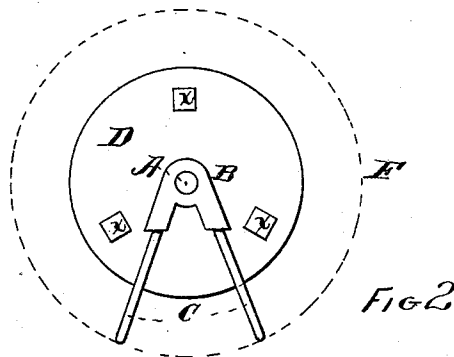
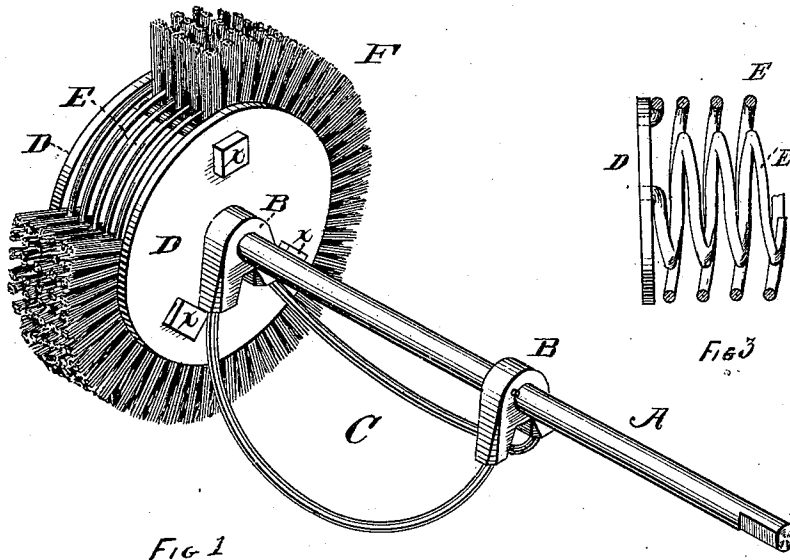


C. C. MILLER.
Brush for Cleaning Boiler-Flues.

No. 202,361.

Patented April 16, 1878.



Witnesses

M. H. Freshman,
G. S. Peck.

Chas C. Miller Inventor

By his Attorney
H. P. Peck

UNITED STATES PATENT OFFICE.

CHARLES C. MILLER, OF HAMILTON, OHIO.

IMPROVEMENT IN BRUSHES FOR CLEANING BOILER-FLUES.

Specification forming part of Letters Patent No. **202,361**, dated April 16, 1878; application filed June 4, 1877.

To all whom it may concern:

Be it known that I, CHARLES C. MILLER, of Hamilton, in Butler county, Ohio, have invented a new and useful Improvement in Brushes for Cleaning Boiler-Flues; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a perspective view of my improved brush. Fig. 2 is a plan view of the same. Fig. 3 represents an edge view of one of the disks of the brush-head, with parts of the spiral wires secured thereto.

By reference to the drawings the nature of my invention will be readily understood.

Two disks, D D, are secured together by three screw-bolts, *x*, and around the structure a wire, E, is spirally coiled, resting upon the bolts *x*, and between the disks and the coils of wire the materials of the brush are inserted and firmly held by the disks, compressed together by the screw-bolts, which are provided with nuts.

The shaft or handle A is secured centrally by passing through holes in the disks D D.

The distinguishing feature of my invention consists in the arrangement of the spiral wires E and E', as represented. One of these wires is arranged near the periphery and one centrally between the disks, and both are secured to one of the disks by riveting, as shown in Fig. 3.

The carriage C is attached to the handle A by loose hinges B B, so that, by its own gravity, it will tend to swing downward from the handle upon which it works, and it guides centrally through a flue to be cleaned.

In using my improvement the head of the brush may be thrust entirely through the flue to discharge the scales and dirt which the

brush detaches from the flue in its progress, and by the aid of the carriage C the brush will not only be guided centrally in its reciprocating movements, but will necessarily re-enter the flue after being thrust entirely through, with its head, without particular manipulation. Besides, it is well-known that short stiff brush materials, which are most efficient for the purpose, cannot be easily used in flue-brushes when the reversing of the motion has to be given within the flue.

By the use of the carriage C the reversed motion to withdraw the brush does not require to be made until the brush-head has passed entirely out of the end of the flue, and consequently less labor is required to use it, and the brush material is not so liable to be broken to pieces.

Whalebone, wire, cane, or other materials may be used to fill and refill the brush-head.

My improvement enables the materials of the brush to be readily inserted between the two disks in proper position and relation, because the two spiral wires are securely held in place by being attached at one end to one of the disks. This arrangement obviates the necessity of manipulating a series of rings which would be used for the same purpose.

I claim—

The combination of spiral wires, having their ends fastened to one of the disks D, with the disks clamped by screw-bolts *x*, in brushes for cleaning boiler-flues, substantially as described.

Witness my hand this 29th day of May, 1877.

CHARLES C. MILLER.

Witnesses:

R. B. DAVIDSON,
H. P. K. PECK.