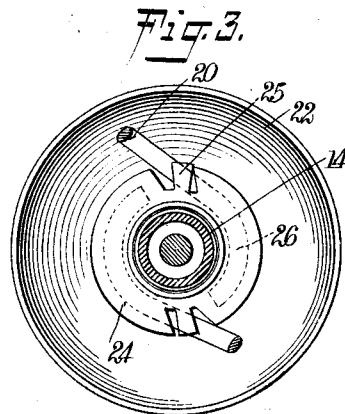
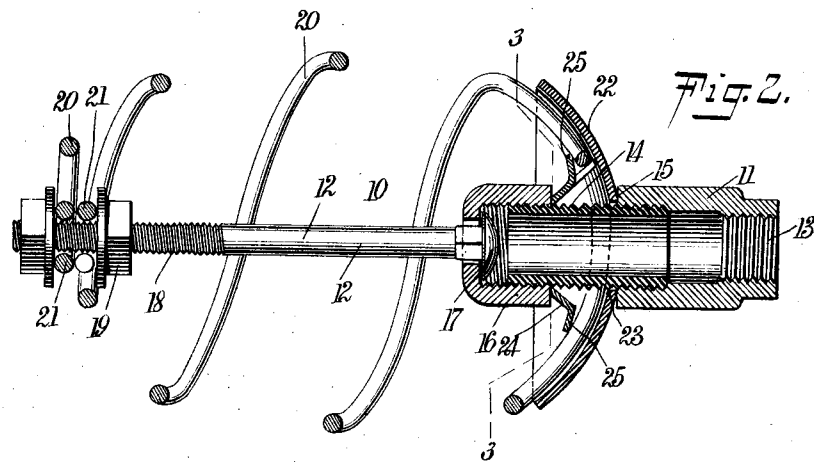
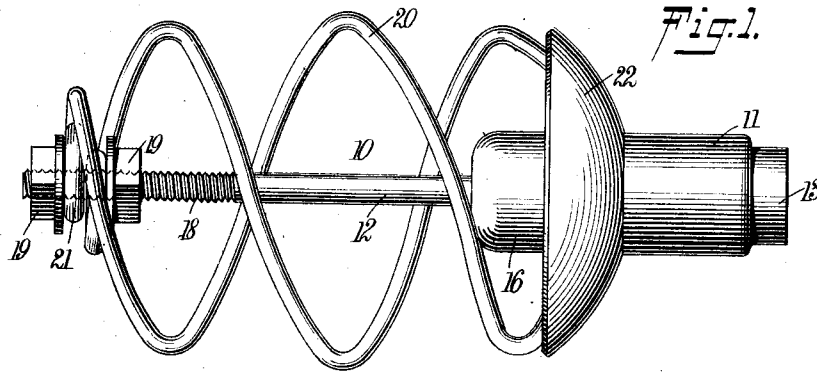


G. C. FRENCH.
FLUE CLEANER.
APPLICATION FILED OCT. 18, 1911.

1,051,323.

Patented Jan. 21, 1913.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE C. FRENCH, OF ELDORA, IOWA.

FLUE-CLEANER.

1,051,323.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Application filed October 18, 1911. Serial No. 655,255.

To all whom it may concern:

Be it known that I, GEORGE C. FRENCH, a citizen of the United States, and a resident of Eldora, in the county of Hardin and State of Iowa, have invented new and useful Improvements in Flue-Cleaners, of which the following is a full, clear, and exact description.

This invention relates to flue cleaners for freeing the flues of boilers and other apparatus from accumulations of soot, scale and the like, and has reference more particularly to a flue cleaner which comprises an elongated flexible body having an adjustable scraper mounted thereon.

The object of the invention is to provide a simple, strong and durable flue cleaner by means of which accumulations of soot, scale or the like in boiler or other flues, can be easily and expeditiously removed, which can be adjusted to adapt it for use with flues of different dimensions, which will not readily become clogged when in use, which serves to loosen the accumulation and to remove it from the flue, which is flexible, so that it will adjust itself to irregularities of form in the flues, and which is so constructed that after passing through the flue it will readily guide itself back into the flue on being withdrawn.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a side elevation of a flue cleaner constituting an embodiment of my invention; Fig. 2 is a longitudinal section of the device; and Fig. 3 is a transverse section on the line 3—3 of Fig. 2.

Before proceeding to a more detailed explanation of my invention, it should be clearly understood that the present form of the cleaner constitutes an improvement upon that shown in my United States Patent No. 844,928, dated February 19th, 1907.

It will be noted that in the present form of the device I employ a flexible body upon which the adjustable scrapers and the follower are mounted, as I have found this type of body to possess distinct advantages.

Others of the structural details have also been altered. Certain of the details of con-

struction, however, shown for example herewith, form no part of the invention can be varied in accordance with individual preference and special conditions, without deviating from the spirit of the invention as defined in the appended claims.

Referring more particularly to the drawings, I employ an elongated body 10, which comprises a member 11, and a bolt rod 12. The member 11 consists of a pipe 13, having a reduced threaded end by means of which the cleaner can be conveniently attached to a rod or other suitable manipulating handle. A threaded nipple 14 is screwed into the inner end of the pipe 13 forming a shoulder 15 on said inner end. Removably mounted upon the nipple 14 is a cap or socket nut 16, which receives the head 17 of a bolt 12. The socket nut and the bolt rod head constitute, in effect, a universal joint, as the head has considerable play, so that the body 10, as a whole, is flexible. The free end 18 of the rod 12 is threaded, and has mounted thereon adjusting nuts, 19, for a purpose which will appear hereinafter.

I employ scrapers 20, fashioned from wire or other suitable, elongated material, and bent into helical shape. In the previous form of my invention the scraper, consisting of a double helix, was fashioned from a single strand of wire or the like. In the present type of the cleaner however, I employ two separate helical scrapers each having at one end an eye 21 by means of which it is secured upon the bolt rod, between the adjusting nuts 19. The follower 22, consisting of a rounded member having a substantially central opening 23, is mounted upon the nipple 14, between the shoulder 15 and the socket nut. The follower is preferably of spherical curvature, and slightly smaller in diameter than the scraper. A conical washer 24 is positioned between the socket nut and the follower, and has offset lugs forming edge recesses to permit the curved ends 26 of the scrapers to be inserted between, and clamped in place by the washer and the follower.

As in the previously patented form of my cleaner, the effective diameter of the scraper in the present type can be varied by adjusting the nuts 19 to spread or reduce the scraper coils. These parts of the device serve to loosen the soot or other accumulations from within the flue, the follower pushing the loosened accumulations along

the flue and out at the end of the same. The rounded back of the follower serves to guide the cleaner back into the flue when the device is being withdrawn.

5 Having thus described my invention, I claim as new, and desire to secure by Letters Patent:

10 1. In a flue cleaner in combination, a body formed of two parts having a loose joint permitting the angular relative movement of said parts, a flexible, helical scraper, and adjustable means on said respective parts of said body, to secure said scraper to said body.

15 2. A flue cleaner comprising a body consisting of two parts, the first of said parts having a reduced extension and an open-ended socket member mounted upon said extension, a follower mounted upon said reduced extension and held in place by said socket member, the second of said parts having a head received in said socket member, and being movably held in position relative to said other part thereby, a helical 25 scraper having one end secured to said follower and having the other end mounted upon the second of said parts, and means for adjustably securing said scraper relative to said parts.

30 3. A flue cleaner comprising a body consisting of a member having a reduced threaded part, a socket nut screwed upon said threaded part, and a bolt rod having a

head located within said socket nut, said member being provided with a shoulder, a 35 follower positioned upon said member between said shoulder and said socket nut, and a helical scraper having one end adjustably secured to said bolt rod and having the other end secured to said follower. 40

4. A flue cleaner comprising a body consisting of a member having a reduced, threaded part, a socket nut screwed upon said threaded part, and a bolt rod having a head located within said socket nut, said 45 member being provided with a shoulder, a follower positioned upon said member, between said shoulder and said socket nut, and consisting of a rounded member, a conical washer clamped between said follower 50 and said socket nut, said bolt rod having a threaded portion, a helical scraper having an eye positioned upon said threaded part of said bolt, and having an end clamped between said follower and said washer, and 55 nuts upon said threaded part of said bolt, for securing said eye of said scraper adjustably in position.

In testimony whereof I have signed my name to this specification in the presence of 60 two subscribing witnesses.

GEORGE C. FRENCH.

Witnesses:

HOWARD E. MOFFETT,
MATTHEW D. KENNEDY.