

(No Model.)

2 Sheets—Sheet 1.

J. H. BRINGOLD.

REVOLVING WIRE BRUSH WHEEL.

No. 367,591.

Patented Aug. 2, 1887.

Fig. 1.

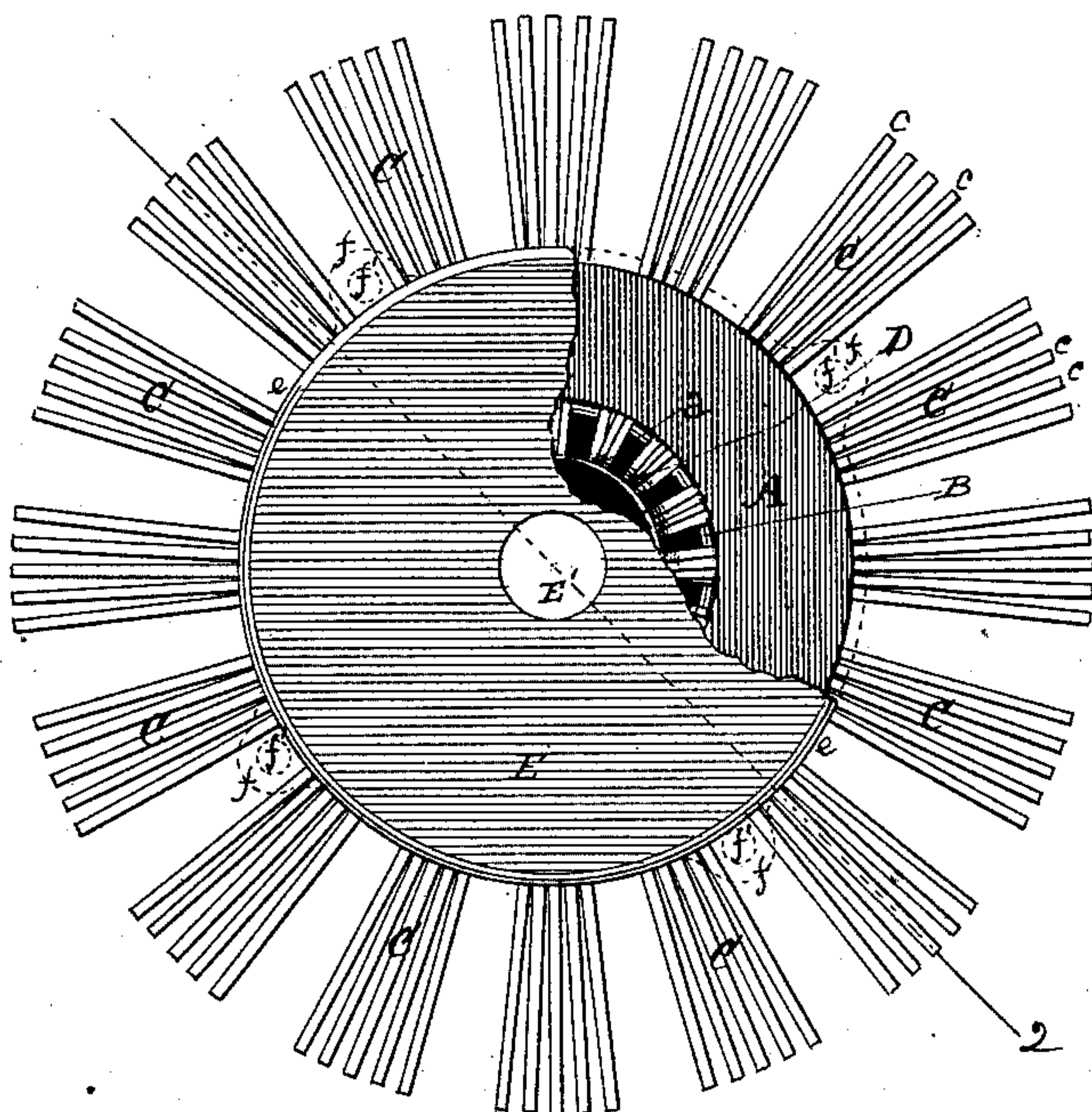
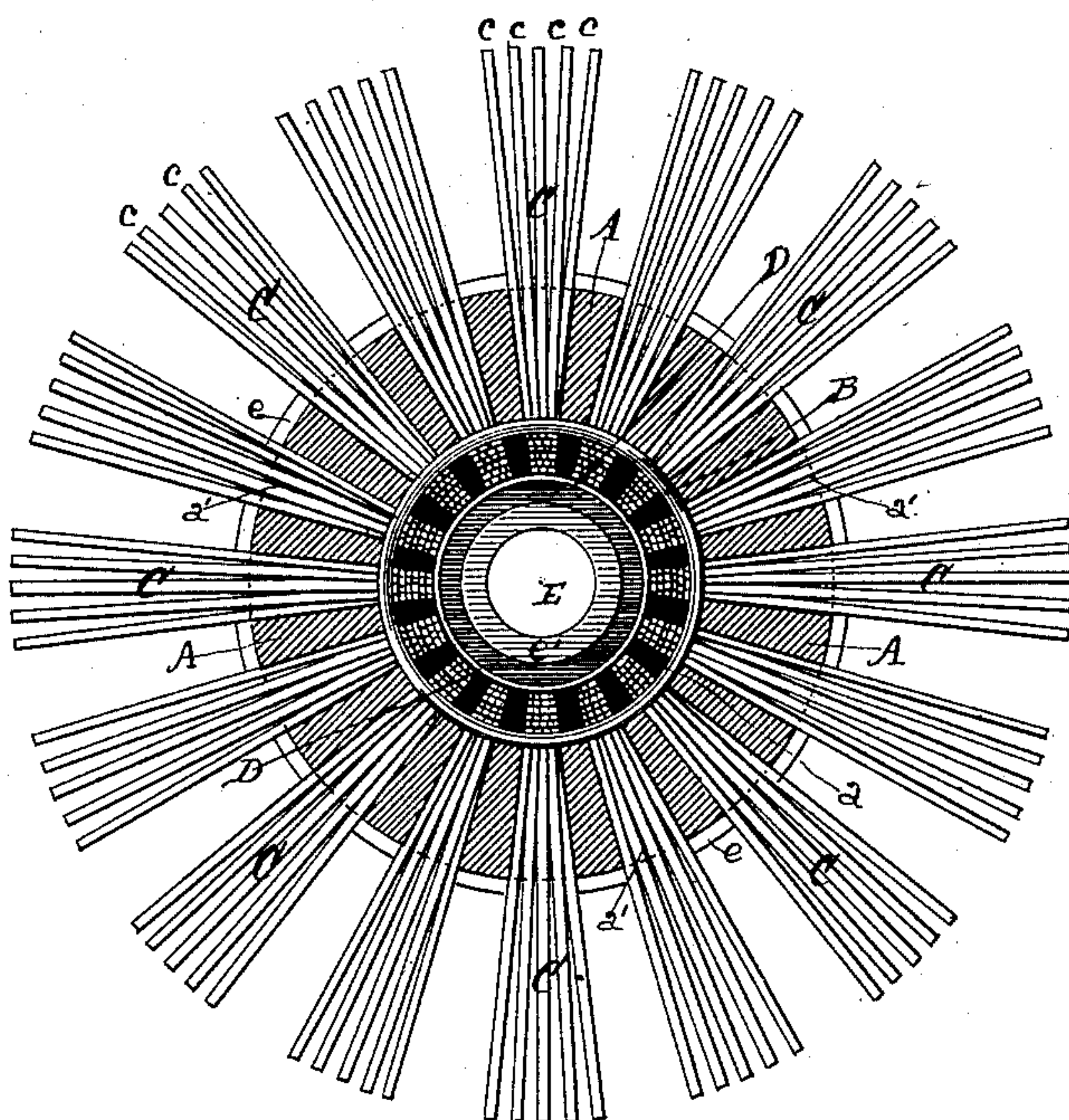


Fig. 2.



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Witnesses:
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James M. Shattuck

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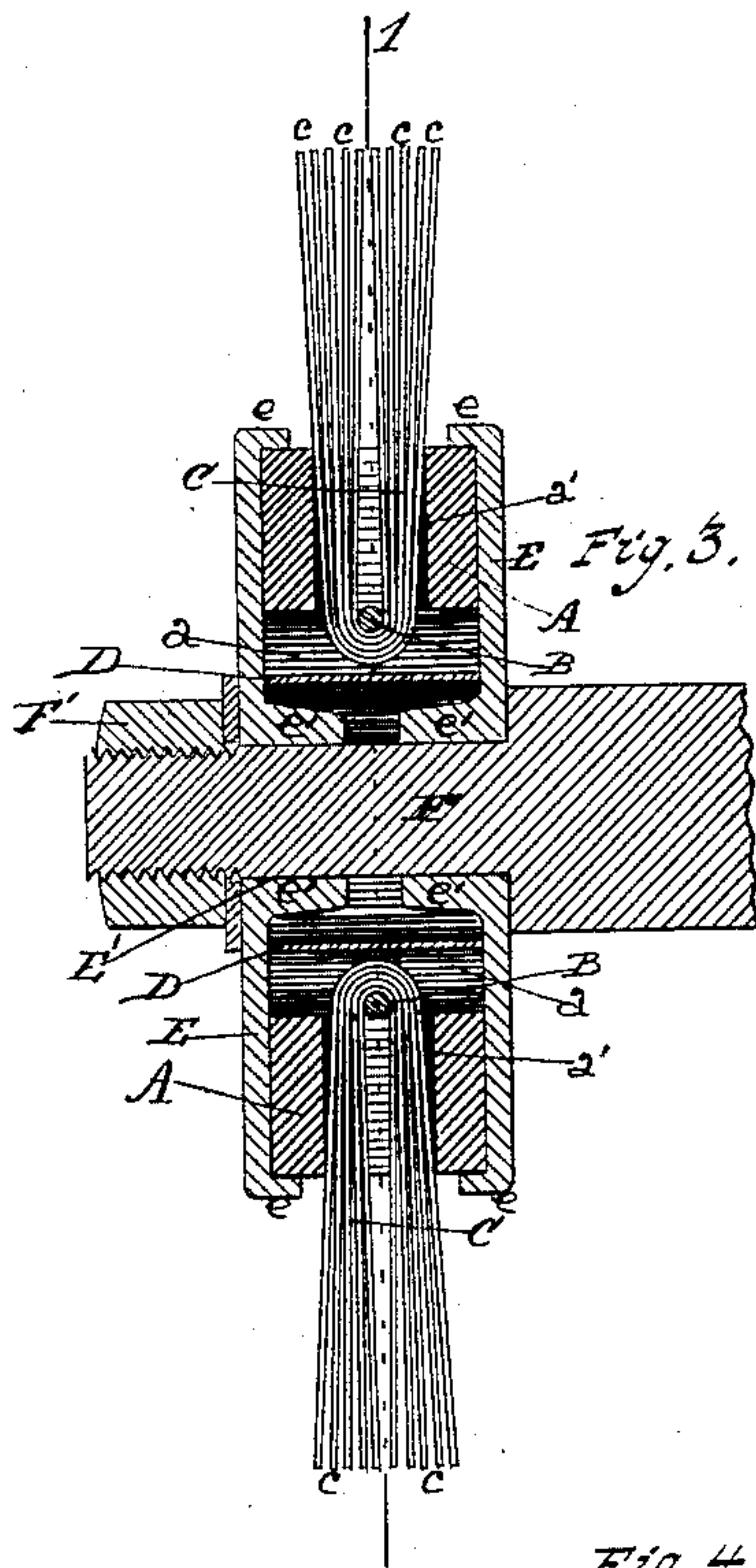


Fig. 3.

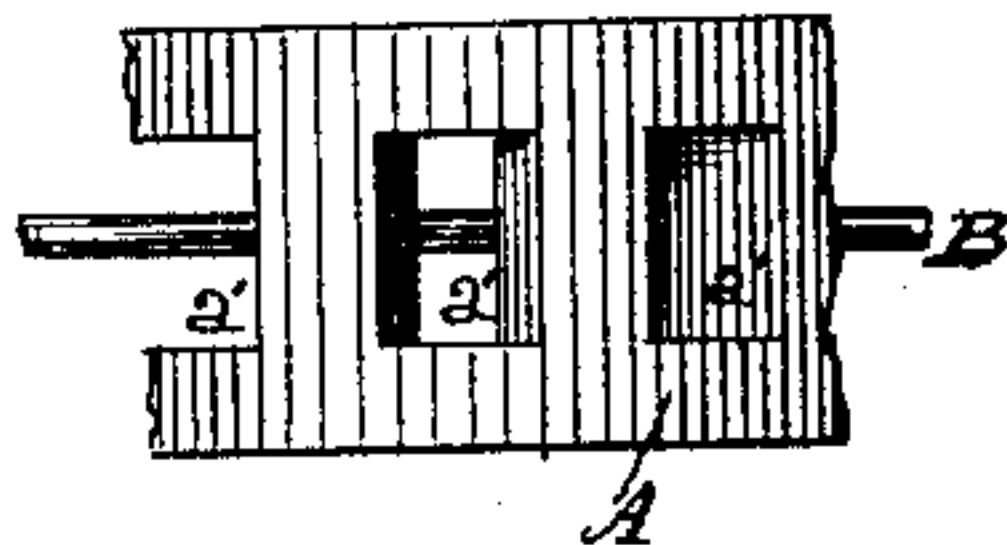


Fig. 4.

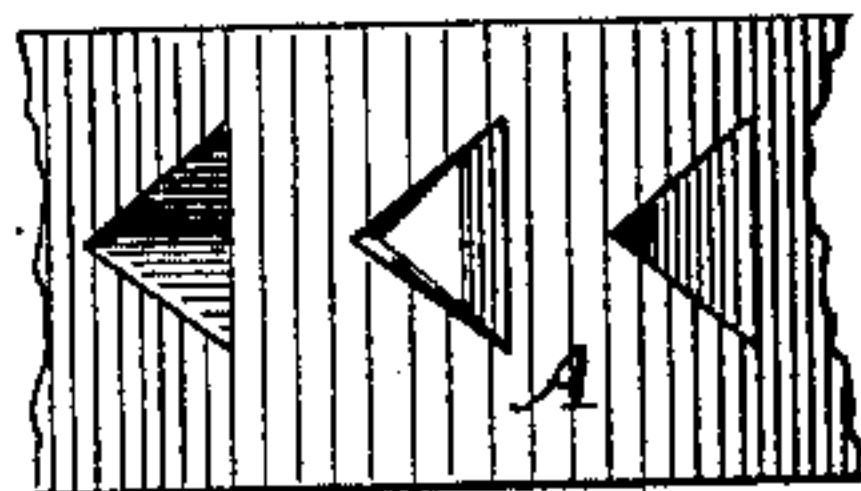


Fig. 6.

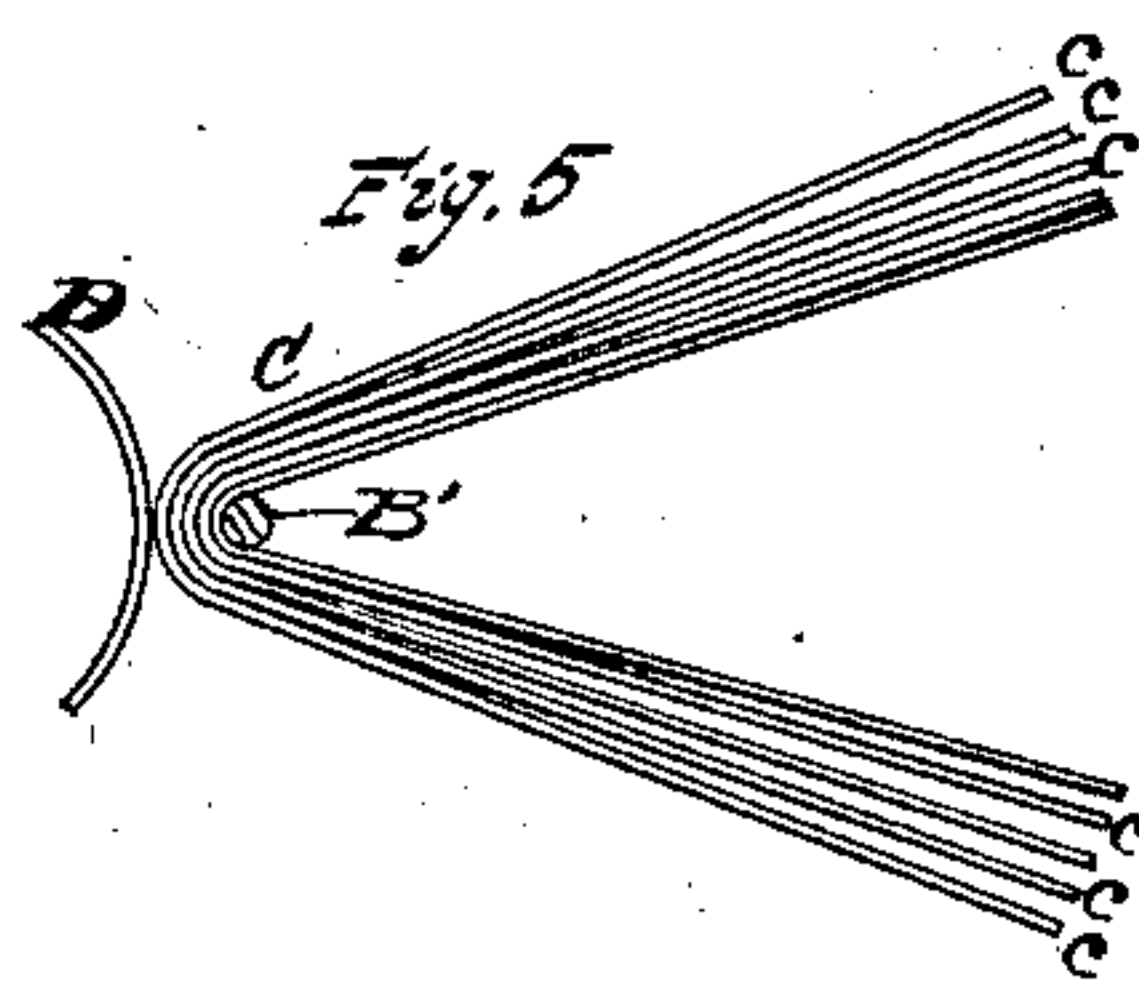


Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN H. BRINGOLD, OF ALBANY, NEW YORK.

REVOLVING WIRE-BRUSH WHEEL.

SPECIFICATION forming part of Letters Patent No. 367,591, dated August 2, 1887.

Application filed October 10, 1885. Serial No. 179,528. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. BRINGOLD, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Revolving Wire Brushes for Cleaning Castings, of which the following is a specification.

My invention relates to revolving wire brushes for use for cleaning castings; and it consists, primarily, of a circular hub provided with radial perforations which have elastic walls that are extended from a central perforation, and a corresponding number of flexibly-jointed bunches of brush-wires bent to V shape, and having support from the elastic walls of said radial perforations in such a manner that each wire in each bunch is free to yield in its whole length from its outer end to its jointed connection with a pivot-form key, which is employed to hold the bow ends of the wires; and, secondly, to provide specific means by which the brush-wires will be readily applied to the hub and be firmly secured therewith.

Heretofore revolving or wheel wire brushes for cleaning castings have been made to consist of a metal hub holding a series of bunches of brush-wire, in which the lower end portions of the wires in each bunch were tightly held together by surrounding metal, while the free end portions of the brush-wires were permitted to yield. In some cases these tightly-clamped bunches of wire were surrounded by bushings of leather tightly packed or clamped between the walls of the perforation receiving the bunches and the bunches themselves, so that the lower portions of the wires were rigidly held from moving. In these old brush-wheels these tightly-clamped wires in the respective bunches would after a few hours' use become crystallized to such an extent at a distance of about one inch (more or less) from the point of their tight clasp or rigid holding by the surrounding metal or leather, and break off at or near a line with the plane of the outer surface of the metal or leather edge clamping the bunches, and thereby render the brush-wheel useless.

The object of my invention is to overcome these defects and securely hold the wires with the hub, while they will be free to vibrate or

bend in their entire length and have support from elastic supports, and thereby prevent them from crystallizing and breaking, so that the wheel will be serviceable for a long time without repairing. I attain these objects by the means illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a view of my improved brush-wheel with part of the side clamping-plate broken away to show the inclosed parts. Fig. 2 is a sectional view taken at line 1 in Fig. 3. Fig. 3 is a sectional view taken in the transverse and at line 2 in Fig. 1. Fig. 4 is a view of a section of the hub from its outside, showing the perforations receiving the brush-wires. Fig. 5 is a view of the brush-wires, showing their form and relative arrangement. Fig. 6 is a view of a section of the hub from its outer side, and showing a modification of form of perforations holding the brush-wires when applied and secured.

The same letters of reference refer to like parts throughout the several views.

A is the hub of the brush-wheel, which hub is made preferably of a circular form and of elastic rubber, and with a diameter of about six inches and a thickness of about one and one-half inch, more or less. Made in this hub from side to side is central perforation, *a*, which is preferably about three inches in diameter. Made also in this hub are a series of radial perforations, *a'*, which extend from the central perforation outward through to the periphery, with their radial side walls flaring so that the said perforation will be wider at the periphery of the hub than at the bottom of the same, as shown in Figs. 2 and 6. The side and end walls of these radial perforations are preferably solid with each other, and the whole hub with these several perforations may be produced by molding the same from elastic rubber.

B is a ring of round metal made with an outer diameter about equal to the diameter of central perforation, *a*, so that it will nicely fit the same. This ring is arranged about at the center of length of central perforation, *a*, so that portions of this metal ring will be opposite each perforation *a'*, as shown in Fig. 4.

C are bunches of brush-wires *c c*, which are inserted in the respective radial perforations

5 a' , and secured from being drawn out by the metal ring B, holding with the bows of the bunched wires, as shown. These bunches are each composed of from one hundred to one
 10 hundred and twenty wires, preferably about nine inches each in length and bent in a V-shaped form, so that each of these wires will make two branches, as shown in Fig. 5. These wires are about one-sixteenth of an inch in
 15 width and about one thirty-second of an inch in thickness, and made of steel and tempered with spring temper. The perforations a' receiving the bunched wires are made with a length from end to end of about one and one-
 20 quarter inch, and with a width from side to side of about three-quarters of an inch, and these V-shaped brush-wires are arranged against the metal holding-piece B from its inner side in part by a first series, and in a sec-
 25 ond part by a second series drawing on the bows of the first, and a third series on the bows of the second, and so on, with a sufficient number of series for filling the perforations full without packing. The diameter of the
 30 central perforation, a , is of such sufficient dimensions as to permit these bow-shaped wires to be slipped over the holding-piece B and into the radial perforations a' , free ends first, as shown.
 35 D is a tubular-form back, which is made with a diameter to nicely fit and fill all around against the back of the bows of the respective bunches C of brush-wires, as shown, and is made with a length a little less than the length of the rubber hub from side to side. This tubular back
 40 when in place holds the bunches of brush-wire from being shoved back, while the holding-piece B prevents them from being drawn forward.
 45 E are clamping-plates made each with a rim-flange, e , all around on their facing sides, and with a central flange, e' , around the central openings, E' , in said clamping-plates. These rim-flanges e operate to hold the rubber hub
 A central to the central perforation, E' , while the latter perforation receives the shouldered

portion of the spindle F, which is to revolve this brush-wheel.

F is a screw-threaded clamping-nut screwed on the screw-threaded end portion of spindle 50 F and tightly against the outer one of the clamping-plates E, as shown in Fig. 3.

By my above-described improvements the bunches have made with them laminated bows, which pivot on the pivot-like piece B and per- 55 mit each wire to freely bend or vibrate from flexible bases and from curved holding-pieces without the least liability of their becoming crystallized, while the brushing portions of the wires in each bunch will mutually support in 60 an elastic manner each other, while they are together supported in a yielding and elastic manner from the side walls of the perforations receiving the bunches.

Having described my invention, what I 65 claim, and desire to secure by Letters Patent, is—

1. In a wire brush, the combination, with hub A, provided with a central perforation and a series of radial perforations having flar- 70 ing elastic sides, and a series of laminated bunches, C, of tempered flat steel wire, of the pivot-like holding-piece B, engaging with the loops of the bow ends of the respective bunches, and the bow-supporting piece D, all substan- 75 tially as and for the purposes set forth.

2. In a wire brush, the combination, with the hub A, having central perforation, a , and a series of radial perforations, $a' a'$, having elastic flaring sides, and the series of lami- 80 nated bunches, CC, of tempered steel wire, and holding-piece B, tubular backing-piece D, clamping-plates E E, provided each with a central perforation, and a revolving shaft or spindle provided with a shoulder or collar 85 and a clamping-nut, all substantially as and for the purposes and operations set forth.

JOHN H. BRINGOLD.

Witnesses:

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ISAIAH B. JOHNSON.