

J. J. DILLON,
FLUE CLEANER OR BRUSH.
APPLICATION FILED OCT. 15, 1915.

1,189,798.

Patented July 4, 1916.

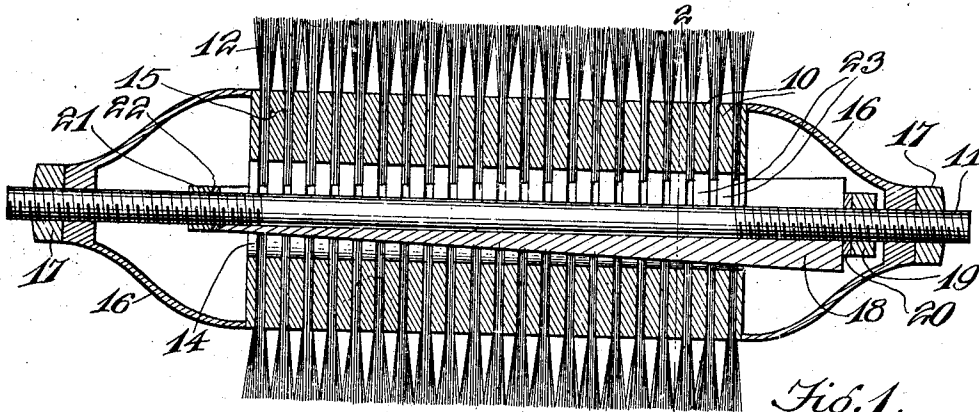


Fig. 1.

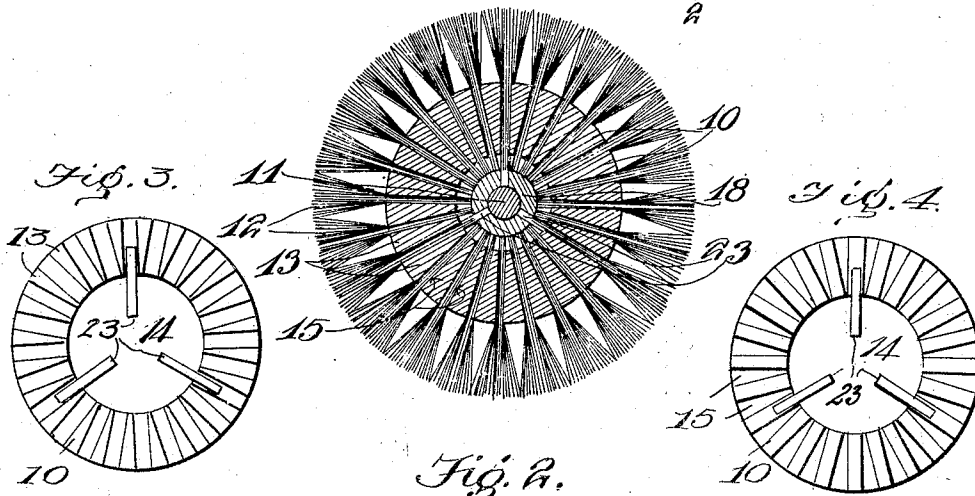


Fig. 2.

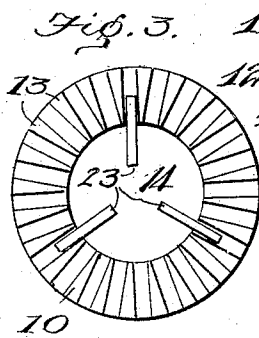


Fig. 3.

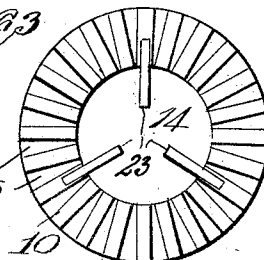


Fig. 4.

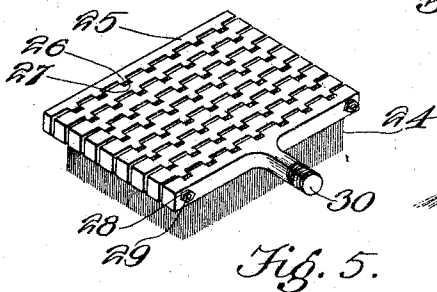


Fig. 5.

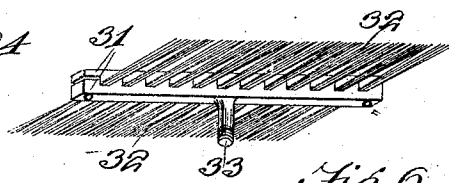


Fig. 6.

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JOSEPH J. DILLON, OF WILMETTE, ILLINOIS.

FLUE CLEANER OR BRUSH.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH J. DILLON, a citizen of the United States, residing at Wilmette, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Flue Cleaners or Brushes, of which the following is a specification.

The brush which is the subject-matter of the present application for patent is designed more particularly for cleaning boiler tubes or flues, although it is not limited to such use, and the invention has for its object to provide in a brush of this kind a novel and improved means for securing the bristles to the head. The object stated is attained by means of a combination and arrangement of parts to be hereinafter described and claimed, reference being had to the accompanying drawing, in which—

Figure 1 is a central longitudinal section of one embodiment of the invention; Fig. 2 is a cross-section on the line 2—2 of Fig. 1; Figs. 3 and 4 are elevations of one of the brush head members showing opposite sides thereof; Figs. 5 and 6 are perspective views showing other embodiments of the invention.

Referring specifically to the drawing, and more particularly to Figs. 1 to 4, the brush head here illustrated is composed of a series of disks 10 strung side by side on a spindle or rod 11 having at one end suitable coupling means for connection to a handle. The bristles 12 of the brush are clamped between the disks 10. On one side of the disks are radial ribs 13 starting a short distance from the center openings 14 through which the spindle 11 passes, and extending to the edge of the disks. In the opposite sides of the disks are radial grooves 15 of the same length and width as the ribs 13 and alternating therewith. When the disks are assembled on the spindle, the ribs of one disk seat in the grooves of the next, this arrangement being followed throughout the entire series of disks. The bristles 12 are placed in the grooves, in which latter they are securely clamped by the ribs when the disks are pressed or clamped together, this being effected by conical caps 16 mounted on the ends of the spindle 11 and adapted to be forced and held against the end disks of the series by nuts 17 screwed on the spindle ends. Upon screwing up the nuts

17, the disks are clamped together and the bristles are securely held therebetween.

The bristles are tufts of steel wire and they project from the edges of the disks 10. The inner ends of the bristles project a short distance into the disk openings 14, the diameter of said openings being greater than the diameter of the spindle 11, so that a device may be mounted on said spindle for taking up wear of the bristles. This device is a sleeve 18 which is tapered toward one end and divided longitudinally into three sections as shown in Fig. 2. The sleeve is slidably mounted on the spindle 11 and the inner ends of the bristles abut against the outer surface of the sleeve. As the sleeve is tapered, it will be seen that when it is moved in the direction of its smaller end, the bristles, after loosening up the disks 10, will be forced outward or expanded, and in this manner wear at the outer ends of the bristles is readily taken up. The sleeve is operated by a nut 19 screwed on one end of the spindle, opposite the larger end of the sleeve, with a washer 20 interposed between said sleeve end and the nut. Against the smaller end of the sleeve is screwed a lock nut 21, carried by the spindle, between which nut and said sleeve end is interposed a washer 22. Before the sleeve can be moved to force the bristles outward, the nut 21 must be backed, and after the adjustment is made, the nut is advanced, whereupon the sleeve is securely held on the spindle 11. The nuts 19 and 20 are housed in the caps 16.

In order to center the disks 10 on the spindle 11, said disks have radial lugs 23 extending inward from the edge of the opening 14, said lugs seating between the sleeve sections and extending as far as the spindle 11.

Fig. 5 shows a brush having a rectangular head, from one side of which latter the bristles 24 extend. This brush head is composed of a series of strips 25 having tongues 26 on one side and grooves 27 on the other side. The strips are assembled in the same manner as the disks 10 hereinbefore described, the tongues of one strip seating in the grooves of the next strip, and the bristle tufts being mounted in the grooves, in which they are held by the tongues when the strips are clamped together, this being done by nuts 28 on rods 29 passing through

the strips near the ends thereof. One of the end strips of the series has a shank 30 for attachment of a suitable handle.

Fig. 6 shows a narrow brush, the head of which is composed of two strips 31 between which the bristle tufts 32 are clamped in the same manner as that last described. One of the strips 31 has a shank 33 for attachment of a handle. The bristles are of such length that they project from both sides of the brush head, thus forming a double brush.

I claim:—

1. A brush comprising a head composed of sections mounted side by side and having a central opening, bristles held between the sections, a spindle passing through the central openings of the head sections, a tapered sleeve slidably mounted on the spindle in the central openings, against which sleeve the inner ends of the bristles are adapted to abut, means for moving the sleeve in the direction of its length, means for locking the sleeve on the spindle, and means carried by the spindle for clamping the sections of the head together.

2. A brush comprising a head composed of sections mounted side by side and having a central opening, bristles held between the sections, a spindle passing through the central opening, bristles held between the sections, a spindle passing through the central openings of the head sections, a tapered

sleeve slidably mounted on the spindle in the central openings, against which sleeve the inner ends of the bristles are adapted to abut, means for moving the sleeve in the direction of its length, means for locking the sleeve on the spindle, caps mounted on the spindle ends and engageable with the end head sections of the series, and means for operating the caps to clamp the head sections together, said caps inclosing the aforesaid sleeve actuating and locking means.

3. A brush comprising a head composed of sections mounted side by side and having a central opening, bristles held between the sections, a spindle passing through the central openings of the head sections, a tapered sleeve slidably mounted on the spindle in the central openings, against which sleeve the inner ends of the bristles are adapted to abut, said sleeve being divided longitudinally into sections, and the head sections having lugs extending inward from the central openings to engage the spindle, and seating between the sleeve sections, means for moving the sleeve in the direction of its length, means for locking the sleeve on the spindle, and means carried by the spindle for clamping the sections of the head together.

In testimony whereof I affix my signature.

JOSEPH J. DILLON.