

# UNITED STATES PATENT OFFICE.

JOHN W. BISHOP, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO JOHN F. BISHOP, OF SAME PLACE.

## FIRE-EXTINGUISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 260,641, dated July 4, 1882.

Application filed September 12, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. BISHOP, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Fire-Extinguishing Apparatus; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view showing the apparatus as arranged in a building; Fig. 2, the chain connection enlarged; Fig. 3, a side view of the distributor; Fig. 4, a longitudinal section of the distributor; Fig. 5, an end view of the distributor.

This invention relates to an improvement in fire-extinguishing apparatus, with special reference to that class of such apparatus in which pipes are arranged through a building or rooms therein, with distributors at intervals in the pipes provided with fusible plug or equivalent devices, which, when the heat in the room shall have risen to a certain temperature because of fire therein, will be released and the water liberated to be forced through the distributor in the form of spray to extinguish the fire which caused the heat.

In the use of this class of apparatus it is usually necessary that a constant head or force of water shall be in the pipes, so that when liberated it will be discharged with great force. Such constant flow of water has heretofore been produced by a reservoir, either in the form of tanks in the building or from water-works.

In places where there are not permanent water-works, tanks are necessarily employed. These require constant watching in order to secure a supply, and are subject, to a greater or less extent, to leakage and consequent damage to property, so that tanks are almost as dangerous to property as the fire which they are intended to aid in extinguishing.

The object of this invention is to dispense with water works or tanks and adapt the apparatus to large manufactories, where power is readily attained, by means of which the supply of water may be forced into the pipes whenever and wherever a fire shall occur; and the

invention consists essentially in a force-pump drawing water and discharging into the distributing-pipe, combined with power connected with the said pump, and a mechanism leading to the different points to be protected, whereby the heat generated by the fire when it occurs will automatically apply the power to the pump and instantly supply water through the distributors at the point where the said fire occurs, as more fully hereinafter described.

In illustrating my invention I show it as employing water-power, in which A represents the water wheel or motor receiving water through a pipe, B, from the flume C, in the usual manner for turbine and like wheels.

D represents a rotary pump connected by gearing to the wheel-shaft, so that the revolution of the wheel imparts corresponding motion to the pump, which will draw water from the supply through a pipe, E, and discharge it into the pipe F, which leads to the different parts of the building, provided at different points with distributors *a*, in the usual manner for this class of fire-extinguishers.

The supply of water to the wheel through the pipe B is cut off by a gate or valve, *b*, and which valve is to be automatically opened whenever a fire occurs. As a suitable device for operating this valve, I here represent a flexible diaphragm, *d*, in a chamber, *e*, to which water is admitted beneath the diaphragm through a tube, *f'*. This diaphragm is provided with a spindle, *g*, which engages a lever, *h*, one end hung upon a fulcrum, *i*, the other connected to an arm, *k*, on the valve *b*, so that when water is admitted into the chamber *e* below the diaphragm it will force the diaphragm to rise. The movement of the diaphragm, communicated to the lever *h* through the spindle *g*, turns the valve *b* in the pipe B, so as to permit the water to flow to the wheel.

In the pipe *f* is a valve, *l*, operated by a lever, *m'*. From this lever a wire, chain, cord, or other equivalent device, *n*, extends through the building to the points to be protected, and at those points—say near the distributors—fusible connections *r* are made. This connection is best done by means of a chain. (Seen enlarged in Fig. 2.) Two links, *s s*, in the chain, a little distance from each other, are brought together and soldered, leaving the intermediate

is not new; but I am not aware that a tubular distributor having openings on its side extending over onto its outer end has been provided with a sleeve, whereby not only the capacity of the opening in the side of the distributor may be varied, but the sleeve may be thrown forward to project beyond the end of the distributor, and thereby contract the discharge into a stream.

10 I claim—

1. In a fire-extinguishing apparatus, the combination of the following elements: first, a pump to receive the water and force it to the distributors; second, mechanism to communicate the power to the pump; third, mechanism, substantially such as described, communicating by fusible connections with the points or parts of the building to be protected, and so that when the said fusible connections are broken the power will be applied, substantially as described.

2. The combination of the following elements: first, a pump to receive water and force it to the distributors; second, a water-motor in connection with said pump, and a gate or valve in the supply to the motor; third, mechanism, in connection with said gate, arranged

to be operated by an inflow of water to open the gate to the motor; fourth, a valve in the pipe leading to said gate-operating mechanism, 30 connected by fusible connections at points or parts of the building to be protected, and so that when said connections are broken the valve will be opened and permit the flow of water to the gate-opening mechanism, substantially as described. 35

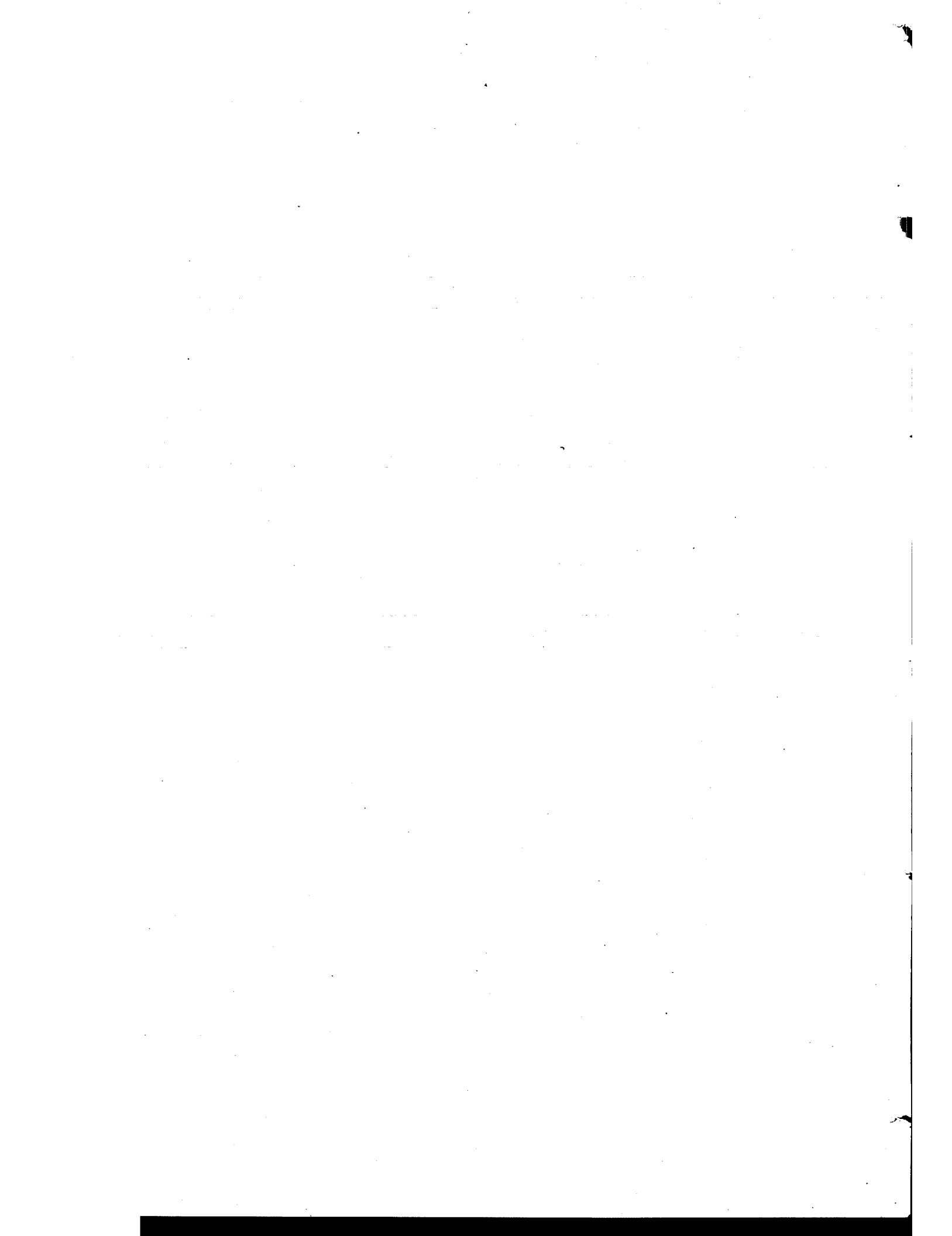
3. In a fire-extinguisher, the distributor constructed of tubular shape, with projecting hollow rim at its outer end, and with spiral slots or openings on the side of the tube, extending through the said rim to the recessed center, 40 substantially as described.

4. In a fire-extinguisher, a distributor constructed of tubular shape, with slots or openings on the side of the tube, extending over onto the outer end of the distributor, combined with a sleeve, R, adjustable on said sleeve to vary extent of opening and contract the water into a stream, substantially as described. 45

JOHN W. BISHOP.

Witnesses:

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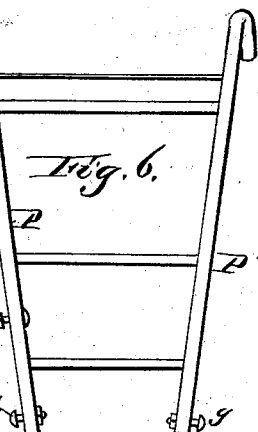
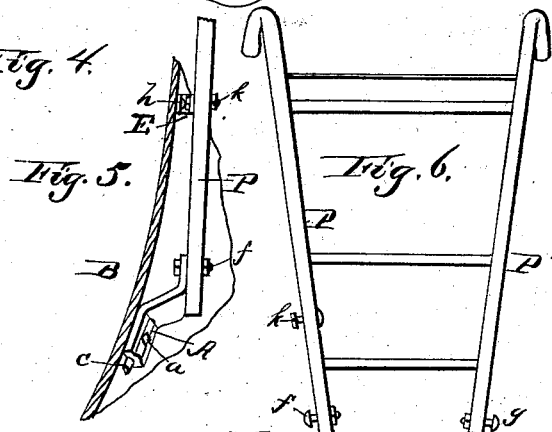
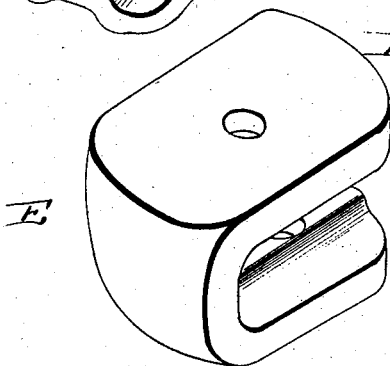
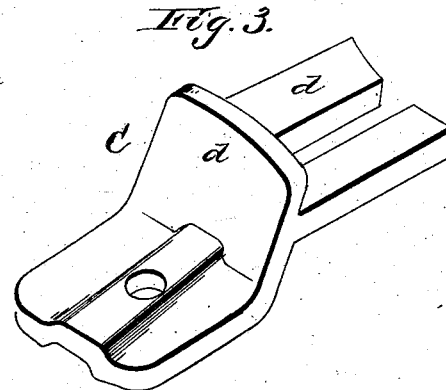
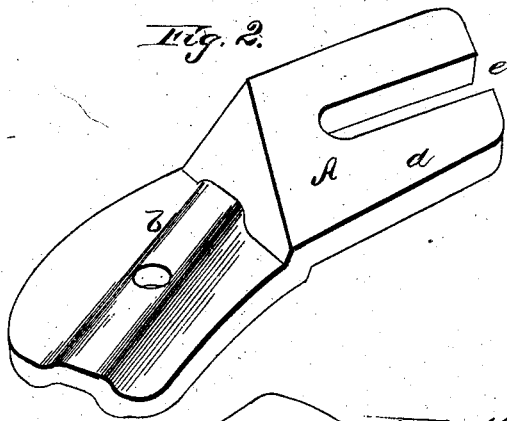
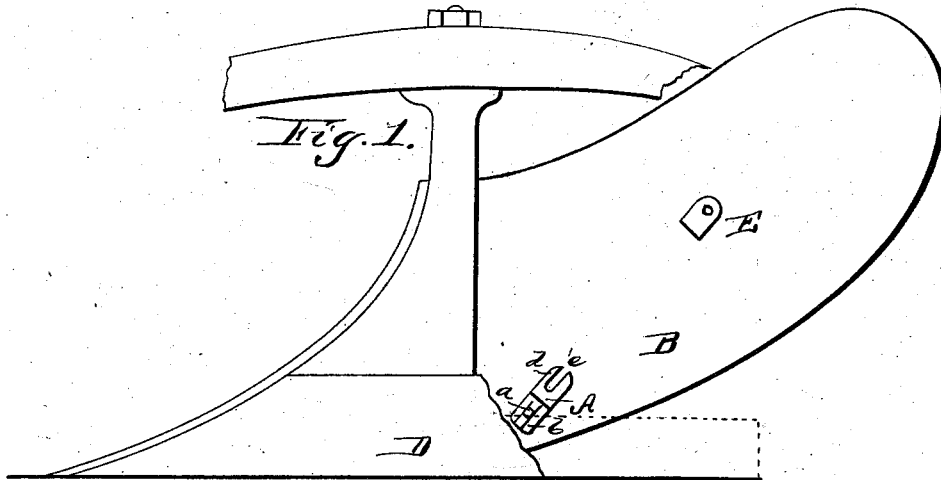


(No Model.)

T. M. BISSELL.  
PLOW HANDLE.

No. 260,642.

Patented July 4, 1882.



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