E. R. & H. S. Cole,

Fire Engine.

No. 108,452. Patented Oct. 18. 1870.

Fig. 1

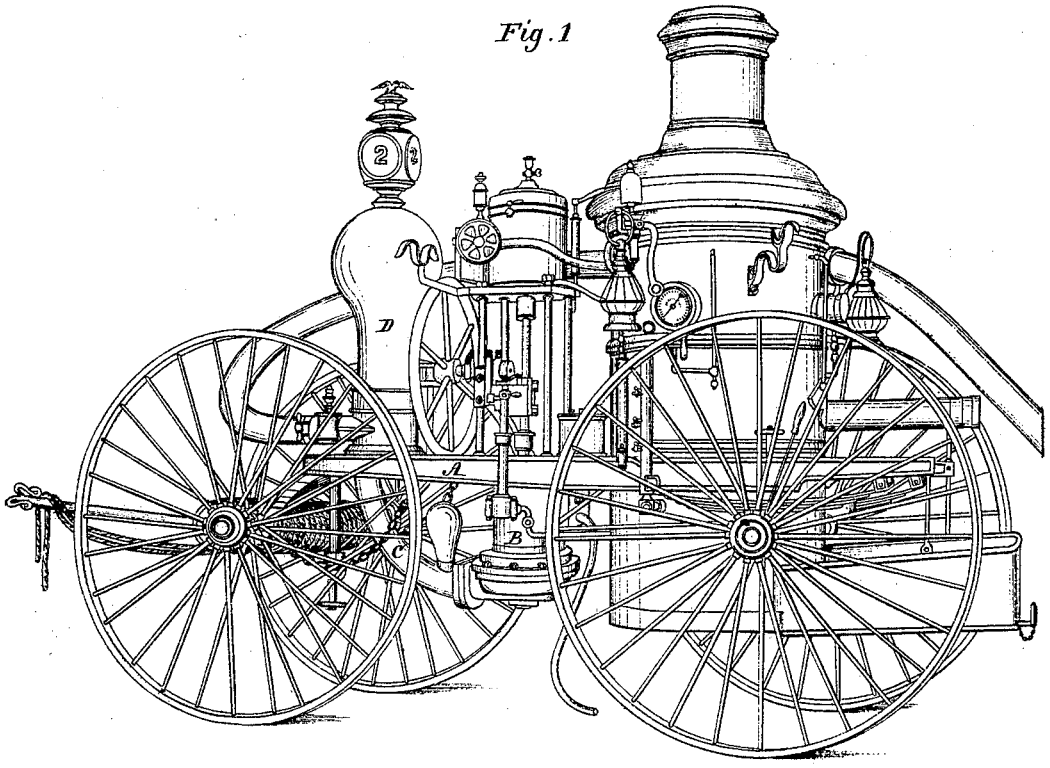


Fig. 2.

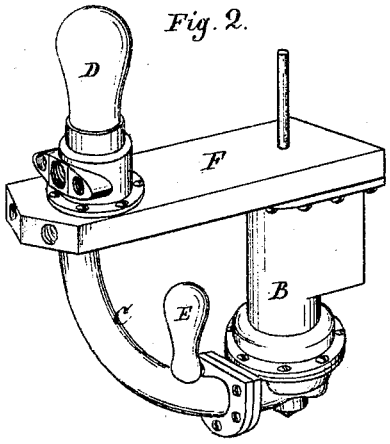
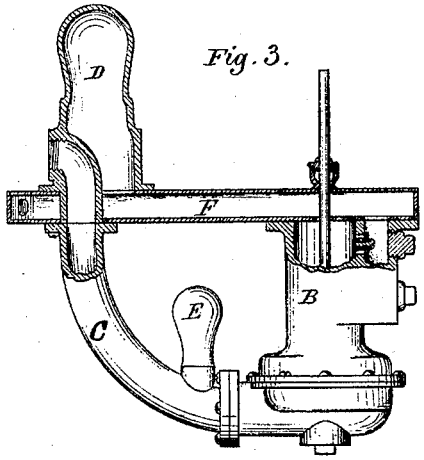


Fig. 3.



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EDWARD R. COLE AND HENRY S. COLE, OF PAWTUCKET, RHODE ISLAND.

Letters Patent No. 108,452, dated October 18, 1870.

IMPROVEMENT IN STEAM FIRE-ENGINES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that we, EDWARD R. COLE and HENRY S. COLE, of Pawtucket, county of Providence and State of Rhode Island, have invented a certain new and useful Improvement in Steam Fire-Engines.

Said improvement relates to that general class of engines which are provided with a piston-pump, although applicable to rotary engines. Our invention relates more particularly, however, to engines provided with vertical pumps, similar to that described in the United States Letters Patent granted to us July 7, 1868, and consists in providing a hollow bed for the engine, and in arranging its interior with relation to the pump and air-chamber, in such a manner that water from the pump, under pressure, will be delivered therein, and thence, through proper outlets, to one or more lines of hose; and we do hereby declare that the following specification, taken in connection with the drawing furnished and forming a part of the same, is a true, clear, and exact description thereof.

Figure 1 shows a complete steam fire-engine containing our improvement.

Figure 2 represents, in side elevation, a portion of a steam fire-engine containing our improvement.

Figure 3 represents the same, with such portion in longitudinal vertical section as is requisite for illustration.

Like letters of reference are used in all the figures.

A is the bed-plate.

B, the pump.

C, the induction-pipe.

D, the air-chamber.

E, the vacuum-chamber.

F is the interior chamber of the bed-plate. It connects with the eduction-valves of the pump B and the interior of the air-chamber D.

The induction-pipe C extends from the bottom of the pump upward through the bed-plate chamber; thence through the front of the base of the air-chamber, at which point connection is made with flexible suction-hose.

In our Letters Patent of July 7, 1868, we show and describe our eduction and induction-pipes as connected to the pump at one end, the other ends extending to the base of the air-chamber. With such arrangement, access could only be had to the eduction-valves in the chamber I by removing the eduction-pipe. By our present arrangement, the valve-chamber T is freely accessible, as no eduction-pipe is used, the water being delivered from the top of the chamber into the interior of the bed-plate.

Our present improvement is well adapted to engines provided with double pumps, as a small air-chamber may be used, for reason of the fact that the space within the bed is, in fact, a reservoir for containing a considerable body of water under pressure.

Another advantage in charging the interior of the bed with water lies in the fact that, when in operation, the weight of the water therein contributes to the steadiness of the engine while in operation.

When not in operation, the bed-plate, being hollow, is light, and, in fact, may be lighter than if a solid plate were used, and yet would be much stronger, on account of its form.

Having thus described our invention,

We claim as new and desire to secure by Letters Patent—

The water-tight bed-chamber F, in combination and in connection with the eduction-ports of a forcing-pump and suitable air-chamber, substantially as described.

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