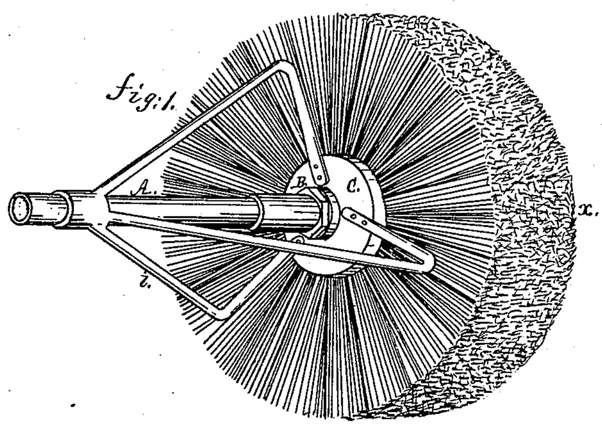
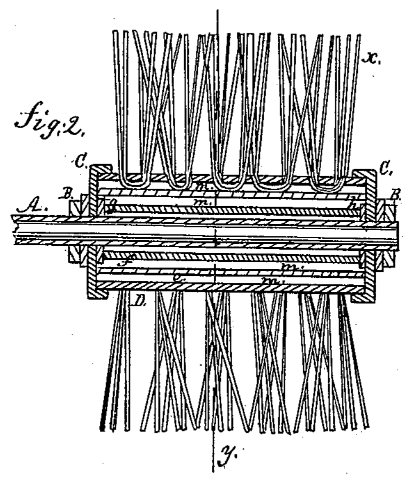
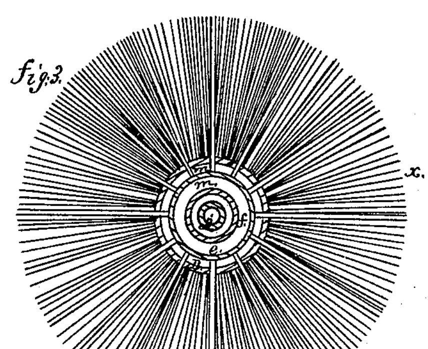
J. H. DAVIS.

BOILER-FLUE BRUSHER.

No. 181,416. Patented Aug. 22, 1876.







Witness.

John H Phillips

A.H. Drocourt

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UNITED STATES PATENT OFFICE.

JOSEPH H. DAVIS, OF SEWICKLEY, PENNSYLVANIA.

IMPROVEMENT IN BOILER-FLUE BRUSHES.

Specification forming part of Letters Patent No. **181,416**, dated August 22, 1876; application filed September 28, 1875.

To all whom it may concern:

Be it known that I, JOSEPH H. DAVIS, of Sewickley, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Flue-Brushes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in flue-brushes, and consists in constructing the body in which the steel bristles are secured of thin sheet metal, and in detachable parts, whereby strength, lightness, durability, and ease of separation of the several parts, or repairs, are secured.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction.

In the accompanying drawings, which form part of my specification, Figure 1 is a perspective view of my improvement in flue-brushes. Fig. 2 is a vertical and longitudinal section of the same. Fig. 3 is a transverse section of the same at line *y* of Fig. 2.

In the drawings, A represents the stem, which is constructed of gas-tubing and furnished with screw-nuts B. The ends C, and the cylindrical parts D and *e*, are constructed of sheet metal. The cylinder D is provided with a large number of small openings, through which, from the interior, are inserted steel bristles *x*, bent in the form of the letter **U**. The cylinder *e* is placed within the cylinder D for the purpose of holding the bristles in proper position in the cylinder D. Over the stem A is placed a tube, *f*, and also washers *g* and *h*, which, in connection with the screw-nuts B, will bind and hold the several parts in a fixed position with relation to each. The guide *i* is constructed in any of the known forms, and is secured to one of the ends C. The spaces *m*, in the body of the brush, may, if so desired, be filled with asbestus, or article having refractory power.

By constructing a flue-brush in the manner hereinbefore described, strength, lightness, and durability are secured. Lightness is a great consideration in a flue-brush for steam-boilers, for by it the operator can more easily manipulate it, and will not be so liable to injure the steel bristles by undue pressure and friction in turning it, and in moving it back and forward through the flues of the boiler.

By constructing a flue-brush of sheet metal, and in several parts, as herein described, it will cost less than the old kind, and can be readily separated for repairs.

Another advantage consists in dispensing with the use of wood, which absorbs moisture and retains it, which moisture oxidizes the steel bristles, thereby rendering them in a short time useless. This condition of things is aggravated when water is used in the cleaning of flues, and when the brush is exposed in rainy and damp weather. A further advantage derived from this construction of the brush consists in allowing the bristles to move or play in the opening, so as to adjust themselves to the projecting heads of the rivets and other uneven or irregular parts of the surfaces of the flue.

I am aware that a flue-brush having an outer and inner lining of sheet metal, also metallic ends, covering a wooden cylinder, has been made, such device being described in Letters Patent granted to P. H. Coyle, November 3, 1868; but, in contradistinction to such device,

I claim—

In a flue-brush, the combination of the metal cylinders D *e*, tube *f*, washers *g h*, ends C, screw-nuts B, and steel bristles *x*, all constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

JOS. H. DAVIS.

Witnesses:

A. H. DROCOMB,

JOHN H. PHILLIPS.