

(No Model)

G. J. BROWN.

AUTOMATIC FIRE IGNITER FOR FIRE ENGINES.

No. 583,208.

Patented May 25, 1897.

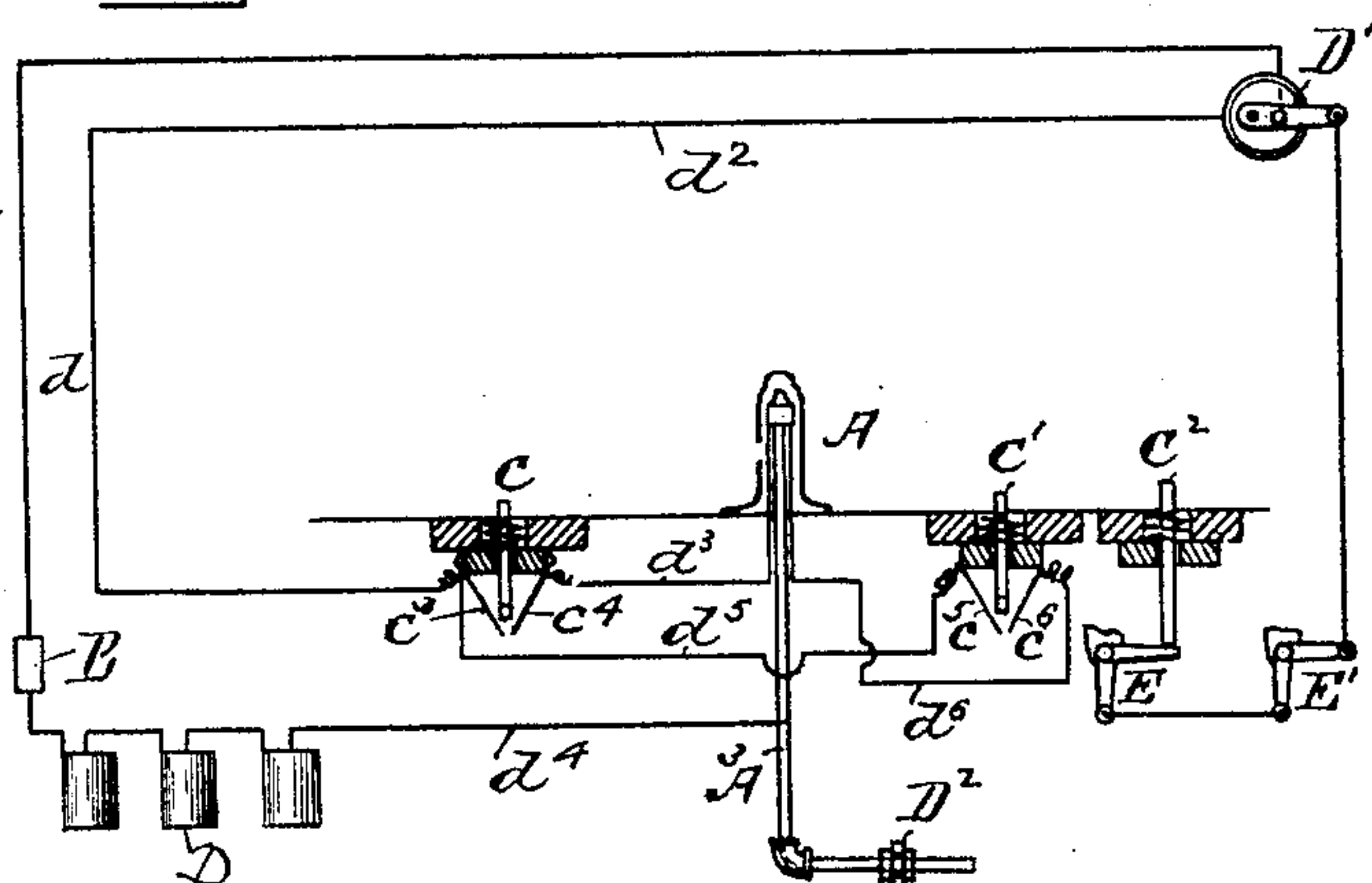
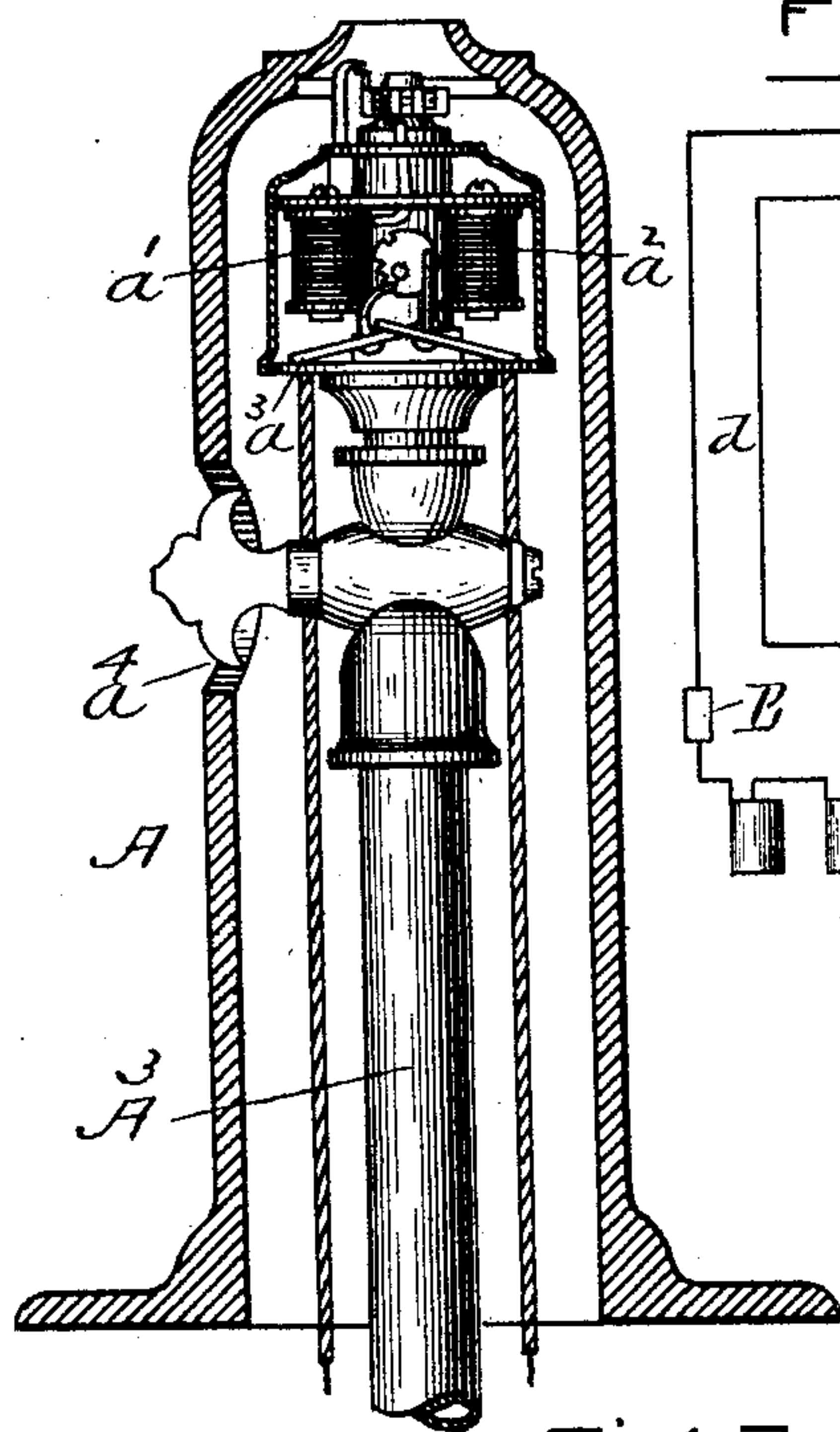
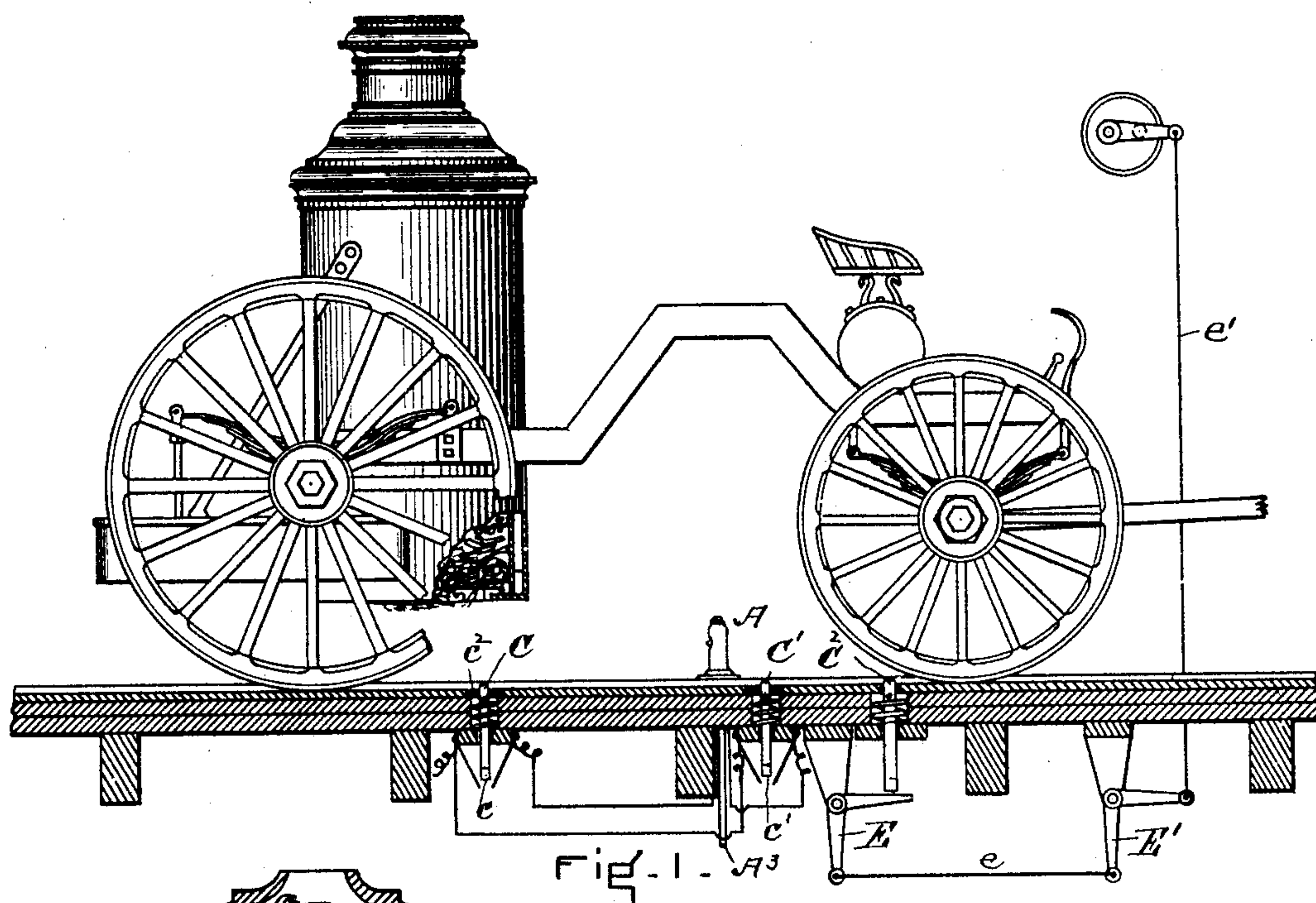


Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

GILBERT J. BROWN, OF CHELSEA, MASSACHUSETTS.

AUTOMATIC FIRE-IGNITER FOR FIRE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 583,208, dated May 25, 1897.

Application filed March 8, 1897. Serial No. 626,388. (No model.)

To all whom it may concern:

Be it known that I, GILBERT J. BROWN, a citizen of the United States, residing at Chelsea, in the county of Suffolk and State of Massachusetts, have invented an Automatic Fire-Igniter for Fire-Engines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to a means for automatically lighting the fire in a fire-engine without requiring the services of a man to apply a match thereto or ignite it in any other way. The saving in time thereby effected is of the utmost consequence in enabling the engine to reach the scene of a fire more promptly.

Referring to the drawings, Figure 1 is a view showing an engine-house equipped with my invention, the floor of the house being in section and the engine standing thereon being partly broken away. Fig. 2 is a sectional view of an automatic electric burner used in connection with my invention. Fig. 3 is a diagrammatic representation of my invention, showing the circuits.

In carrying the invention into effect I place an automatic electric gas-burner A at a suitable place in the floor of the engine-house where the flames from it will shoot up through the grate of the fire-engine passing over on the way out of the house and set fire to the inflammable material placed there. The automatic burner is made in the usual way, with the magnets a' a^2 having separate circuits. When the circuit of the magnet a' is closed, its armature a^3 is attracted, and by means of the pawl attached thereto turns the ratchet, thereby opening the gas-cock. At the same time a spark from the spark-coil B ignites the gas. When the magnet a^2 is energized, its armature is attracted and the arm attached thereto strikes a pin on the ratchet-wheel and returns it to its original position, thereby shutting off the gas. The construction of this device is well known and need not be more particularly described.

I provide an opening a^4 in the casing a of the burner, so as to allow the cock to be turned by hand and also allow the admission of air,

which makes the flame shoot up higher. It is usual to provide in engine-houses ways or tracks for the fire-engines to run on, as I have shown in Fig. 1. At suitable points in the track traversed by one of the rear wheels I place spring-controlled movable rods C C' for completing the circuits of the magnets a' a^2 , as will be presently described, and also a rod C², which serves a different purpose. These rods are arranged in the order named, beginning at the rear of the house.

The rods C C' are made of hard rubber with brass tips c c' . They are insulated by the blocks of hard rubber c^2 . Each rod has a spring encircling it, which causes it to return to a raised position after being depressed. Underneath the rods C C' there are brass contact pieces or springs c^3 c^4 c^5 c^6 , which are normally held apart, so that the circuits of the magnets are usually open.

The rod C controls the circuit of the magnet a' , which may be traced as follows: from the left-hand side of battery D to spark-coil B, then by wire d to switch D', then by wire d^2 to contact-spring c^3 , through the brass tip c of rod C when the latter is depressed, to contact-spring c^4 , then by wire d^3 to magnet a' , then by the gas-pipe A³ to the wire d^4 , and to the right-hand side of the battery.

The circuit of the magnet a^2 comprises wire d , switch D', wire d^2 , wire d^5 , contact-spring c^5 , tip c' of the rod C' when it is depressed, contact-spring c^6 , wire d^6 , gas-pipe A³, and wire d^4 .

In order to prevent the current from flowing along the gas-pipe beyond the wire d^4 , I provide the rubber coupling D², which insulates the part of the gas-pipe situated in front thereof.

The rod C² is made of any suitable material, and underneath it is one arm of the bell-crank lever E, which is connected by a stout wire e to a bell-crank lever E', which is in turn connected by a wire e' to the arm of the switch D'.

The operation of the device is as follows: As the engine starts outward the rear wheel depresses the rod C, thereby closing the circuit of magnet a' and lighting the gas in the automatic burner A, which ignites the fuel in the grate of the engine as it passes over.

When the wheel reaches the rod C', it depresses it, thereby closing the circuit of magnet a^2 , which shuts off the gas in the way already described. The wheel next depresses
 5 the rod C², which actuates the switch D' through the connected bell-crank levers and thereby breaks the circuit of both magnets at the switch, rendering further operation of the device impossible till the switch is set
 10 again. The last feature is one of importance because it prevents unauthorized persons from operating the device in the absence of the firemen.

In experimenting with my invention I at
 15 first made the rods C C' of brass and dispensed with the rubber insulating-blocks c^2 , but I found that if the driver of the engine applied the brake to the wheel before leaving the house a circuit was established through the
 20 engine to the ground on the other side, thereby rendering the device inoperative. I obviate this by making the rods of rubber with brass tips and by providing the insulating-blocks c^2 .

25 Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In an automatic fire-igniter for fire-engines, an electric burner, magnets therein,
 30 means actuated by the movement of the engine to close the circuits of the magnets and to break the said circuits after the magnets

have been energized, substantially as described.

2. In an automatic fire-igniter for fire-engines, an electric burner, magnets therein, means actuated by the wheel of the engine to close the circuits of said magnets, and a switch in said circuits actuated by the wheel to break the circuits of the magnets after they have
 40 been energized.

3. An automatic fire-igniter for fire-engines, comprising the automatic electric burner A, containing the magnets a' , a^2 , the battery, wires connecting the battery and the
 45 magnets, and the brass-tipped rubber rods C, C' adapted to be depressed by the wheel of the engine to close the circuits of the said magnets, as and for the purposes described.

4. An automatic fire-igniter for fire-engines, comprising the automatic electric burner A, containing the magnets a' , a^2 , the battery, wires connecting the battery and the
 50 magnets, and the brass-tipped rubber rods C, C' adapted to be depressed by the wheel of the engine to close the circuits of the said magnets, and the rod C², the bell-crank levers E, E', the wires e , e' and the switch D', as and for the purposes described.

GILBERT J. BROWN.

In presence of—

JAMES A. LOWELL,
 LEO. A. WALSH.