(No Model.)

W. J. HALLIWELL & T. DONOHUE.

FIRE LIGHTING ATTACHMENT FOR STEAM ENGINES.

No. 496,156. Patented Apr. 25, 1893.

Fig. 1.

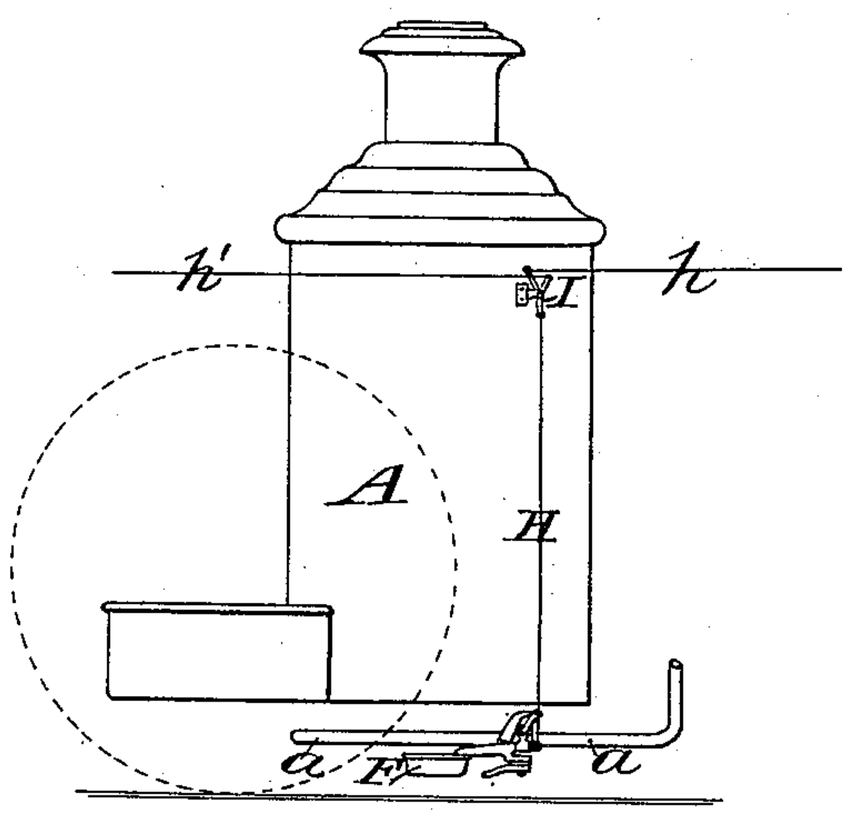


Fig. 2.

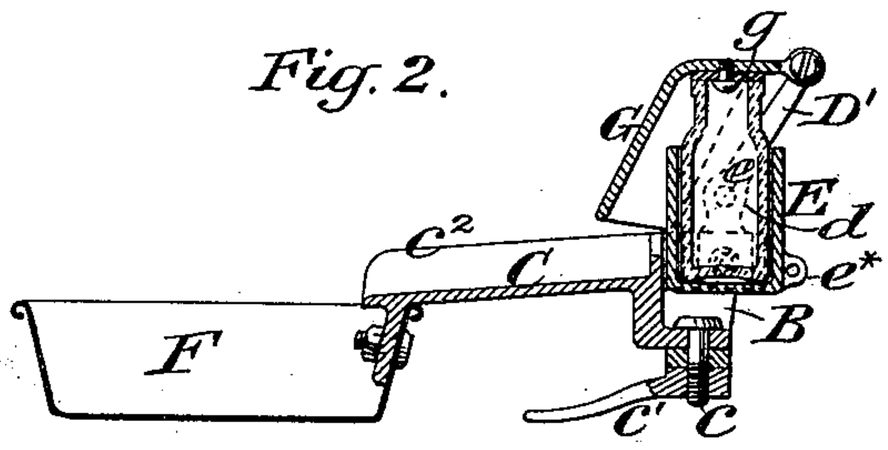


Fig. 3.

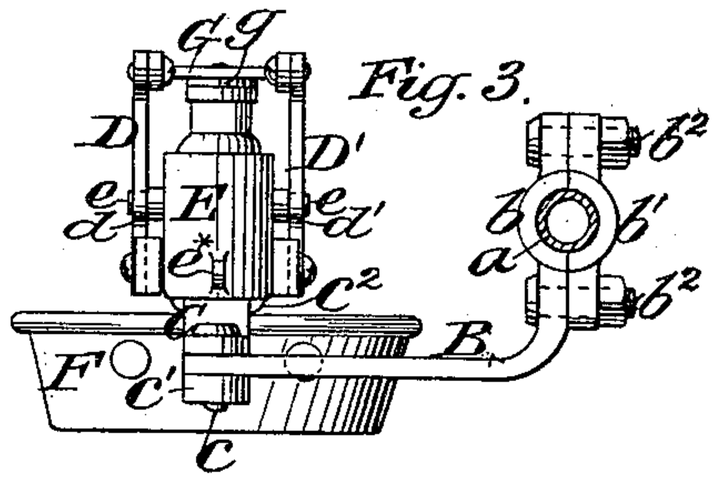


Fig. 4.

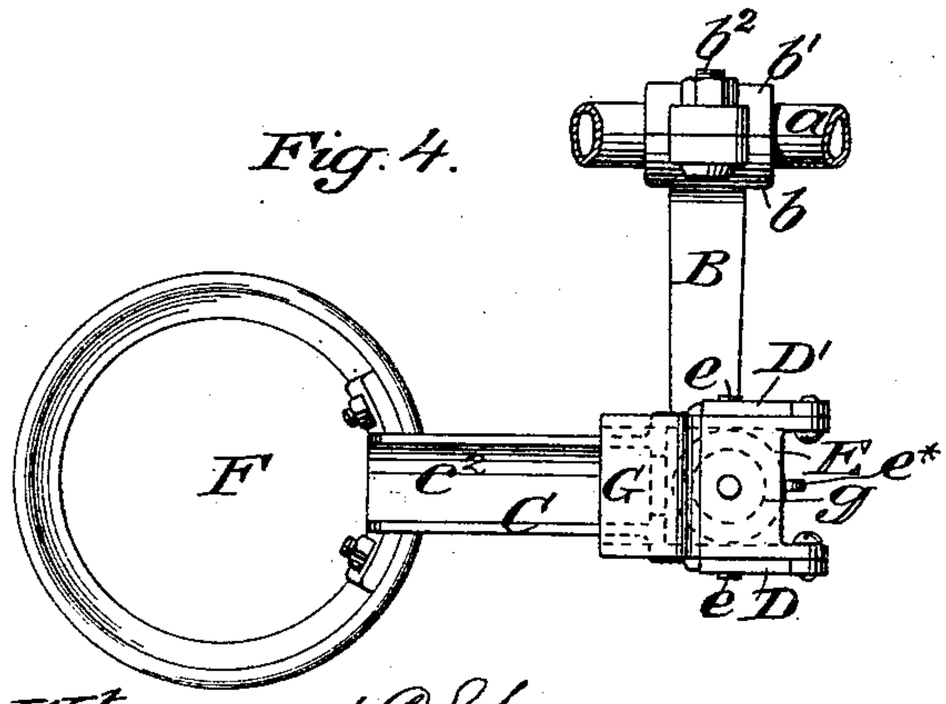
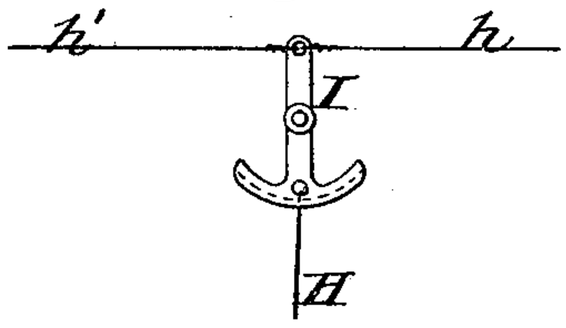


Fig. 5.



Witnesses { C. L. Sundgren, George Barry

Inventors: William J. Halliwell, Thomas Donohue, by attorneys Brown & Sewall

UNITED STATES PATENT OFFICE.

WILLIAM J. HALLIWELL AND THOMAS DONOHUE, OF PATERSON, NEW JERSEY.

FIRE-LIGHTING ATTACHMENT FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 496,156, dated April 25, 1893.

Application filed January 16, 1893. Serial No. 458,514. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM J. HALLIWELL and THOMAS DONOHUE, both of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Improvement in Fire-Lighting Attachments for Steam-Engines, of which the following is a specification.

Our invention relates to an improvement in fire lighting attachments for steam engines and more particularly to attachments for steam fire engines in which provision is made for starting a flame by the chemical combination of certain ingredients.

A practical embodiment of our invention is represented in the accompanying drawings in which—

Figure 1 represents in side elevation a portion of a steam fire engine as commonly constructed. Fig. 2 is an enlarged view in longitudinal vertical section of the fire lighter attachment. Fig. 3 is a view of the same in end elevation. Fig. 4 is a top plan view of the same, and Fig. 5 is a modified form of lever for operating the lighter.

The form in which we have chosen to illustrate our fire lighter is that adapted to use in connection with the steam fire engine as commonly built in which a spray pipe extends down the side of and under the bottom of the boiler and serves as a convenient support for securing the fire lighter thereto.

In the accompanying drawings A represents the boiler of the steam fire engine and a the spray pipe above referred to. A bent supporting arm B is provided at one end with a half bearing b adapted to receive the spray pipe at the point where it turns horizontally under the boiler and a removable half bearing b' is adapted to be secured to the arm B upon the opposite side of said spray pipe and drawn snugly into contact with the pipe by draw bolts b^2. The opposite end of the supporting arm B has pivotally secured thereto to swing in a horizontal plane a supporting trough and bracket C. The connection of the bracket C with the arm B is preferably made by extending a pivotal bolt c through the two parts and providing the pivotal bolt with a tail nut c' by means of which the bracket may be clamped in any desired horizontal adjustment. The bracket C is provided with a pair of supporting standards D, D′ between which a casing or pocket E is journaled, preferably by means of a pair of laterally extending trunnions e loosely mounted in bearings d, d' in the arms D and D′. From the position of the case or pocket E the bracket is provided with a trough c^2 which extends on a decline to a receptacle F secured to a depending lip at the trough end of the bracket.

The pocket or casing E is adapted to receive a bottle containing some suitable chemical, as for example sulphuric acid, and the receptacle F may in such case contain a mass of cotton waste saturated to a greater or less extent with oil. The bottle is kept normally covered by means of a combined shield and stopper G which is pivotally secured at its upper end to the upper ends of the standards D, D′ and extends thence over the mouth of the bottle where it may be provided with some suitable yielding pad g for effectively closing the mouth of the bottle and thence extending downwardly and outwardly toward the trough c^2.

An operating cord H leads from a lug or ear e^* on the casing E up to one arm of a rocking lever I and from the opposite arm of said lever operating cords h and h' lead forward and rearward into position to be readily grasped by either the engineer or driver.

The operation is as follows: When it is desired to start the fire in the boiler, as for example in connection with a steam fire engine, when the engine reaches a point sufficiently near a fire to allow time for getting up steam during the time of travel from that point to the fire, either of the cords h or h' may be pulled, the lever I thereby rocked and by its connection with the pivoted casing E the casing and the bottle therein will be tilted over with its mouth toward the trough c^2. As the bottle tilts it will free the stopper from its mouth and the liquid will be deflected by the shield G into the trough and upon reaching the cotton waste in the receptacle F will produce a flame which will light the fire in the boiler.

The connection of the bracket C with the arm B is such that the receptacle F may be swung outwardly from under the boiler out of the way when not in use or it may be removed

altogether from the arm B and the arm B may be removed at pleasure from the spray pipe.

While we have shown the attachment as connected to the spray pipe, we do not wish to be understood as limiting ourselves to such a support only as differently constructed engines might require various modifications in the support for the arm B.

What we claim is—

1. A fire lighter comprising a swinging bracket, a receptacle in which the flame is to be produced fixed to the swinging bracket, a tilting receptacle for a chemical, a conduit leading from the tilting receptacle to the receptacle in which the flame is to be produced, and means for tilting the chemical containing receptacle at pleasure, substantially as set forth.

2. In combination a suitable supporting arm, a swinging bracket secured to the arm and adapted to swing underneath and away from the fire chamber of a boiler, a receptacle fixed to the swinging bracket for containing the substance to be set on fire, a tilting chemical receptacle carried by the bracket, and an operating cord leading from the tilting receptacle to within convenient reach of the operator, substantially as set forth.

3. The fire lighter comprising a suitable support, a swinging bracket secured in horizontal adjustment to the support and provided with a trough, a receptacle fixed beneath the outlet end of the trough, a tilting casing or pocket adapted to receive a bottle, a swinging shield forming normally a stopper to the bottle when in position within the pocket, and means for tilting the casing or pocket at pleasure, substantially as set forth.

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