

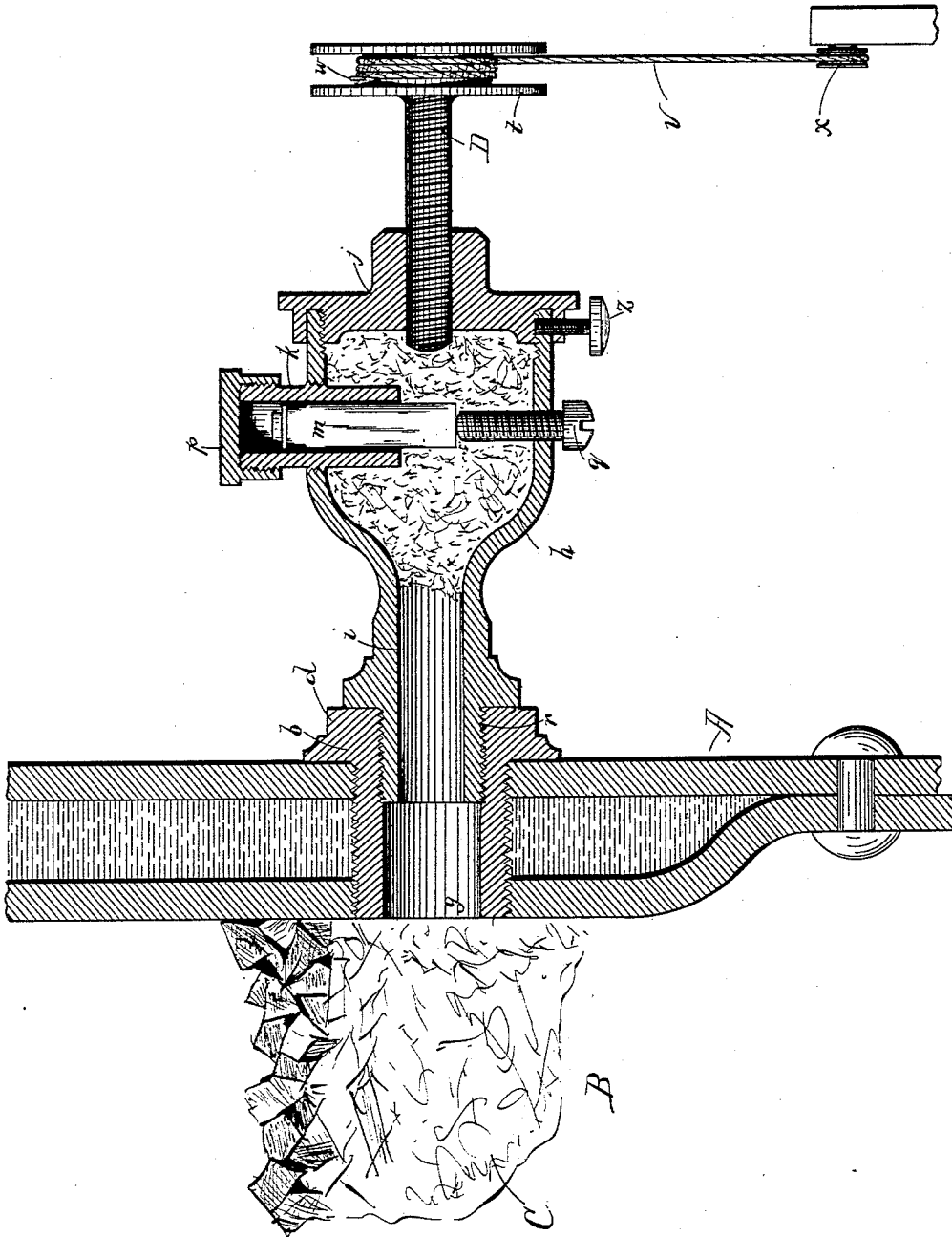
(No Model.)

S. C. JACKSON.

AUTOMATIC FIRE KINDLER FOR STEAM FIRE ENGINES.

No. 476,539.

Patented June 7, 1892.



WITNESSES

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SAMUEL C. JACKSON, OF HAVERHILL, MASSACHUSETTS.

AUTOMATIC FIRE-KINDLER FOR STEAM FIRE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 476,539, dated June 7, 1892.

Application filed July 6, 1891. Serial No. 398,508. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL C. JACKSON, of Haverhill, in the county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Automatic Fire-Kindlers for Steam Fire-Engines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

The figure in the drawing represents a vertical transverse section of a portion of the water-jacket or leg surrounding the fire-box of a steam fire-engine, showing my improved fire-kindling mechanism in position for use, such mechanism being represented in vertical longitudinal section.

My invention relates especially to mechanism for automatically igniting fuel in the fire-box of steam fire-engines as the engine leaves the engine-house; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawing, A represents the water-jacket or leg forming the wall of the fire-box B of an ordinary steam fire-engine. These parts being of the usual form and construction, it is not deemed essential to specifically illustrate or describe the same herein.

The jacket A, preferably in that portion slightly in advance of the rear wheel of the engine, is tapped laterally by an exteriorly-threaded tube *b*, provided with a head *d*. This tube projects through the jacket in such position that its inner end *g* is adjacent to the kindling C or more inflammable portions of the fuel in said fire-box.

The kindling device comprises a metallic chamber *h*, from one end of which a threaded tube *i* projects, which is adapted to be turned into the interiorly-threaded head *d* of the tube *b*, as shown at *r*. The upper end of the chamber *h* is closed by a screw-cap *j*. A vertically-

arranged tube *k* is turned into the top of the chamber *h*, said tube being of sufficient diameter to contain a detachable vial *m*, of glass or similar frangible material. The top of the tube *k* is closed by a screw-cap *p*. Vertically under the tube *k* a screw *q* is turned through the wall of the chamber *h* and serves as an adjustable support for the vial *m*. A screw-plunger D is fitted to work horizontally in the cap *j* of the chamber *h*, said screw being disposed in alignment with the tube *i* and in position to contact with the lower end of the vial *m*. The head of the plunger D comprises a grooved pulley *t*, upon which a cord *v* is wound, the end of the cord being detachably disposed on a pin *w* in the groove of said pulley in such manner that when the cord is unwound from said pulley its end will readily detach therefrom. The opposite end of the cord *v* is wound on a pulley *x*, located in any suitable position in the engine-house and has its end secured thereto. Said cord is of a length equal to or greater than the distance from the pulley *x* (which is located at the engine-stand within the house) to the engine-house door. In its normal position the plunger D is turned out in the cap *j*, as shown in the drawing, a set-screw *v* preventing said cap from rotating.

In the use of my improvement the chamber *h* is filled with a compound of chloride of potash and sugar and the vial *m* with vitriol. As the engine starts to leave the engine-house, the screw-plunger D is rotated by the cord *v* unwinding from its pulley *t*. Said plunger is thus driven forcibly against the vial *m*, crushing the same and permitting its contents to mingle with the filling of the chamber *h*, producing an instant explosion and flame, which is forced through the tube *i* against the fuel in the fire-box of the engine, igniting the same. The parts are so timed that the explosion takes place as the engine leaves the house, in manner described.

I do not confine myself to rotating the plunger by means of the cord *v*, attached to the pulley *x*, as said plunger may be actuated from the driver's seat or in any other suitable manner; nor do I confine myself to the use of the kindler with a steam fire-engine, as it may be employed with engines of any description.

Any suitable explosive may be used in the chamber which will produce sufficient flame for igniting the kindling C.

5 The tube *i* may enter the fire-box through the front or door casing, if preferred.

Having thus explained my invention, what I claim is—

1. The fire-box of the engine, in combination with the case or chamber opening through
10 a wall thereof, an explosive element in said chamber, a rotary plunger projecting into the chamber, actuating mechanism therefor, and a frangible vessel containing an explosive element disposed in the path of said plunger,
15 substantially as described.

2. The fire-box of the engine and the tube *g*, tapping the same, in combination with the metallic chamber *h*, opening into said tube and provided with the cap *j*, and the plunger
20 *D*, working in said cap, and means for actuating said plunger, and the frangible vessel *m*, disposed in said chamber in the path of said plunger, substantially as specified.

3. In a steam fire-engine, the chamber *h*,
25 opening through the water-jacket of said engine and provided with the tube *k* and ad-

justable stop *g*, in combination with the rotary plunger *D*, working in the wall of said chamber, and the frangible vessel *m*, disposed in said tube and resting in said stop, substantially as described. 30

4. In a steam fire-engine, a chamber *h*, opening into the fire-box thereof, in combination with a screw-plunger *D*, working in a wall of said chamber and provided with the pulley *t*, a cord *v*, connecting said pulley with a pulley on a fixed support, and a frangible vessel for containing an explosive disposed within said chamber in the path of said plunger, substantially as described. 35

5. The fire-box of the engine, in combination with the explosive-chamber *h*, opening through said jacket, the screw-plunger *D*, working in the head of said chamber, and means for actuating said plunger, and the
40 vessel *m*, disposed in a guide tube or socket, as *k*, in said chamber in the path of said plunger, substantially as described. 45

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Witnesses:

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