P. H. Ryan,

Flue Brush.

No. 92,211. Patented July 6. 1869.

Fig. 1

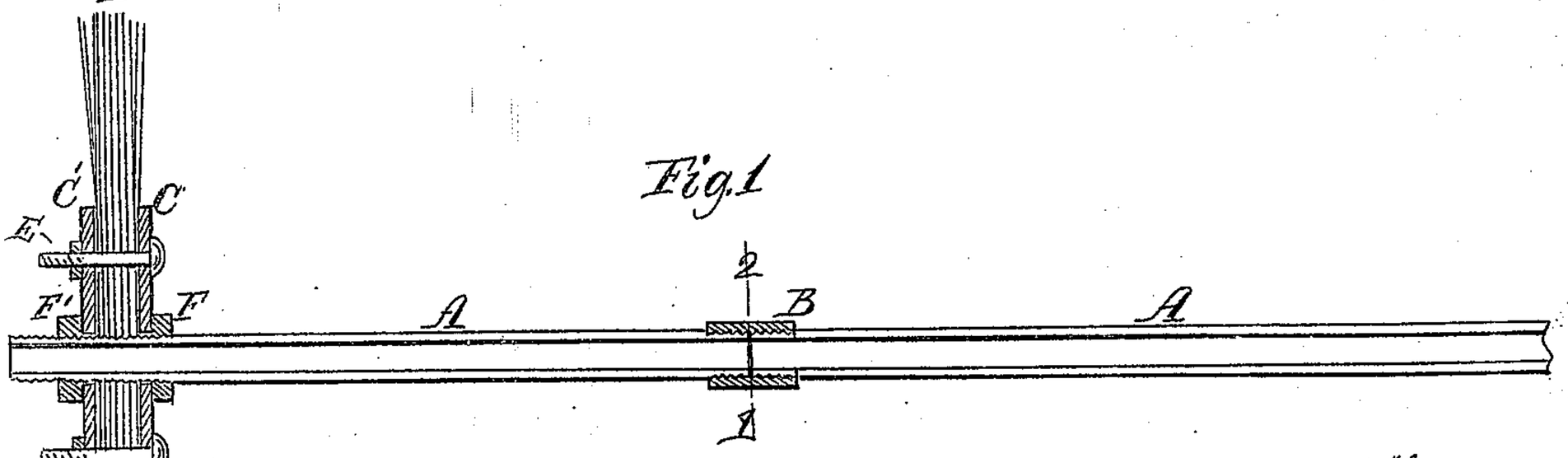


Fig 2

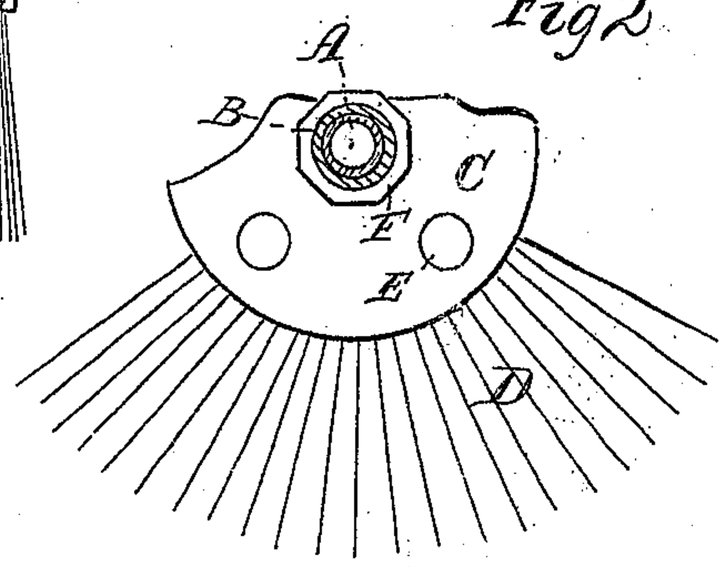


Fig 3

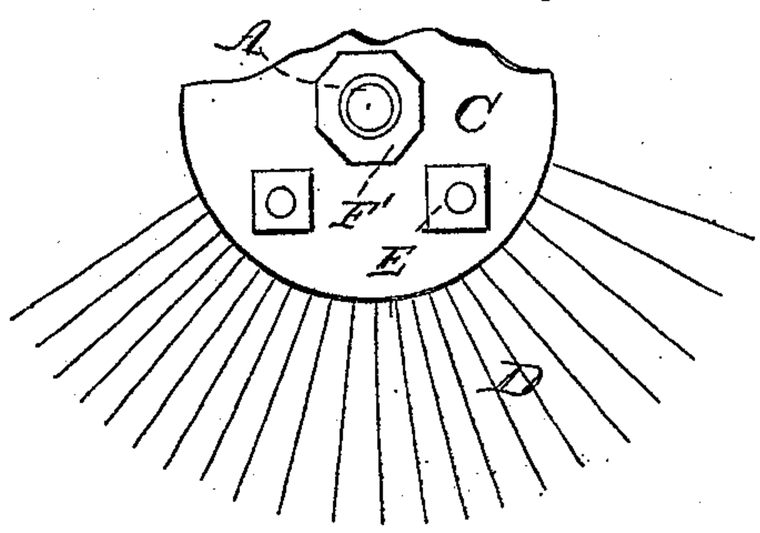
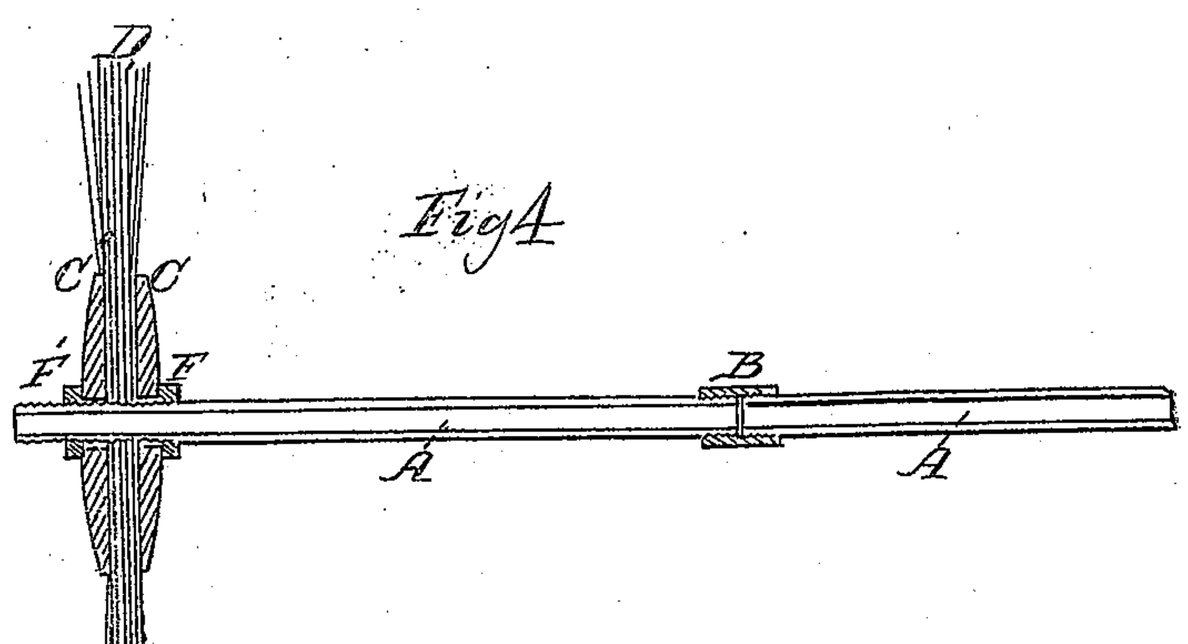


Fig 4



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Letters Patent No. 92,211, *dated July* 6, 1869.

IMPROVEMENT IN BOILER-FLUE BRUSHES.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, P. H. RYAN, of Cincinnati, county of Hamilton, and State of Ohio, have invented a new and useful Improvement in Flue-Brushes, of which the following is a full and clear description thereof, reference being had to the accompanying drawings, making part of this specification.

The nature of my invention consists in clamping together the "brush-sweep," consisting of straw, wire, slivers of hickory, or other suitable material, by means of two clamping-plates, between which the "brush-sweep" is secured, by means of bolts; also to the manner of attaching the clamping-plates to the jointed tubular handle by lock-nuts.

Figure 1 represents a longitudinal section of my improved flue-brush, the section being taken in the plane of 1–2.

Figure 2 is a transverse sectional elevation of the joining-nut and brush.

Figure 3 is an elevation of the exterior face of the flue-brush.

Figure 4 is a longitudinal section of the brush, wherein the bolts for securing together the clamping-plates are dispensed with.

A A are sections of gas-pipe or other suitable tubular metal, secured together by thimbles B, and constitute the handle of the flue-brush.

The extreme end of the handle, to which the brush is attached, is threaded a sufficient distance from the end to give room for the desired thickness of brush.

C and C′ are the clamping-plates, between which the straw D, or other suitable material, is secured. They have central perforations, through which the threaded end of the handle of the brush is passed. The clamping-plates are made of boiler-iron, and are preferably circular in form.

Four bolts, E, for small brushes, occupy perforations in the plates C C, and spaces between the wire or other material of the brush. They are located near the periphery of the clamping-plates, for the purpose of securing properly the "brush-sweep" at a point as far as possible from the centre of the handle.

The inner and outer lock-nuts, F and F′, respectively, are screwed upon the threaded end of the tubular handle A, the first mentioned being in close contact with the outer face of the inner clamping-plate C.

The nut F′ is brought into close contact with the outer face of the exterior clamping-plate C′, which secures the but-ends of the "brush-sweep" at the central point of the brush.

In the modified form of the foregoing description of the flue-brush, the plano-convex clamping-plates C C, are used, and are caused to clamp between them the "brush-sweep" D, by screwing up tightly the lock-nuts F F′ upon the handle A.

Since it may be preferable to have the straw or other material continuous through the centre of the brush, (not exhibited in fig. 1, and also in the modified form in fig. 4, but which may be thus described,) the clamping-plates are made concavo-convex, or box-shape, in order that the material may have room to cross at the centre, and when the lock-nuts are well screwed down upon the clamping-plates C and C′, the straw or other material between them is firmly nipped at the periphery of said plates C C′, and the bolts E may be dispensed with. It being desirable that great rigidity in the plates be attained, the use of cast-iron is to be preferred to boiler-iron.

In the construction of the flue-brush shown in figs. 1, 2, 3, the material employed in the brush—straw, slivers of hickory, or other suitable material—is laid upon the clamping-plate C, which rests upon the lock-nut F, when the layers of brush-material have been laid about the handle, in a radial direction, the brush-material being of such length that the brush may be round, square, or of other form adapting it for use in cleansing circular boiler-flues or chimney-flues. The clamping-plate C′ is located in place, as shown in fig. 1, the bolts E are tightened, and finally the lock-nut F′ is screwed down to its seat, clamping the brush-material at the centre.

By means of the thimbles B, used in coupling together sections of the brush-handle, any desired length may be given thereto.

The tubular handle which I employ is much lighter, and also proportionally stronger than the rod now in use.

What I claim as new, and desire to secure by Letters Patent, is—

The clamping-plates C C′, and the bolts E, when the same are constructed and arranged substantially in the manner herein shown and specified.

P. H. RYAN.

Witnesses:

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