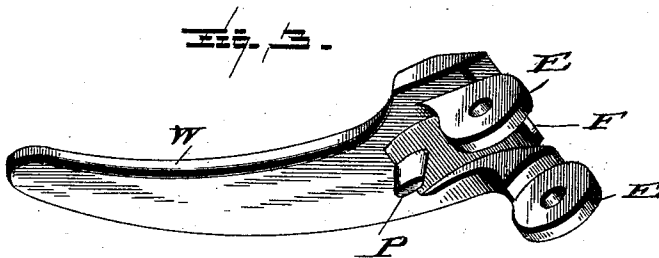
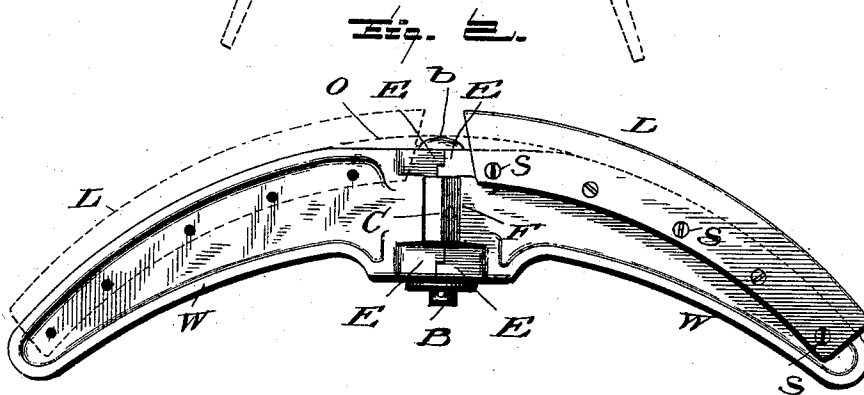
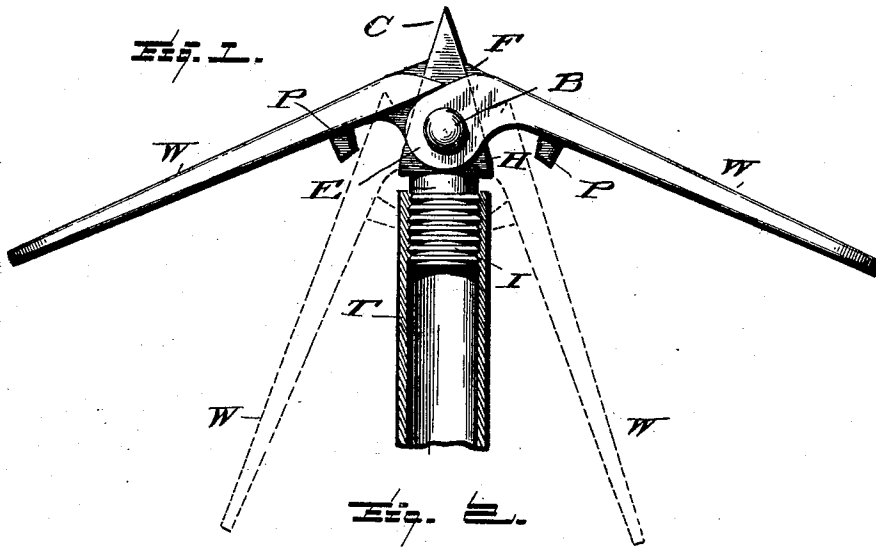


(No Model.)

G. E. TRUAX.
STEAM BOILER CLEANER.

No. 487,651.

Patented Dec. 6, 1892.



Witnesses:

L. C. Hills.
J. A. Johnson Jr.

Inventor:

George E. Truax.
Collamer & Co.
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE E. TRUAX, OF DENVER, COLORADO.

STEAM-BOILER CLEANER.

SPECIFICATION forming part of Letters Patent No. 487,651, dated December 6, 1892.

Application filed August 6, 1892. Serial No. 442,348. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. TRUAX, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Steam-Boiler Cleaners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in art to which it appertains to make and use the same.

This invention relates to steam-boilers, and more especially to the cleaners therefor, which scrape the interior of such boilers; and the object of the same is to produce an improved device of this character.

To this end the invention consists in a cleaner substantially of the construction hereinafter more fully described and claimed, and as illustrated on the accompanying sheet of drawings, wherein—

Figure 1 is a side elevation of this device complete, showing the wings in dotted lines as folded, as for the insertion of the cleaner.

Fig. 2 is a front elevation of the device in operative position and with one leather in position and the other removed. Fig. 3 is an enlarged perspective detail of one of the wings.

Devices of this character have heretofore been made wherein parts were adapted to be thrown out laterally to the stem or handle by springs or by supplementary means connected with or standing along the handle. Bristles, wisps, and wire have also been used to scrape the interior of boilers or their tubes. I am not aware that automatically-folding wings have ever been heretofore employed, nor that such wings have been provided with laterally-projecting detachable leather scrapers.

Referring to the accompanying drawings, the letter H designates a head having a screw-threaded inner end I whereon may be passed the outer end of a tubular handle or stem T. The remaining portion of this head is squared, as shown, and tapered laterally to a chisel-point C at its front end, obviously for the purpose of chopping the crusts which may exist at the end of the boiler, or by turning the handle, boring such crusts off the boiler-head.

W W are two wings which are practically duplicates and a description of one will suffice for both. The blade of the wing is curved laterally, as shown, and preferably tapered slightly to its outer end, and at its inner end it carries two ears E, which are deflected to the rear, arranged to break joint with those on the other wing, and adapted to stand astride the square body of the head H. A bolt B is then passed through the four ears and the head, whereby the wings are pivotally connected therewith. I say a "bolt," although a rivet may be used; but in any event the head b of the bolt or rivet which stands adjacent the outer side of the wings must come within the line of a true arc inscribed by such outer side when the wings are open. This arc corresponds with the interior curvature of the boiler, as seen in dotted lines in Fig. 2. Of course such arc may be greater or smaller than shown, according to the size of the boiler to be cleaned. When folded back or closed, pins P on the inner faces of the wings strike against the opposite sides of the head or handle, as seen in dotted lines in Fig. 1, and prevent the wings closing too far. When open, the front ends F of the wings, between their ears E, strike against the opposite sides of the beveled portion of said head for the purpose of preventing the wings opening too far.

The device so far constructed is of any suitable size and proportion of parts, and preferably of iron. In use, an ordinary piece of gas-pipe is screwed upon the inner end of the head to form a handle or staff, the wings folded or closed, and the whole inserted in the boiler from one end. After passing the cleaner down the length of the boiler and using the sharp or chisel end C of the head, as may be desired, the handle is drawn upon quickly. The effect is that the wings, which already stand slightly out from the handle by reason of the pins P, are brought frictionally against some adhering portions or scales within the boiler and are caused to open to the position shown in full lines in Fig. 1, after which the whole is drawn toward the operator and the outer edges of the wings which follow the interior curvature of the boiler clean the same

thoroughly. The fact that the wings do not open completely affords a bracing force to hold them against the resistance offered in the same manner as does a canal-lock. If the boiler be of different circumference, other wings may be substituted, and any of them may be detached for cleaning or repair by removing the bolt B. The head of the latter does not strike the boiler because the outer curve of the wings is slightly flattened, as seen at O in Fig. 2, and the result is that the bolt-head stands slightly within the arc-line in the chord thus produced.

In conjunction with the cleaning devices above described, I preferably employ the following scrapers adapted for detachable attachment to the outer faces of the wings, because after the scales have been thoroughly removed there often remains a certain dust, as of rust, &c., which it is desirable to remove, but which is too fine to be acted on successfully by a metal cleaner.

L L are leather scrapers whose outer edges follow the same curve as the outer edges of the wings, and hence are not parallel therewith, as seen in Fig. 2. One pair of these scrapers goes with each pair of wings, and the scrapers may be replaced or renewed when destroyed by wear. In material they are preferably of stiff leather, though other substances may be found to serve equally well, or even better. Each scraper is secured to the outer face of its wing in any suitable and detachable manner, preferably by screws S, about as shown. After the scales have been removed by the wings the device is withdrawn and the cleaning-leathers applied. Then the device is reinserted and the interior of the boiler carefully wiped or cleaned with these scrapers. Obviously if their outer edges, which project beyond those of the wings, were struck on a greater curve or on a less curve than that of the wings they would not accurately fit the interior of the boiler. Hence I have made them as shown.

I do not limit myself to the use of these cleaners at all times; but I consider them preferable in connection with the automatically-closing wings, above described, and

when used on such wings the action of the latter is not changed.

What is claimed as new is—

1. A boiler-cleaner comprising a head secured to the end of a handle and having its body squared and its front end reduced to a chisel edge and curved wings pivoted at their inner ends to opposite sides of said squared portion, as and for the purpose set forth.

2. A boiler-cleaner comprising a head mounted on a handle and having a squared body tapered to a chisel edge at its front end, curved wings having inwardly-extending ears standing at the sides of said body, and a pivot-bolt through said ears and body, the inner ends of said wings between the ears striking the sides of said chisel before the bodies of the wings align, as and for the purpose set forth.

3. A boiler-cleaner comprising a head having a square body tapered to a chisel edge at its front end, curved wings having inwardly-extending ears standing alongside said body, a pivot-bolt through said ears and body, the inner ends of said wings between their ears striking the sides of said chisel before the bodies of the wings align, and pins on the inner faces of the wings, adapted to strike said head before the wings are folded to positions parallel with the length of the head, as and for the purpose set forth.

4. In a boiler-cleaner, the combination, with a head having a chisel-point and two wings pivoted thereto, one edge of the wings when open forming an arc of a circle slightly flattened opposite said pivot, whereby the pivot-bolt stands within said arc, of two scrapers detachably secured to said wings and projecting beyond their curved edge, the projecting edge of the scrapers forming an arc of the same circle as the edge of the wings, as and for the purpose hereinbefore described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE E. TRUAX.

Witnesses:

JAMES A. KILTON,
MASON B. CARPENTER.