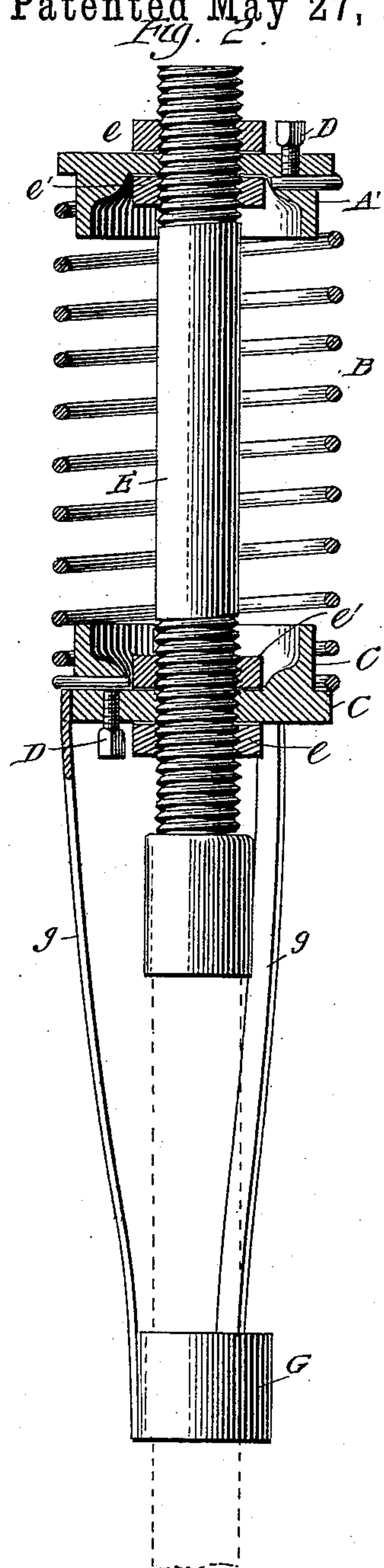
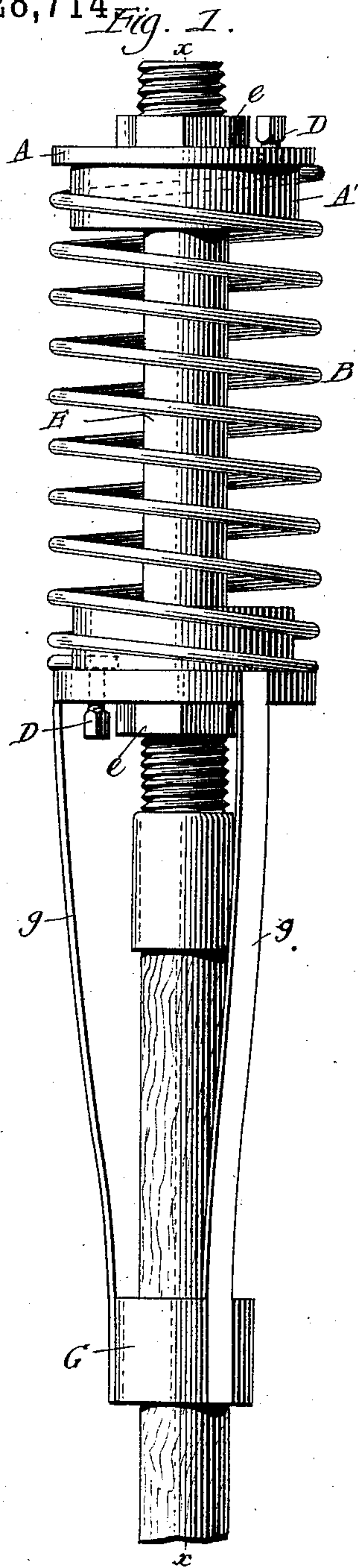


(No Model.)

T. BURKE.
BOILER FLUE SCRAPER.

No. 428,714

Patented May 27, 1890.



WITNESSES:

Charles F. Carter
Frank Williams.

INVENTOR:

Thomas Burke
BY his Attorney
Norris A. Clark.

UNITED STATES PATENT OFFICE.

THOMAS BURKE, OF FORDHAM, NEW YORK.

BOILER-FLUE SCRAPER.

SPECIFICATION forming part of Letters Patent No. 428,714, dated May 27, 1890.

Application filed October 22, 1889. Serial No. 327,820. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BURKE, a citizen of the United States, and a resident of Fordham, county of New York, and State of New York, have invented a new and useful Improvement in Boiler-Tube Scrapers, of which the following is a specification.

This invention relates to a combined brush and scraper for cleaning pipes and tubes, being especially designed for the flues and tubes of tubular boilers.

The object of the invention is to provide a series of yielding scrapers which will expand and bear against the sides of the tubes and yield when passing over unyielding obstructions or contracted portions of the said tubes. These series of scrapers are connected together, being formed of a single wire which is bent to form a helix, the coils forming independent scrapers.

A further object of the invention is the provision of a scraper which will be efficient and perform its work in a rapid manner without scoring or scratching the tubes, and which will not choke or become clogged and will be compact and durable.

The improvement consists in the peculiar construction and combination of parts, which will be hereinafter more fully described and claimed, and which are shown in the accompanying drawings, in which—

Figure 1 is a side view of a scraper embodying my invention. Fig. 2 is a vertical central section on the line X X of Fig. 1.

The two head-plates A and C are centrally operated to receive the rod E, and have flanges A' and C', respectively, each plate being held on the rod E by a pair of nuts e e', which are placed on opposite sides of and clamp the plates between them.

The helical scraper or brush B is compressed between the heads A and C, the ends thereof encircling the flanges A' and C' of the head-plates by having their ends inserted through openings in the flanges A' and C', as shown, and clamped in said openings by jam-screws D. By thus securing the ends of the wire the brush may be very quickly inserted in place between the heads A and

C or removed therefrom. The wire may also be held at its extreme end or some distance therefrom, so that the diametrical size of the brush may be varied slightly in this way. This fastening is also advantageous in case the brush should be broken, in the event of which it may be quickly removed and replaced by a fresh spring. This brush may be formed from any gage of wire, and is slightly larger in diameter than the head-plates, so that its edges will rub against the sides of the tubes. For light work a brush of light-gage wire will be provided, and for heavy work a brush of heavy-gage wire will be employed. The wire which is used in the construction of the brush is of a springy nature, and is circular in cross-section, so that when in use it will have a light elastic contact with the interior of the flue or tube, and will thereby accommodate itself to any irregularities of the tube, and in addition to this the brush will not score or scratch the interior of the flue.

The guide-sleeve G, located at some distance from head-plate C, is connected with said head-plate by rods g, which are between said sleeve and plate C. The rods g are set in flush with the periphery of plate C, so as not to score the tubes.

The brush can be expanded and contracted in diameter by adjusting the nuts e and e' on the rod E, as will be readily understood.

I am aware of the construction of the respective scrapers described and illustrated in Letters Patent to Gladding, No. 264,826; Christoffel, No. 138,317; Hobday, No. 127,237; Thomas, No. 390,822, and Coyle, No. 91,523, and I make no claim to the same.

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

1. The combination, with the rod and the helical brush, of the flanged head-plates, the ends of the brush inserted in openings in the said flanges, and the jam-screws passing into said flanges and clamping the ends of the brush, substantially as described.

2. The hereinbefore-described brush, comprising rod E, head-plates A and C, held on

rod E between pairs of nuts and having
flanges A' and C', the helical brush B, having
its ends encircling the flanges on the head-
plates and held to said flanges by jam-screws,
5 the sleeve G, and the brace-rods *g*, substan-
tially as set forth.

In testimony that I claim the foregoing as

my invention I have signed my name, in pres-
ence of two witnesses, this 9th day of Octo-
ber, 1889.

THOMAS BURKE.

Witnesses:

EDWD. P. STEERS,
ANTONIO RASINES.