W. H. PHILLIPS.

FLUE STUB EXTRACTOR.

APPLICATION FILED OCT. 1, 1914.

1,151,712. Patented Aug. 31, 1915.

Fig. 1.

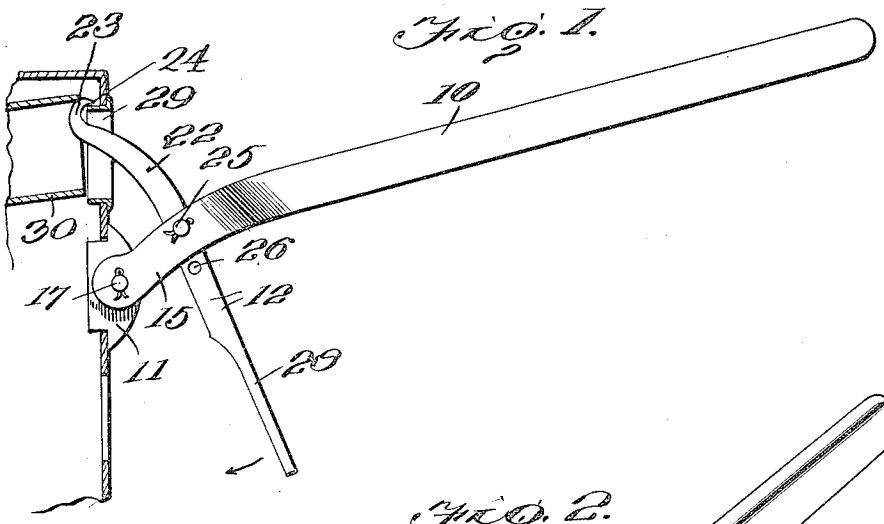
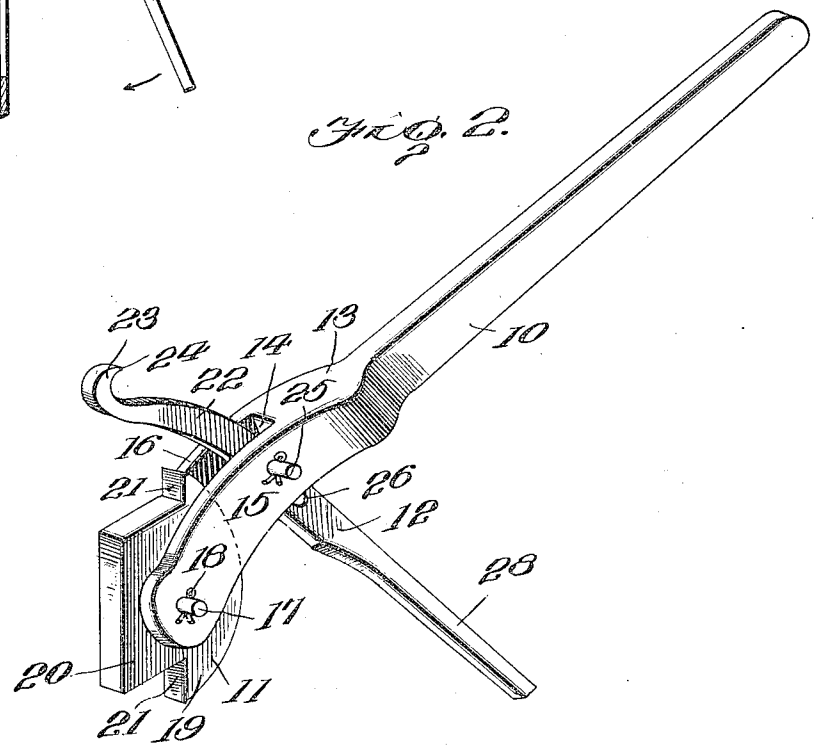


Fig. 2.



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FLUE-STUB EXTRACTOR.

1,151,712. Specification of Letters Patent. Patented Aug. 31, 1915.

Application filed October 1, 1914. Serial No. 864,476.

To all whom it may concern:

Be it known that I, WILLIAM H. PHILLIPS, citizen of the United States, residing at Fairmont, in the county of Richland and State of North Dakota, have invented certain new and useful Improvements in Flue-Stub Extractors, of which the following is a specification.

My invention relates to new and useful improvements in tools of the type employed in extracting the stubs from a boiler flue sheet.

The principal object of my invention is to provide a device of this character which may be easily and quickly applied to the stubs of a flue sheet and will, when properly manipulated, extract the stubs without injuring the flue sheet.

A further and more specific object of my invention is to provide a flue stub extracting tool which consists essentially in a lever having a pivotally mounted head adapted to seat in one of the stubs and a hook member which is pivoted to the lever and is adapted to be engaged with the flue stub immediately adjacent to the stub in which the head is inserted.

Another object of my invention is to construct the tool with such regard to proportion, number and arrangement of parts that it may be cheaply manufactured and will be efficient in service.

The above recited and other incidental objects of a similar nature, which will be hereinafter more specifically treated, are accomplished by such means as are illustrated in the accompanying drawings, described in the following specification, and then more particularly pointed out in the claims, which are appended hereto and form a part of this application.

With reference to the drawings, wherein there has been illustrated the preferred form of this invention as it is reduced to practice, and throughout the several views of which similar reference characters designate corresponding parts,

Figure 1 is a detail view in side elevation of the tool applied to a flue sheet. In this figure the flue sheet and stub are shown in section to more clearly illustrate the manner in which the tool is applied to the flue sheet; and Fig. 2 is a detail perspective view of the tool.

As shown in Fig. 1 particularly of the accompanying drawings, my invention in its preferred embodiment includes as its essential elements, a lever or handle 10, a head member 11 and a cant hook 12.

The handle member 10 is formed of steel or some equally durable metal, as are the members 11 and 12. The one terminal of the member 10 is thickened, as indicated at 13, and is bifurcated, as at 14, producing the parallel longitudinally curved arms or plates 15 and 16. Between these members 15 and 16, and at the terminals thereof, is rotatably mounted on a pin or axle 17 the head member 11. A cotter pin, indicated at 18, is, of course, employed in connection with the member 17.

The head member 11 is formed in the nature of a flat plate, the body portion 19 of which is substantially semi-circular and carries a substantially rectangular projection 20 which extends from its straight edge. The straight edge portions 21 of the body member 19 constitute shoulders which are adapted to engage against the face of the flue sheet when the projection 20 is inserted therein, as shown in Fig. 1 particularly. It is now to be explained that the dimensions of the head member 11 are such that the projection 20 will enter any flue stub having a diameter within the range of ordinary boilers. The straight edge portions 21 are long enough to accommodate the head member 11 to flue stubs of different diameters.

The cant hook 12 is terminally curved, as at 22, and is formed into a hook 23 provided with a relatively sharp point 24. An axle 25 is employed in pivotally securing the intermediate portion of the member 12 within the bifurcation 14 at the inner terminal thereof. A plurality of openings 26 are preferably provided in the member 12 so that the hook 23 may be positioned at different effective distances from the head member 11 by inserting the pin 25 in the different openings 26.

The actual construction and arrangement of the several parts of my tool being thus described, it now remains to explain briefly the manner in which the tool is employed in extracting a flue stub. Reference will now therefore, be had particularly to Fig. 1, in which the tool is shown in operative relation to a flue sheet. As shown in this figure, the flue tube 30 is first severed adjacent to the flue sheet by means of a rotary cutter such as is ordinarily employed when flue stubs are removed. After

the stub 29 has been severed from the tube, the projection 20 of the head member 11 is inserted through one of the adjacent flue openings so as to engage the straight edge portions or shoulders 21 against the outer face of the flue sheet. The reduced terminal 28 of the member 12 is then manipulated to engage the hook 23 over the rear edge of the cut flue stub 29. When thus applied, the hook 23 seats in the cut between the stub 29 and the terminal of the flue tube 30. Obviously, when the hook is applied as shown in Fig. 1, the forcing of the handle 10 downwardly will cause the point of the hook to force the inner edge portion of the stub 29 away from the flue sheet when severed. Subsequent to the entrance of the point of the hook between the stub and the flue tube, the continued downward movement of the handle 10 will result in the complete removal of the stub by the hook.

In reduction to practice, it has been found that the form of this invention illustrated in the drawings, and referred to in the above description as the preferred embodiment, is the most efficient and practical; yet realizing that the conditions concurrent with the adoption of this device will necessarily vary, it is desirable to emphasize the fact that various minor changes in details of construction, proportion and arrangement of parts may be resorted to, when required, without sacrificing any of the advantages of this invention, as defined in the appended claims.

Having thus described the invention, what is claimed as new is:—

1. A device of the character described including a handle member, and a longitudinally adjustable cant hook pivoted thereto.

2. A device of the character described including a handle member having a terminal bifurcation, a cant hook pivoted intermediate of its length in the bifurcation, and a head member pivoted within the bifurcation at the outer terminal thereof.

3. A device of the character described including in combination a handle, a pivoted head carried by the handle, and a cant hook pivoted to the handle.

4. A device of the character described including in combination a handle, a pivoted head carried by the handle, and a cant hook pivoted to the handle rearwardly of the head member.

5. A device of the character described including a body member, said body member being terminally bifurcated producing parallel spaced arms, a cant hook pivoted between the arms adjacent to the inner terminal of the bifurcation, and a head member pivoted between the arms at their outer terminals, said head member including a substantially semi-circular body portion and a rectangular projection extending from the straight edge thereof.

6. A device of the character described including a body member, said body member being terminally bifurcated producing parallel spaced arms, a cant hook pivoted between the arms adjacent to the inner terminal of the bifurcation, and a head member pivoted between the arms at their outer terminals, said head member including a substantially semi-circular body portion, and a rectangular projection extending from the straight edge thereof, the terminals of the straight edge of the head member body portion constituting abutments for maintaining the body member in position when the device is in use, said head member serving as a fulcrum for the handle when the device is in use.

7. A device of the character described including a handle member, a cant hook having a plurality of spaced openings formed therein, and a pivot pin connecting the hook with the handle and adapted to selectively engage in said openings.

8. A device of the character described including a handle member, and a cant hook pivoted medially thereto.

9. A device of the character described including a handle member, a head providing a stop shoulder carried by the handle, and a cant hook adjustable longitudinally thereof upon the handle and pivotally connected thereto.

10. A device of the character described including a handle member, a head carried by the handle member, said head being formed with a projection providing an entering member and having laterally extending stop shoulders formed thereon at the inner extremity of said projection, and a cant hook pivotally mounted upon the handle member.

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

WILLIAM H. PHILLIPS. [L. S.]

Witnesses:
WM. DAHLQUIST,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."