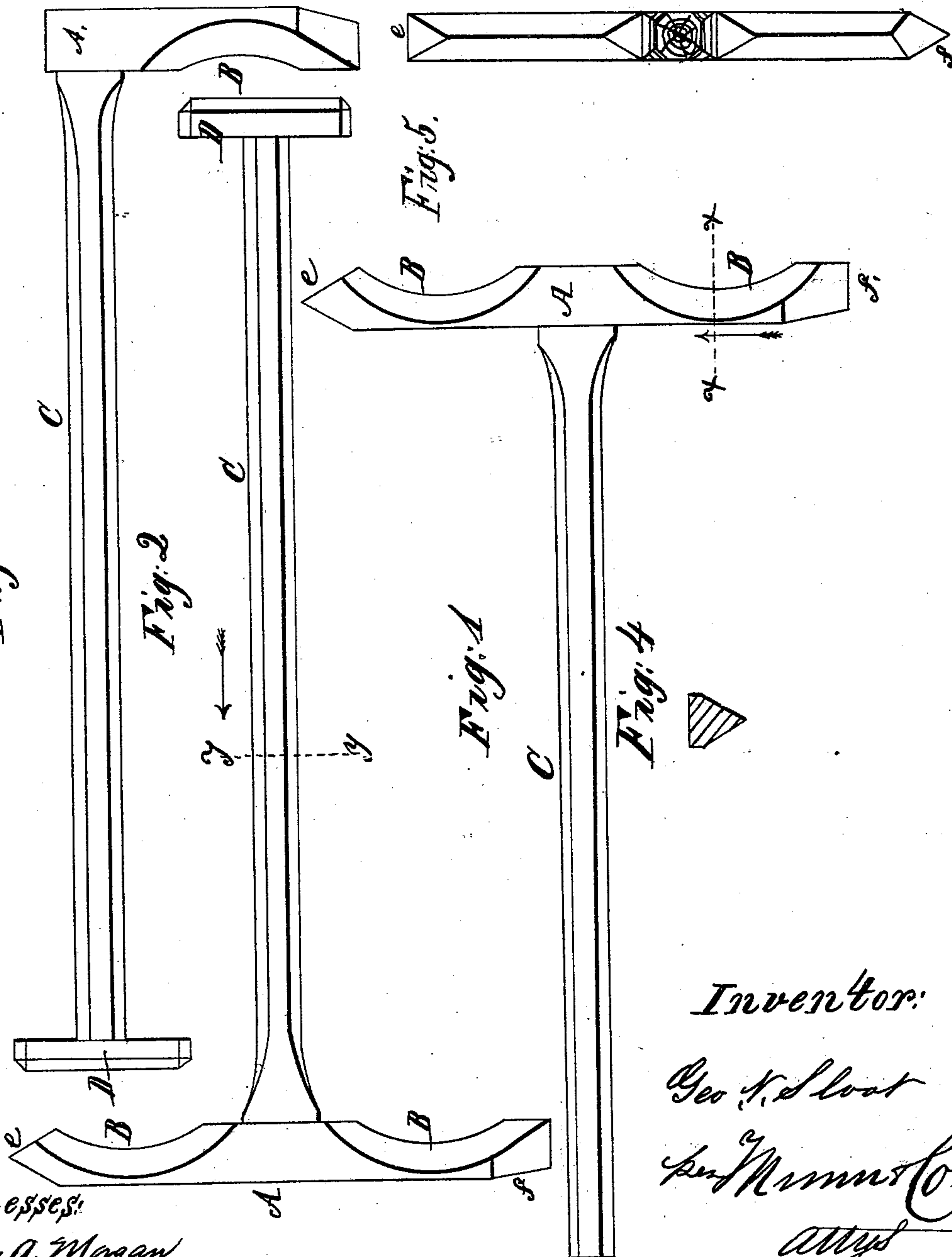


G. V. Sloat,

Steam-Boiler Cleaner.

N^o 84,587.

Patented Dec. 1, 1868.



Witnesses:

Wm. A. Morgan
G. L. Cotton

Inventor:
Geo. V. Sloat
per Wm. A. Morgan
attys

United States Patent Office.

GEORGE V. SLOAT, OF MORRISANIA, NEW YORK.

Letters Patent No. 84,587, dated December 1, 1868.

IMPROVEMENT IN BOILER-FLUE CLEANERS.

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

To all whom it may concern:

Be it known that I, GEORGE V. SLOAT, of Morrisania, in the county of Westchester, and State of New York, have invented a new and useful Improvement in Scaling-Tools; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to tools which are designed for use in the operation of clearing the fire-flues of steam-boilers of the scale or hardened sediment which is deposited on the outer surface of such flues; and

It consists in the construction of tools or instruments whereby access is obtained to both the upper and lower portions of the flue, as will be hereinafter more fully described.

In carrying out my invention, it is necessary to provide a set of the tools, all constructed and operating in a similar manner, but adapted by their particular shape to operate on the scale deposited on different parts of the flue, and on flues in different situations.

The invention is more especially designed to be applied to marine-boiler flues, where salt and impure water is used, and scale formed to a greater extent than on flues of land or stationary boilers.

The only means heretofore employed to loosen this scale or hard coating of mineral substances, which forms on the flues, is by a bar with a chisel-end, which is used to good advantage where such a tool is applicable.

Wherever the scale can be reached by the chisel, it will be cut and the chips loosened.

But as the flues in most marine boilers of the present day are placed in horizontal rows, forming large clusters or sections, one flue directly above another, it is evident that the chisel could not reach the scale on the upper and the lower sides of the flues. Consequently the scaling or chipping of the flues has been an incomplete operation.

The object of my invention is to provide means for perfecting it, thereby not only preserving the steam-generating surface due to the boiler, but protecting the flues from injury from the presence of a non-conductor of heat.

Figure 1 is a tool for cutting the scale on the upper sides of the flues.

Figure 2 is made to operate on the scale on the under sides of the flues.

Figure 3 is for the same purpose, to be applied to the outer tier of flues.

Figure 4 is a cross-section through the line *x x*.

Figure 5 is a longitudinal view of the head of the tool, looking in the direction of the arrow of fig. 2, from the line *y y*.

Similar letters of reference indicate corresponding parts.

The tools are in the *r*-form.

A is the steel head, with one or more cutting-edges marked B.

C represents the iron shanks, which may be of any desired length and size.

To operate with the tool, the head A is passed down between the flues, and parallel therewith, to any desired space between two horizontal rows of tubes, when it is turned so that it will stand transversely thereto. When a hammer is used on the end of the shank C, the edges B will penetrate and loosen the scale.

In operating with fig. 2, on the under side of the flues, the hammer is used on the under side of the cross-piece D, when the effect is the same.

The loosened scale is scraped off from the upper sides of the flues, and falls down into the body of the boiler, from whence it is readily removed.

The ends of the head A are also brought to an edge in the form of cold-chisels, as seen at *e* and *f*, for using on the heads of the boiler, or on other surfaces, for removing the scale.

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

The chipping-head A, with one or more cutting-edges B, on either side of head B, when arranged in reference to the shank C and cross-piece D, substantially as described.

The above specification of my invention signed by me, this 21st day of August, 1868.

GEO. V. SLOAT.

Witnesses:

FRANK BLOCKLEY,
ALEX. F. ROBERTS.