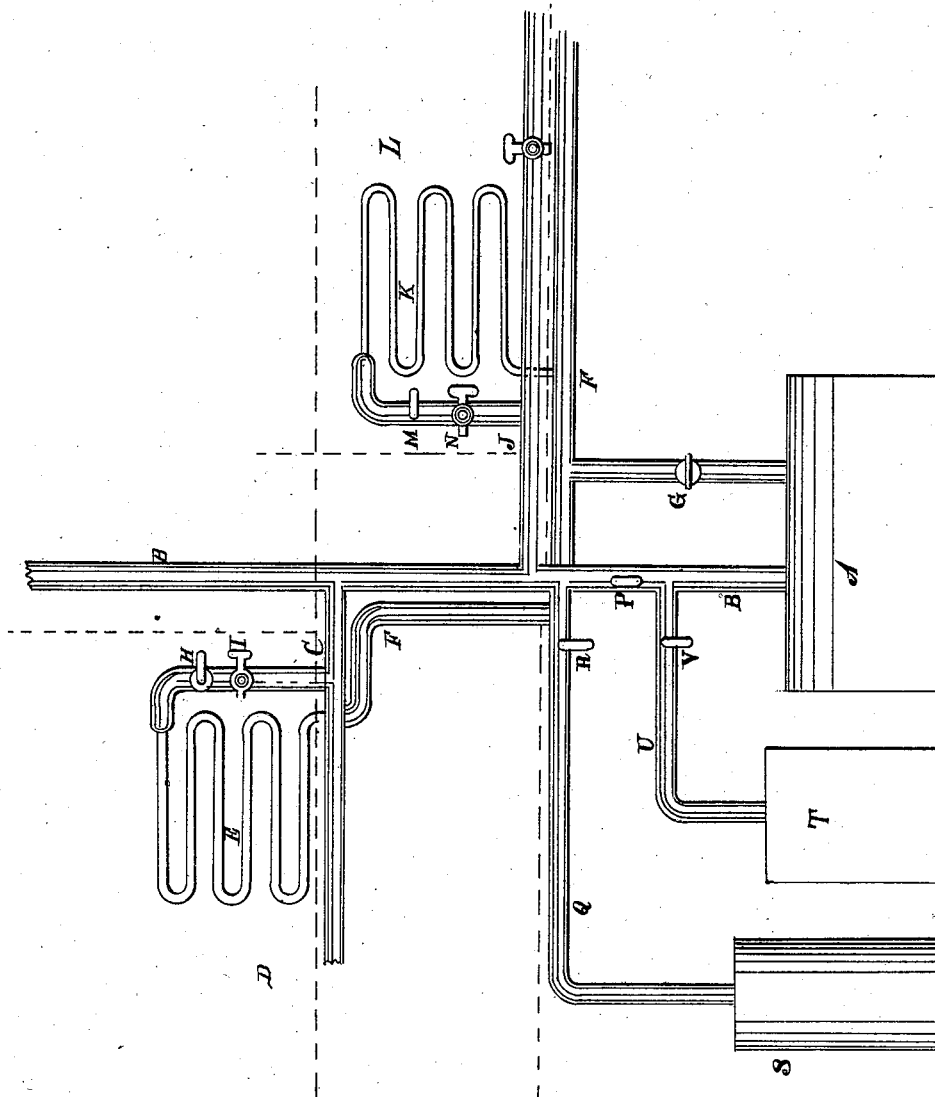


C.S. Brown,

Fire Engine,

No 46,328.

Patented Feb. 14, 1865.



Witnesses

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CHARLES S. BROWN, OF NEW YORK, N. Y.

IMPROVED STEAM-HEATING AND FIRE-EXTINGUISHING APPARATUS.

Specification forming part of Letters Patent No. 46,328, dated February 14, 1865.

To all whom it may concern:

Be it known that I, CHARLES S. BROWN, of the city, county, and State of New York, have invented certain new and useful improvements in steam-heating apparatus, to adapt it to extinguishing fires when they occur in or near the buildings or apartments heated by steam; and I do hereby declare that the following specification, with the accompanying drawing, is sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements without further invention or experiment.

The nature of my invention and improvements in steam-heating apparatus consists in the combination of a steam-engine boiler and steam-heating pipes arranged so as to be utilized to convey water to extinguish fires in the buildings and apartments heated by the steam-pipes; also, in combining with the steam-heating pipes a hydraulic engine or pump, so arranged and connected to the steam-heating pipe as to force water through said pipe to extinguish fires in or around the buildings heated; also, in combining with the steam-heating pipe or apparatus and hydraulic engine or pump a stop-cock or valve in the steam-pipe between the boiler and the junction of the water-pipe with the steam-pipe, to stop the water forced into the steam-pipe from running toward or into the boiler which supplies the steam to the heating-pipe.

In the accompanying drawing a steam-heating apparatus is represented with my improvements.

A is a boiler for generating steam, which may be provided with gage-cocks, a safety-valve, and such other useful and necessary appendages as may be desirable.

B is the steam-pipe, to conduct the steam up through the building to be heated, and may pass up through the top of the building and terminate with a safety-valve, or otherwise, as may be preferred. The floors and partitions of the building are represented by dotted lines in the drawing.

C is a branch pipe, conducting the steam into the room D, which is heated by the serpentine pipe E, which terminates in the condensed-water pipe F, which may be made to convey the water to the boiler or otherwise.

If made to convey the water to the boiler, as shown in the drawing, it should have a cock, G, near the boiler, or a valve to prevent the pressure of steam in the boiler from forcing the water out of the boiler into the pipe.

H is a stop-cock in the pipe C, to shut off the steam when it is not wanted to heat the room D.

I is a cock in the pipe C, to let the steam into the room D, should it take fire. This cock I may be provided with a screw-nozzle, or other coupling, to apply a pipe or a hose and pipe to conduct and direct the steam and water, should water be forced into the steam-pipe, onto the fire to extinguish it.

J is a branch pipe, conducting the steam into the pipe K to heat the room L, and the condensed water passes into the pipe F, above mentioned. The pipe J is provided with cocks M and N, similar to the cocks H and I in the pipe C, and for the same purposes. There may be as many branch and serpentine pipes as may be necessary to heat the rooms required.

To adapt the above-mentioned steam-heating pipes to the purpose of extinguishing fire by water, I make a stop-cock in B at P, which must be shut before water is forced into the pipe, to stop the water from running into the boiler.

Q is a pipe to supply water to the steam-pipe from the pipes in the street or elsewhere, and it is provided with a stop-cock at R to shut the water out of the steam-pipe when it is not required.

If the pressure of the water supplied by the pipe Q is not sufficient, a hydraulic engine or pump may be arranged at S to force the water into the steam-pipes; and it would be safer to have a safety-valve on the pipe Q, so that if the pump were started before the cock R was opened the safety-valve would let the water escape until the cock R was opened, and prevent the pipe from bursting.

The pump S may be arranged to be worked by hand or other power, or by a steam-engine arranged at T and operated by steam from the boiler A through the pipe U, which should be provided with a stop-cock at V, to shut the steam from the engine when it is not wanted. The connection of the engine with the pump should be arranged to connect and disconnect, if the engine is to be used for other purposes besides operating the pump.

The pipe B may be provided with as many cocks like I and N as may be desirable for the purpose of extinguishing fires, and these cocks may be arranged in such positions as may be most convenient.

If a fire occurs in the room D, the cock I should be opened as soon as it is discovered, and if it is of such magnitude that it is not likely to be extinguished by the steam the cocks P and G should be shut and the cocks V and R opened, to start the engine and pump and force water to extinguish the fire, instead of steam, and hose and pipes may be applied to the cocks in the passages or adjacent rooms to put out the fire in the room D.

Having described my improvements, I will now state what I desire to secure by Letters Patent, to wit:

1. The combination of the steam-engine, boiler, pump, and steam heating pipes, arranged substantially as described, so as to be

utilized to convey water to extinguish fires, in the manner set forth.

2. Connecting to the steam-heating pipes a pipe to supply water from a hydraulic engine or pump, or other source, and force it through said steam-pipe to extinguish fire in or around the building heated, substantially as shown and described.

3. In combination with the steam-heating pipe or apparatus and water-supply pipe, a stop-cock or valve in the steam-pipe, between the boiler and the junction of the water-pipe with the steam-pipe, to stop the water from running toward or into the boiler which supplies the steam to the heating-pipe, substantially as shown and described.

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Witnesses:

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