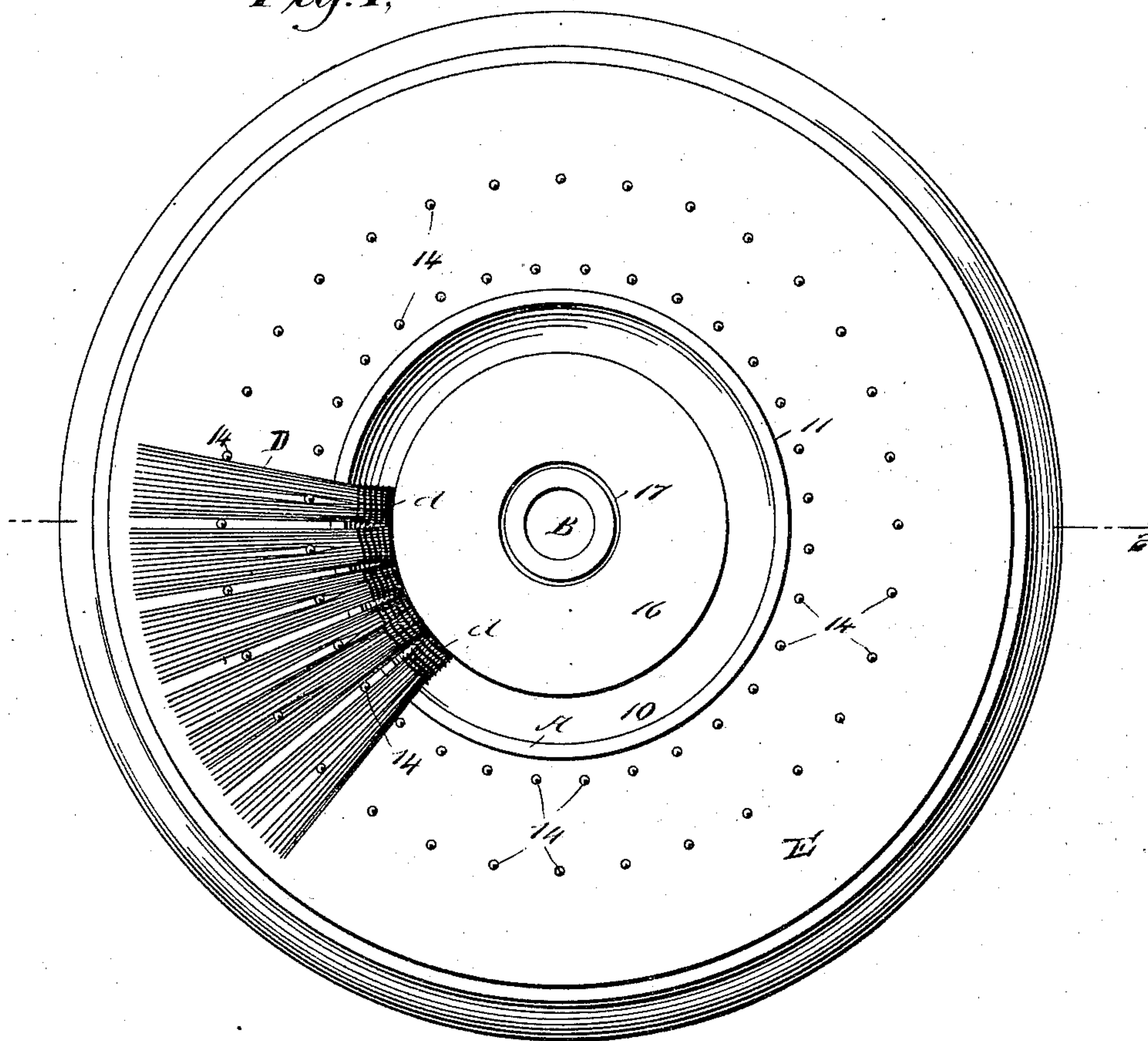
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C. WIEBKE, Jr.  
WHEEL BRUSH.

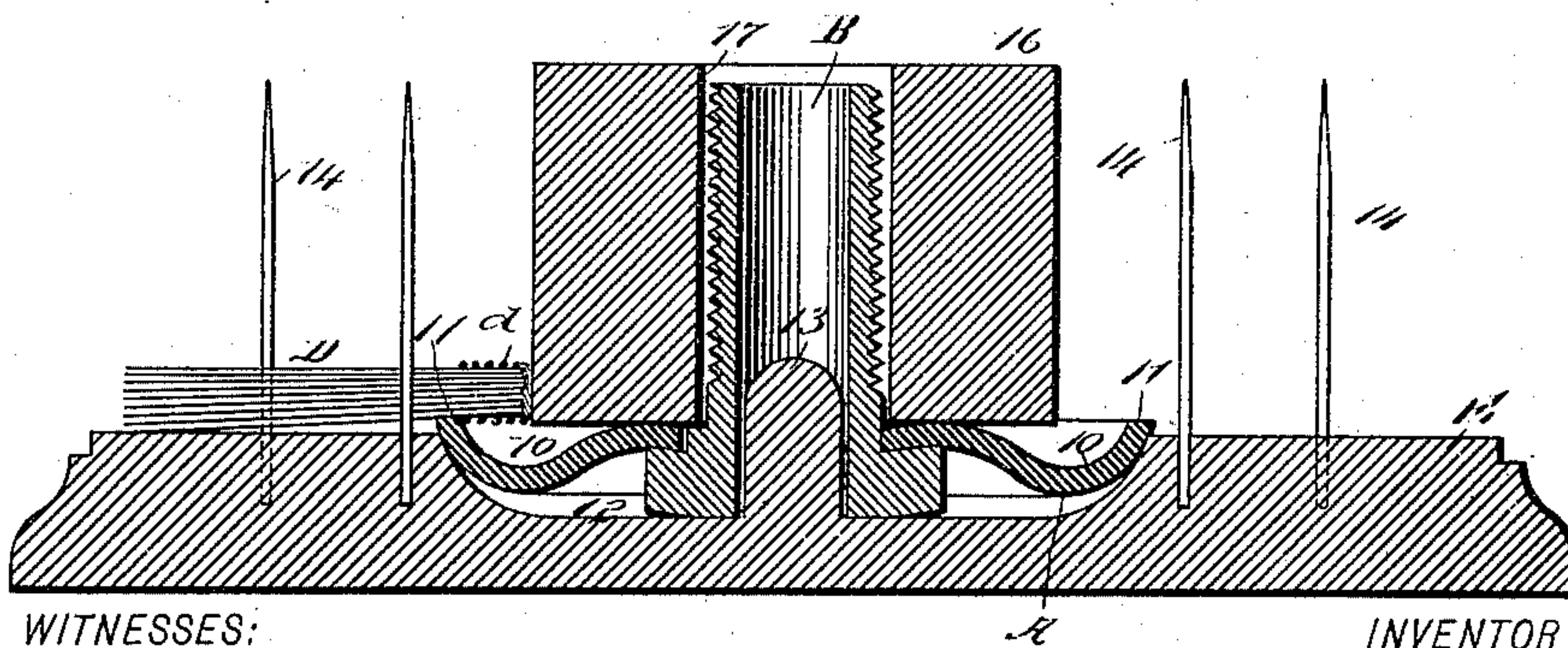
No. 545,029.

Patented Aug. 20, 1895.

*Fig. 1,*



*Fig. 2,*



WITNESSES:

INVENTOR

Edward Thorpe.  
J. F. Acker.

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BY Munn & Co.  
ATTORNEYS.



(No Model.)

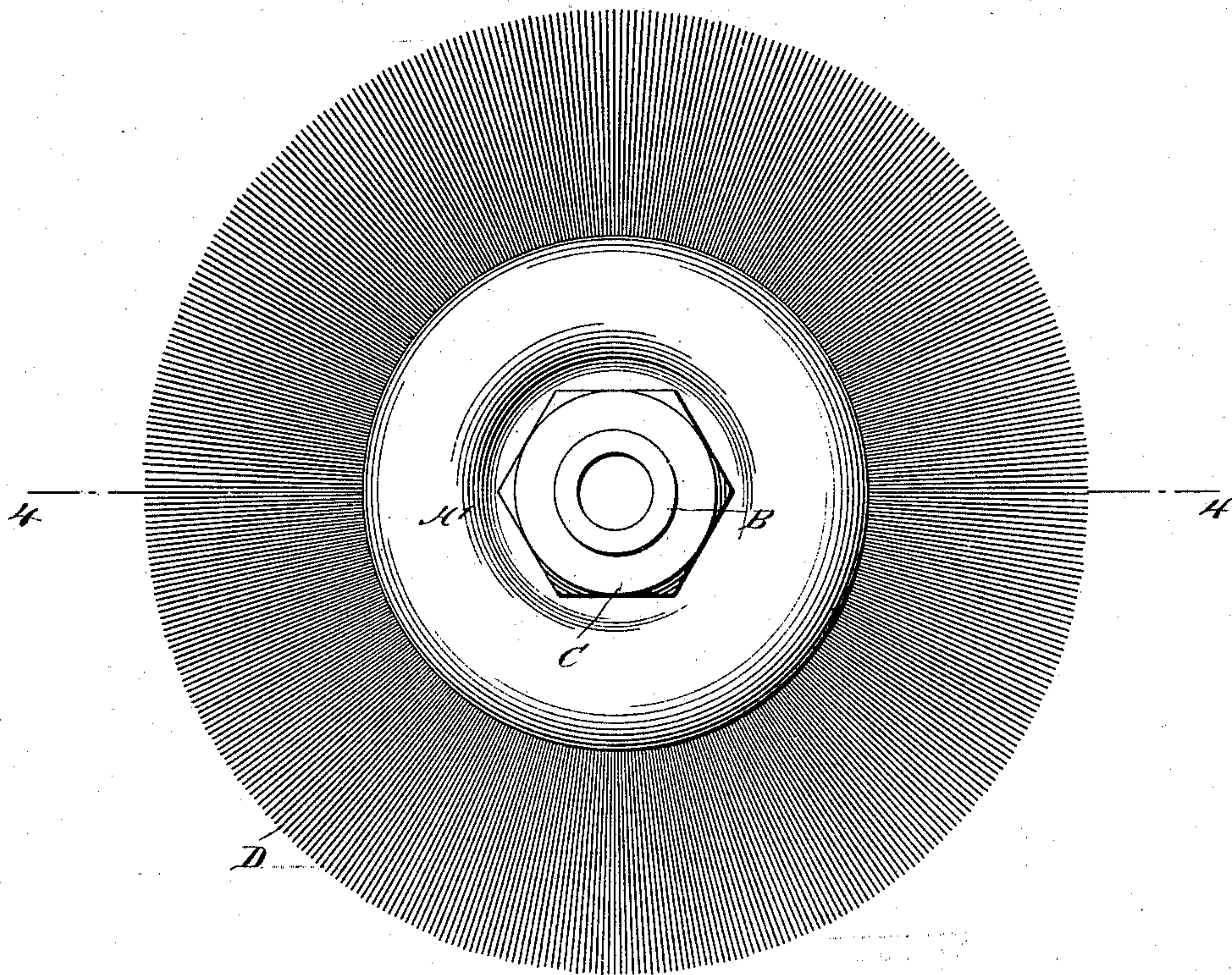
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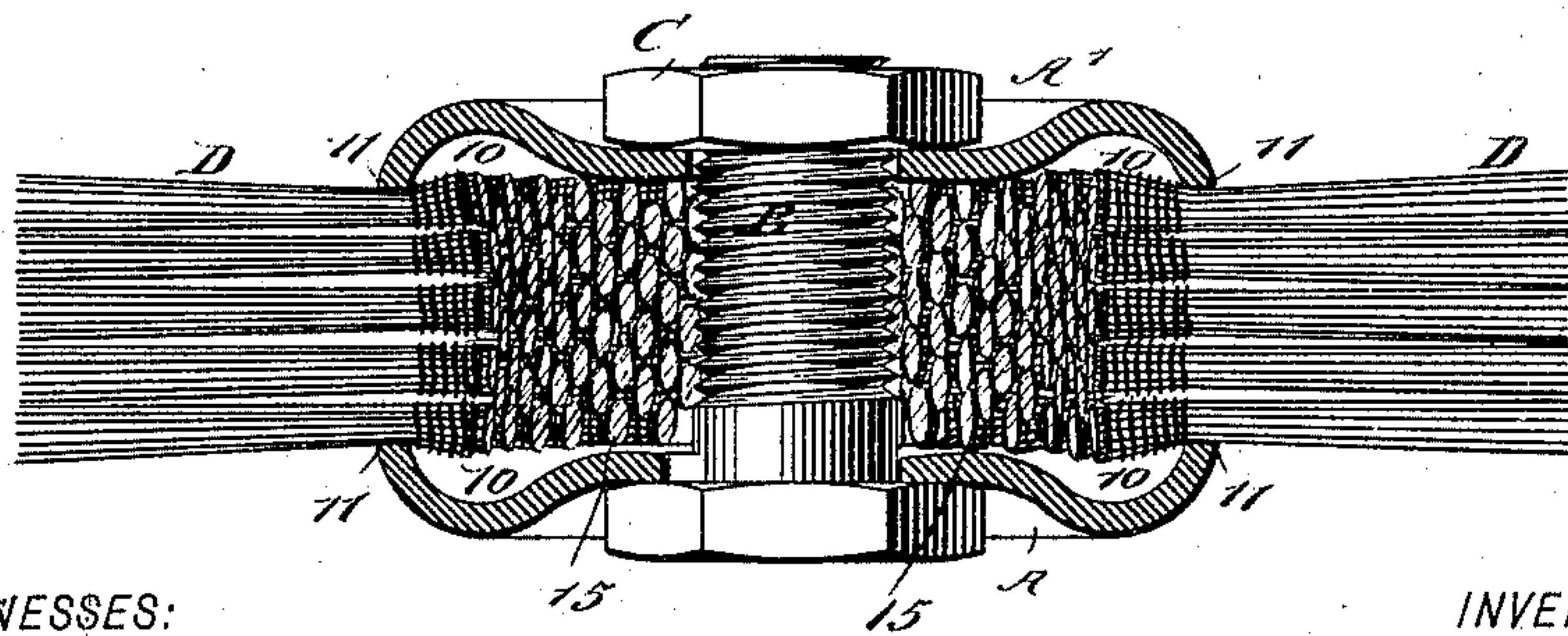
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*Fig. 3,*



*Fig. 4.*



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INVENTOR

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ATTORNEYS.



# UNITED STATES PATENT OFFICE.

CHARLES WIEBKE, JR., OF NEWARK, NEW JERSEY.

## WHEEL-BRUSH.

SPECIFICATION forming part of Letters Patent No. 545,029, dated August 20, 1895.

Application filed March 6, 1895. Serial No. 540,774. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES WIEBKE, Jr., of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Wheel-Brushes, of which the following is a full, clear, and exact description.

My invention relates to an improvement in wheel-brushes; and it has for its object to provide a brush of this description which will be evenly balanced and in which the services of a skilled workman will not be required to properly build it up.

Another object of the invention is to provide a means whereby the working members of the brush—namely, the bristles—will be held firmly and securely in place, and whereby the faster the brush may be revolved the more securely the bristles will be held in position.

Another object of this invention is to improve upon the method of constructing wheel-brushes, providing for the assembling of the brush much more expeditiously, conveniently, and economically than heretofore, and likewise providing means whereby the brush may have a smooth working-surface, or what is known as a "saw-tooth surface," if desired.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of a block upon which the brush is assembled, showing the manner in which the bunches of bristles are placed in position. Fig. 2 is a section taken substantially on the line 2 2 of Fig. 1. Fig. 3 is a plan view of the complete brush, and Fig. 4 is a section taken substantially on the line 4 4 of Fig. 3.

In carrying out the invention the brush comprises two head-plates A and A', a tubular bolt B, connecting the head-plates, a lock-nut C, and bristles D, held between the centers. These bristles are not placed loosely between the head-plates, but are made up in bunches of substantially the same weight and size, and

each bunch is provided with a knot *d* at its inner end, and therefore each bunch at its inner end is independently bound and the various bristles in the bunch firmly secured together before the bunches are placed between the head-plates. Under this construction should the bunches become worn or at any time loosened, so that some of the bunches might become spilled, the brush may be entirely dismantled and the bunches used over again. Furthermore, under this construction, as will be hereinafter more particularly set forth, the brush may be made thick or thin, stiff or very pliable, the knots of a discarded brush being employed in the construction of the new one.

The head-plates A and A' are of peculiar construction, being provided upon their inner faces near their margins with a depression forming an annular chamber 10, and the margin 11 of each head-plate is substantially flat, as illustrated in Figs. 1, 2, and 4. The head-plate A is provided with a central opening through which the tubular bolt B is passed, and the bolt is exteriorly threaded, the lock-nut C being placed in position on the bolt after the second plate has been applied to the set-up bunches.

In setting up the brush a die or forming-block E is used. This die or forming-block has a cavity 12 produced in the center, and this cavity is of a size and shape adapted to receive, for example, the plate A, its chambered surface being uppermost. Around the cavity 12, preferably concentric with the center, series of pins 14 are grouped, and these pins are placed in concentric rows, and the pins of one row are opposite the center of the space between the pins of the adjoining row. Thus it may be said that these pins have a "staggered" arrangement. The pins are firmly secured in the forming-block, and ordinarily their upper ends are pointed. A nipple 13 is formed upon the central portion of the cavity 12, and when the plate A is placed in position on the forming-block this nipple will enter the tubular bolt B, as shown in Fig. 2, holding the same steady. A centering-block 16 is used in connection with the forming-block, the said centering-block having an opening therein to receive the threaded por-



tion of the bolt B, and the centering-block rests upon the said head-plate A, as is shown in Figs. 1 and 2. The bunches of bristles D from which the brush is to be made up are  
 5 grouped around this centering-block. The knots of the bunches are made to abut against the centering-block 16 and are over the chamber 10 entirely within the head-plate A. Thus it will be observed that by using  
 10 larger or smaller centering-blocks the brushes may be made to extend outward from the head-plates to a greater or less degree, providing for making a brush either stiff or very yielding or a brush of medium flexibility.  
 15 In building up the brush the first row of bunches will be placed upon the pins of the inner row on the forming-block, passing between the pins of the outer row. When a row of bunches has been thus laid, the next  
 20 row will be placed over the spaces intervening the bunches of the first row and will pass between the pins of the inner row, the pins of the second row passing through the bunches. Thus the bunches are all laid, as it were, to  
 25 break joints; and it is evident that in so building up a brush, if the brush is to be thin or exceedingly pliable at its outer or working edge, bunches that have been worn down may be made to form one row and full bunches the  
 30 next row. In this manner it is evident that even with unskilled labor a brush may be expeditiously, conveniently, and economically built up, and that the brush when finished will be equally balanced. All the bunches hav-  
 35 ing been placed in position, the centering-block 16 is removed and the second head-plate is slipped over the upper end of the bolt B and the lock-nut is screwed upon the bolt to a bearing upon the said second plate. The  
 40 two plates will now clamp all the bunches with equal tension between them, and as these plates are tightened up the knots, as shown in Fig. 4, will be crowded together and will be held with wedge effect. In fact, one  
 45 knot serves to wedge the other, and the plates have bearing upon the bristles outside of the knots, so that the latter are thoroughly protected, and since each knot is carefully formed, as heretofore stated, binding together  
 50 all of the bristles in a bunch, there is little likelihood of any of the bristles becoming loosened and dropping out. Again, the faster the brush is rotated the more firmly will the

knots be held in position between the centers, owing to centrifugal action.

It will be readily understood that a brush may be built up with a saw-tooth periphery by simply placing the bunches tangentially to the centers, instead of causing them to radiate therefrom.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a wheel brush, the combination, with opposing head plates, a locking device connecting the two, and bristles formed into bunches having knots at their inner ends, the knotted ends of the bunches being contained between the head plates, the bunches being placed in rows one upon the other and breaking joints with each other, as and for the purpose set forth.

2. In a wheel brush, the combination, with head plates provided with annular chambers in their inner faces adjacent to their margins, and means for drawing the head plates together, of bristles formed in bunches, said bunches having knots at their inner ends, the bristle bunches being placed in annular rows with their ends between the head plates, the several rows breaking joints with each other the said head plates clamping the said bunches outside of their knotted ends, whereby the bunches when clamped between the head plates will be held together with a wedge like action, as and for the purpose specified.

3. In the construction of brushes, a forming block having a central cavity and a nipple projecting from the center of the cavity, and pins arranged in concentric rows on the block, the pins of the various rows being arranged in staggered order, substantially as described.

4. In the construction of wheel brushes, a forming table or block, having a central cavity and provided in the center of the cavity with a nipple adapted to hold the clamping centers of the brush and the connecting bolt thereof, pins arranged in rows around the said retaining device, the pins of the various rows being in staggered order, and a centering block located centrally within the inner row of pins, as and for the purpose specified.

CHARLES WIEBKE, JR.

Witnesses:

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