

C. E. THOMPSON.
Fire-Lighter for Engines.

No. 215,492.

Patented May 20, 1879.

Fig. 1.

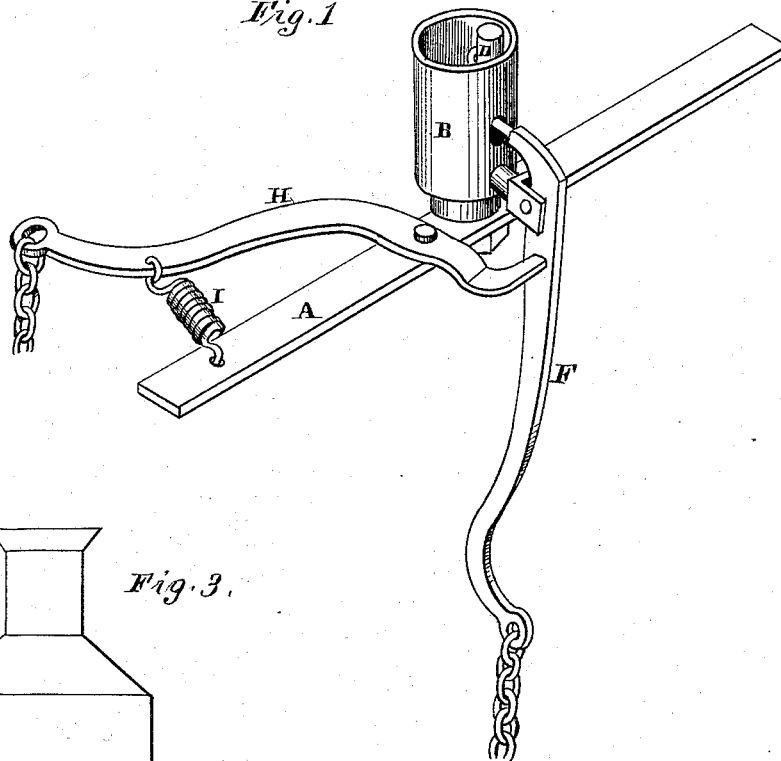


Fig. 3.

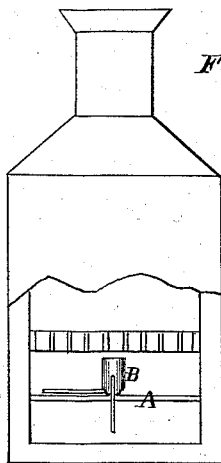
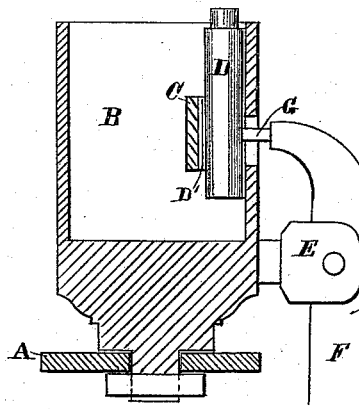


Fig. 2.



Witnesses

Geo. H. Strong.
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UNITED STATES PATENT OFFICE

CHARLES E. THOMPSON, OF STOCKTON, CALIFORNIA.

IMPROVEMENT IN FIRE-LIGHTERS FOR ENGINES.

Specification forming part of Letters Patent No. **215,492**, dated May 20, 1879; application filed August 9, 1878.

To all whom it may concern:

Be it known that I, CHARLES EDWIN THOMPSON, of Stockton, county of San Joaquin and State of California, have invented a Fire-Lighter for Engines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to a device for lighting the fires of engines, being more particularly intended to be applied to steam fire-engines, where it is necessary to start the fire quickly.

My improvements consist in mounting on a suitable bar under the grate of the boiler a cup containing certain chemicals, and placing in said cup a glass vial of liquid, which, when mixed with the chemicals in the cup, will generate a flame to light the kindlings in the fire-box. Levers are arranged to be operated from either end of the engine by means of cords, so that at the proper moment, by operating a lever, the glass vial containing the liquid will be broken and the liquid be mixed with the chemicals, so as to generate a flame.

Figure 1 is a perspective view of my invention. Fig. 2 is a section. Fig. 3 shows its application.

Let A represent a metal bar, which passes across under the grate of the fire-box, and is secured at the ends by means of bolts to the grate-frames or shell. On the center of this bar is mounted an iron cup, B, having on its inner side a recess, C, formed in such a shape that it will contain and hold in place a glass vial, D, while at the same time, in case the vial is broken, its contents will pass immediately into the large cup B. For this purpose the recess C has a slot, D', cut down it, through which the liquid may flow into the cup. On the outer side of the cup B is a lug, E, through which passes the fulcrum-pin of a lever, F, the upper end of said lever being turned at right angles, so as to form a point, G. A hole is made in the side of the cup B, through which the point G of the lever F projects, the end of said point coming opposite the recess C, in which the glass vial is placed. At the end of the long arm of the lever F is a ring or hook, to which a cord may be attached for operating the lever.

Another lever, H, is horizontally pivoted on the bar A, its short arm engaging with the long arm of the lever F, as shown, and its long arm being formed with a ring or hook, to which a cord may be secured.

A spring, I, is secured to the bar A and the long arm of the lever H, so as to draw the lever back into place after it is operated by the cord.

The operation of my device is as follows: The bar holding the cup is secured in place under the grate of the fire-engine, of which it forms a permanent fixture. In the cup B is placed any substance or mixture of substances which will take fire in contact with a liquid to be inclosed in the vial. A mixture, for instance, of chlorate of potash and sugar might be placed in the cup and sulphuric acid in the vial.

When it is desired to start up the fire, by pulling on the cord connecting with either of the levers, one leading to the front and the other to the rear of the engine, the point of the lever will be thrown against the glass vial, thus breaking it, and allowing its contents to flow into the chemicals in the cup. This ignites them, and the flame rising upward lights the kindling in the fire-box and starts the fire immediately.

This device is especially useful for steam fire-engines, where it is necessary that the fires shall be ignited quickly, so that steam may be raised by the time the conflagration is reached.

Frequently delay is occasioned in lighting the fires under the boiler, but with this device a sudden quick flame is thrown up among the kindlings and the fire started immediately.

This device is always ready for action, the cup and vial being filled each time when the engine returns to the house, ready for use on the next occasion.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The fire-box of a furnace, in combination with a chemical fire-igniting apparatus, for the purpose set forth.

2. The fire-box of a furnace and a chemical igniting apparatus, in combination with a lever or system of levers and connections to mix

the chemicals and put the igniter in operation from various parts of the engine, substantially as set forth.

3. The cup B and the interior vial D, fitted, as described, so as to be emptied of its contents by the point G, in combination with the lever F and cord leading to the driver's seat, substantially as herein described.

4. The cup B, with its contained fragile vial D, held so as to be broken or emptied of its contents by the action of a point, G, in combination with the levers F H, mounted upon the bar A across the ash-pit, and having cords leading to the front and rear of the en-

gine, respectively, substantially as and for the purpose herein described.

5. A fire-lighting device for engines, consisting of the cup B, with its contained vial D, mounted upon the bar A beneath the furnace, and having one or more levers, F H, and the operating-point G, whereby the contents of the cup and vial may be mixed and a flame produced, substantially as herein described.

In witness whereof I hereunto set my hand.

CHARLES EDWIN THOMPSON.

Witnesses:

FRANK A. BROOKS,

A. H. EVANS.