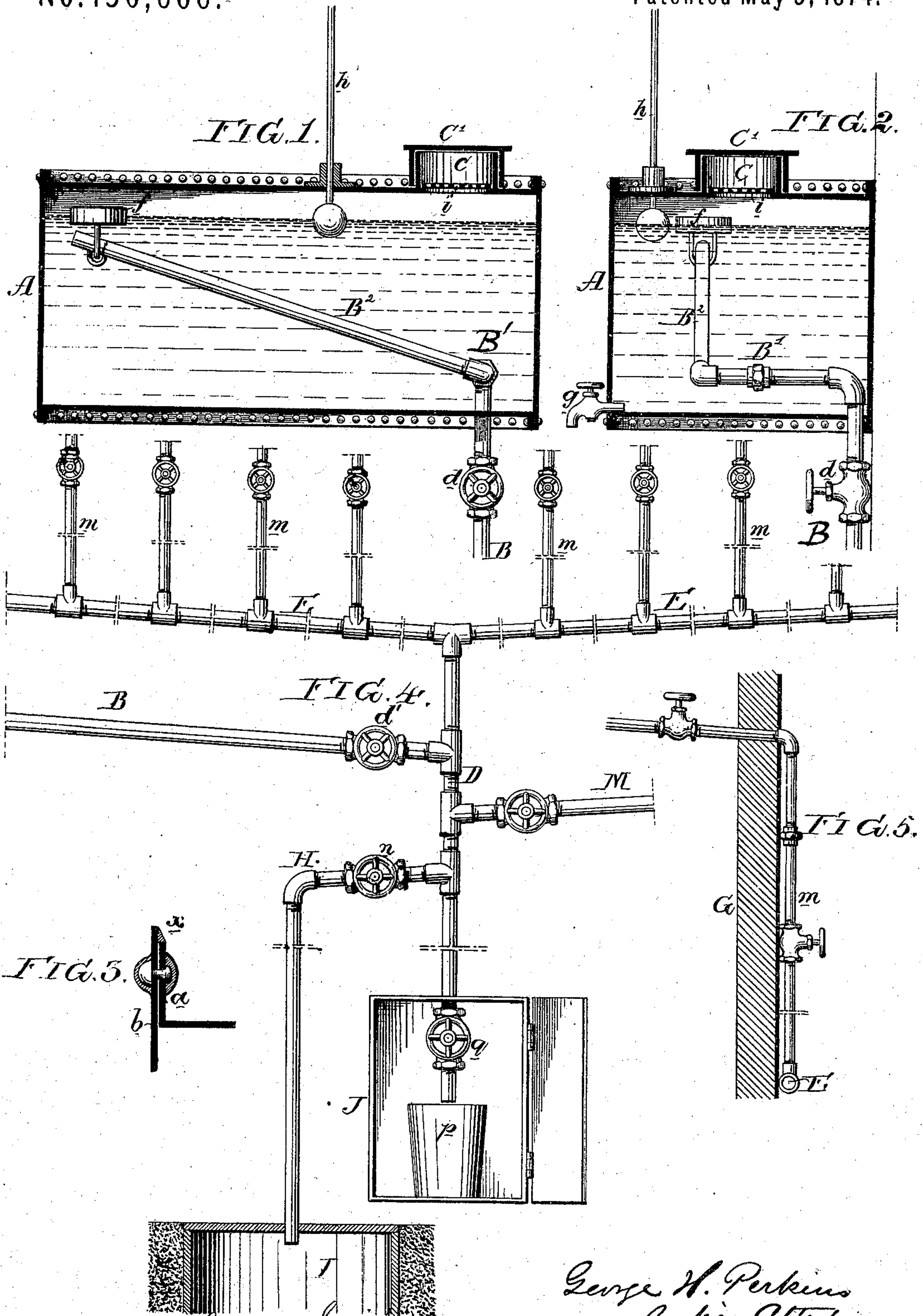


G. H. PERKINS.

Apparatus for the Distribution of Liquid Fuel.

No. 150,606.

Patented May 5, 1874.



Witnesses, Harry Smith
Thomas McIlwain

George H. Perkins
By his Atty.
Howes and Son.

UNITED STATES PATENT OFFICE.

GEORGE H. PERKINS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND JOSEPH LE COMTE, OF NEW YORK CITY, AND ATLANTIC REFINING COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN APPARATUS FOR THE DISTRIBUTION OF LIQUID FUEL.

Specification forming part of Letters Patent No. 150,606, dated May 5, 1874; application filed February 21, 1874.

CASE G.

To all whom it may concern:

Be it known that I, GEORGE H. PERKINS, of Philadelphia, Pennsylvania, have invented certain Apparatus for the Distribution of Liquid Fuel, of which the following is a specification:

The object of my invention is to distribute benzine and other light spirits of petroleum to different heating appliances in a building without incurring the usual danger which accompanies the similar use of these fluids in manufactories and other buildings, and this object I attain by the tank and system of pipes illustrated in the accompanying drawing.

The rectangular tank A, which contains the benzine, and which is shown in the longitudinal section, Figure 1, and transverse section, Fig. 2, is made of galvanized iron, and with joints of the character best observed in the enlarged view, Fig. 3, on reference to which it will be observed that the flange *a* of the top plate terminates at a short distance from the upper edge of the end plate *b*, so as to leave an angular recess, *x*, which is filled with solder, applied in the usual manner, the heads of the rivets by which the plates are secured being also covered with solder.

Benzine is of such a subtle character that ordinary riveted joints are not proof against its penetrating properties; hence the addition described of solder, which is adopted throughout all the joints of the tank. B is the outlet-pipe, furnished with cocks *d* and *d'*, and connected within the tank, by a swivel-elbow, B¹, with the delivery-pipe B², to the upper end of which is connected a float, *f*, the latter always maintaining the orifice of the delivery-pipe a short distance below the level of the benzine in the tank, so that none but the lightest and purest of the benzine can pass into the outlet-pipe. The tank is provided with a cock, *g*, through which the thick and impure benzine and water can be drawn off from time to time. The height of the benzine in the tank is indicated at all times by the float *h*. C is the inlet, provided with a snugly-fitting cover, C', on removing which a can of benzine can be tilted

onto a grating, *i*, and there left until its contents have passed into the tank.

It should be understood that the tank A is secured to the outside of the wall of a building, at a point adjacent to the latter, and at an altitude of about five feet above the burners within the building, this altitude depending, however, upon the size and positions of the burners.

The outlet-pipe B is continued in a slightly-inclined course to the vertical or main distributing-pipe D, from the upper end of which extend inclined pipes E, all being secured in the present instance to the exterior of the wall. From the pipes E branch pipes *m* are carried upward outside the wall G, as shown in Fig. 5, until they reach a point where they must pass through the wall to the burners within the building, care being taken that these pipes are slightly inclined upward from the wall to the burners. A branch pipe, H, furnished with a cock, *n*, extends from the vertical pipe D to the entrance of a well, I, into which all the pipes can be emptied when the occurrence of a fire or other circumstances demand such a course. The pipe D terminates at its lower end in a metal box, J, within which the pipe is furnished with a suitable cock, *q*, the box being of sufficient depth to permit the introduction of a tumbler, *p*, or other suitable transparent vessel below the end of the pipe.

Benzine has such an affinity for moisture, especially in cold weather, that water must invariably collect in the pipes, and being heavier than benzine, the water must seek the lowest level.

On opening the cock *q* this water must escape from the pipe D into the tumbler, the transparency of which permits the attendant to ascertain when the flow of water ceases and that of benzine commences, a change which will prompt him to close the cock *q*.

This operation may be repeated from time to time, as the accumulation of water may suggest.

The extension of the pipe D beneath the

delivery-pipe B and discharge-pipe H should be of sufficient capacity to contain all the water which is likely to accumulate between the regular intervals at which it is drawn off by the attendant. This is necessary in order to prevent said water from being forced upward to the burners. One or more branch pipes, M, may extend from the pipe D to other buildings, there to communicate through other pipes with the burners of heating apparatus.

It will be observed, as an especial feature of my invention, that the whole of the pipes are inclined downward toward the discharge-pipe H, and that the delivery-pipe B communicates with the main distributor D at a point above said discharge-pipe. The object of this arrangement is to permit all of the benzine to be drawn off from the pipes, and the whole of the burners to be extinguished instantaneously in the event of a fire occurring within the building. If the cock *d* or *d'* of the delivery-pipe B were simply turned off, the supply of benzine under pressure to the burners would certainly cease, but the vaporizing of the benzine still remaining in the distributing-pipes would cause each burner to remain ignited until this supply had been exhausted. By opening the cock *n* of the discharge-pipe H, however, simultaneously with, or immediately after, the cutting off of the sup-

ply from the delivery-pipe B, a downward current of the benzine will occur in the distributing-pipes, and this causes a partial vacuum in each pipe communicating with each burner, and the instant extinguishing of all the flames.

It will be evident from the foregoing description, that while every facility is afforded by my invention for the free distribution of the benzine, every precaution is taken to prevent it from being a dangerous means of commencing conflagrations, or of spreading fires which may owe their origin to other sources.

I claim as my invention—

The combination, with an elevated tank containing liquid fuel, of a supply-pipe, B, discharge-pipe H, and system of distributing-pipes with their branches and burners, the whole being arranged in the manner described, so that the liquid can, when required, descend through all of the distributors into the discharge-pipe.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. PERKINS.

Witnesses:

WM. A. STEEL,
HARRY SMITH.