3 Sheets—Sheet 1.

J. H. CONNELLY.

APPARATUS FOR PREVENTING AND EXTINGUISHING FIRE IN OIL-TANKS.

No. 181,911. Patented Sept. 5, 1876.

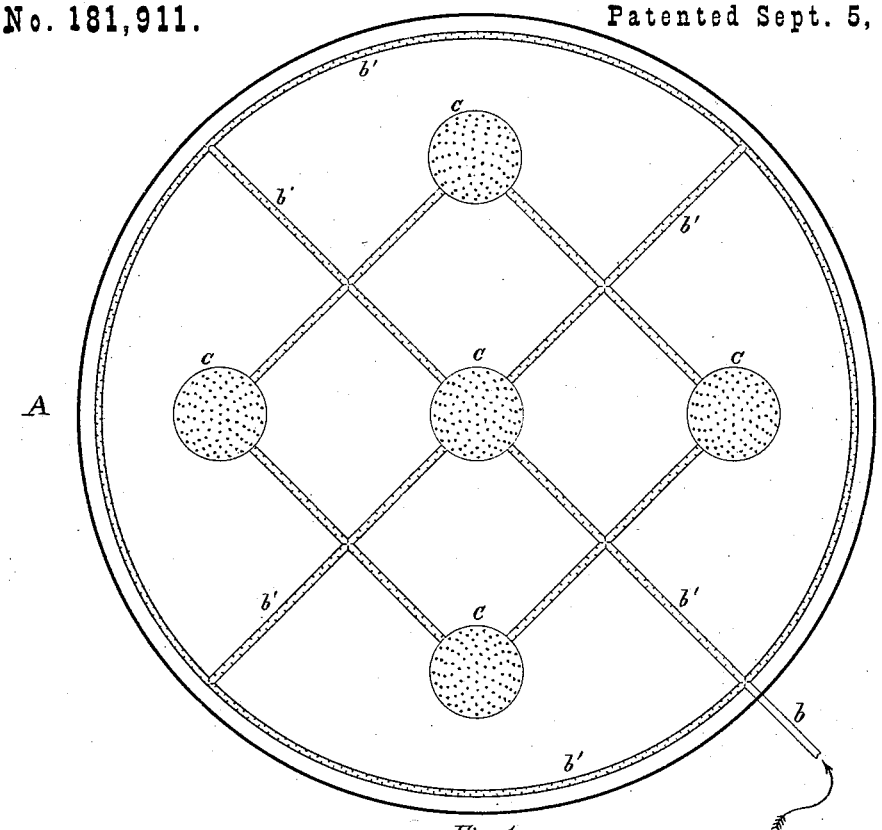
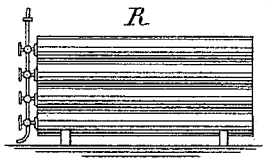


Fig. 1.



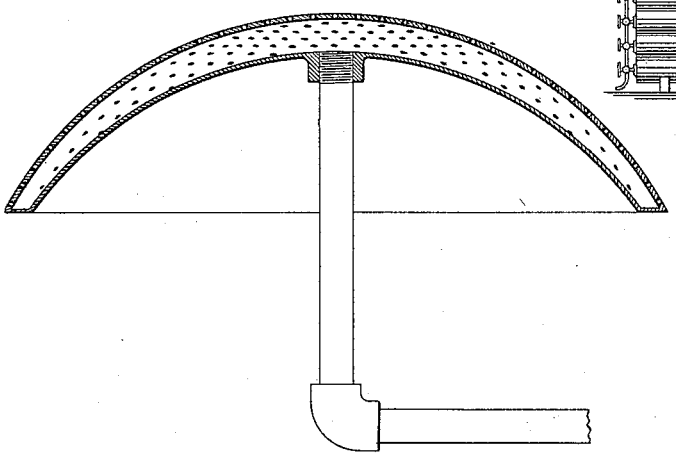


Fig. 2.

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3 Sheets—Sheet 2.

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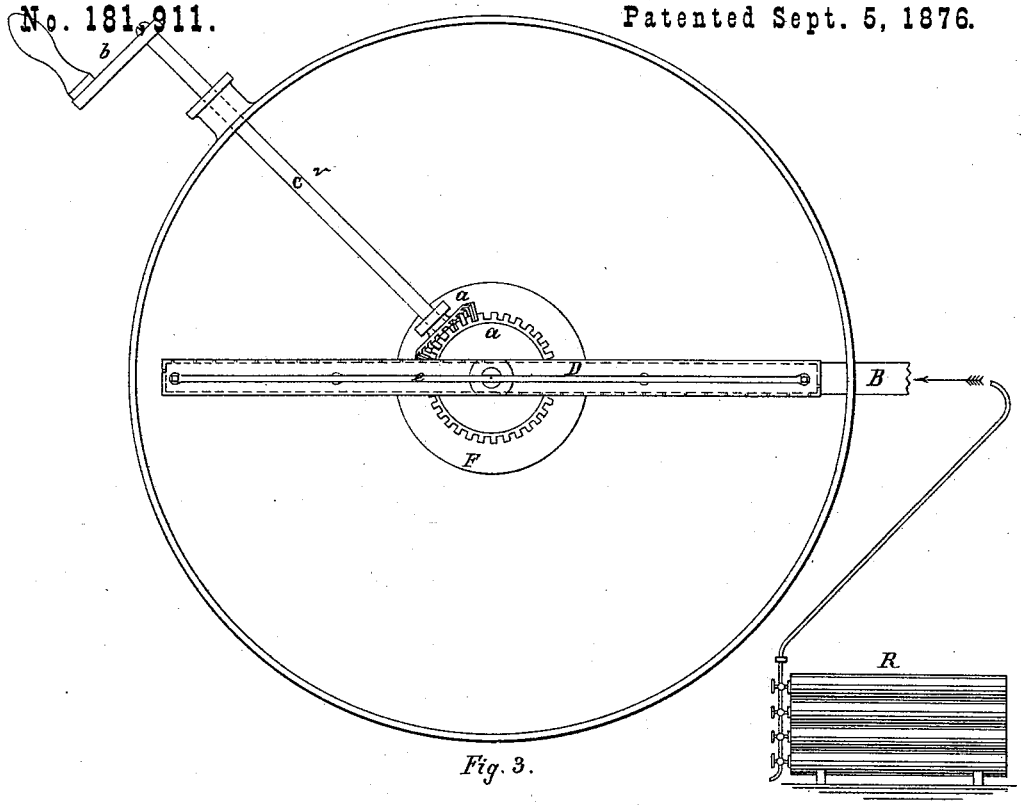

Fig. 3.

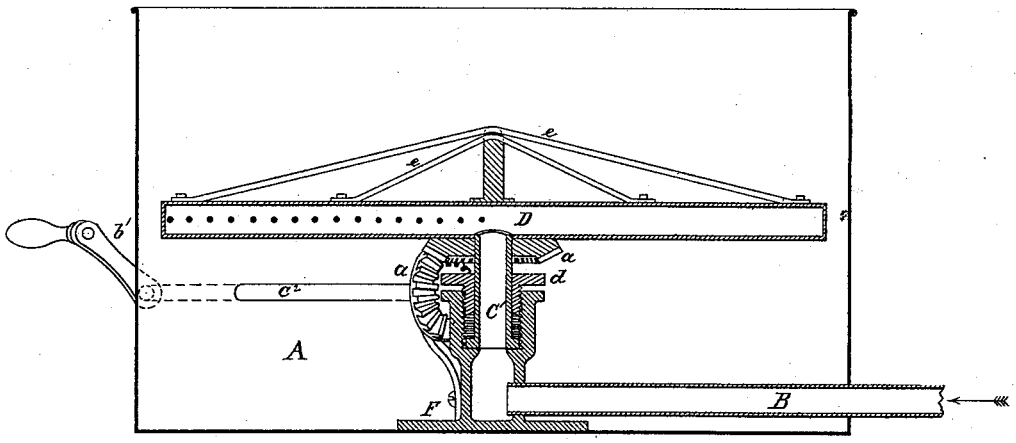

Fig. 4.

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3 Sheets—Sheet 3.

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APPARATUS FOR PREVENTING AND EXTINGUISHING FIRE IN OIL-TANKS.

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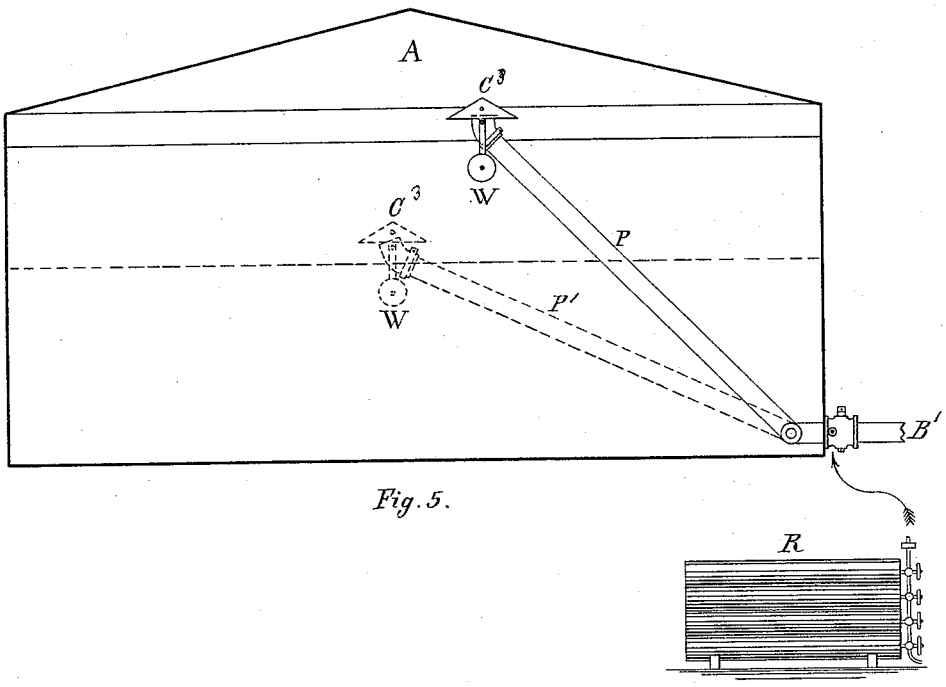

Fig. 5.

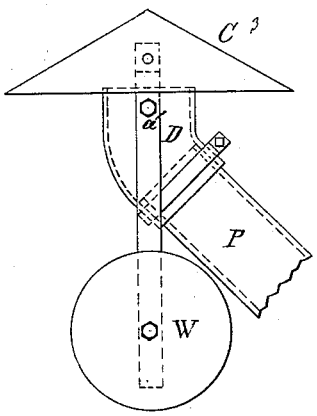

Fig. 6.

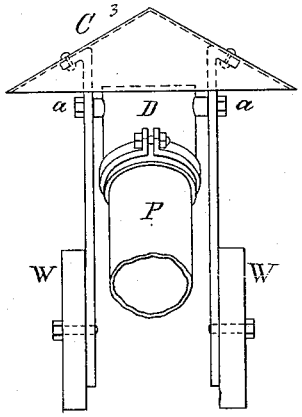

Fig. 7.

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Chas. E. Brooks

Inventor:
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by J. Elliot Goudiet
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UNITED STATES PATENT OFFICE.

JOSEPH H. CONNELLY, OF NEW BRIGHTON, PENNSYLVANIA, ASSIGNOR TO JAMES L. HASTINGS AND WILLIAM H. HASTINGS, OF NEW YORK.

IMPROVEMENT IN APPARATUS FOR PREVENTING AND EXTINGUISHING FIRES IN OIL-TANKS.

Specification forming part of Letters Patent No. **181,911**, dated September 5, 1876; application filed August 28, 1876.

To all whom it may concern:

Be it known that I, JOSEPH H. CONNELLY, of New Brighton, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Preventing and Extinguishing Fires in Oil-Tanks, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to secure, by the most economical device, the delivery of carbonic-acid gas onto the oil, naphtha, or other combustible fluids, for the accomplishing of two definite purposes: First, the prevention of fire. Gas, being heavier than the air, will remain stratified on the surface of the oil, and prevent its ignition, also serves the useful purpose of preventing the evaporation of the oil or naphtha. Secondly, when the oil, naphtha, or other combustible fluid is on fire, by delivering a sufficient quantity of gas on the surface of the oil, or through the oil from beneath to the surface, the fire is instantly extinguished.

This present invention of mine relates to certain improvements in apparatus heretofore invented by me, and for which Letters Patent have been issued.

Figure 1 represents a plan of oil-tank, showing application of gas-distributing device.

A is the oil-tank; *b*, the pipe for conveying gas from the gas-storage tanks R to the distributing device inside the oil-tank. *b'* are pipes, which are perforated, and which, in connection with the cones *c*, which are also perforated on the upper surface, distribute the gas evenly in all directions beneath the surface of the oil, which, rising to the surface, extinguishes the fire.

Fig. 2 is an enlarged sectional view of the perforated cone *c*. Fig. 3 represents top view, and Fig. 4 sectional view, of distributing device.

A, Fig. 4, represents the oil-tank; B, a pipe for conveying the gas to the distributing device. c^1 is a pipe having a flange on the bottom to prevent it from coming out of the stand F. D is a distributing-pipe, having holes on opposite sides at their opposite end, for the purpose of letting out the gas into the oil. *a a* are bevel-wheels; c^2, shaft; and *b'*, handle for turning the pipe D. *e e* are truss-rods, for supporting the ends of the pipe D. *d* is a gland for screwing down packing around the flanged pipe c^1.

The gas enters from the gas-storage tanks through the pipe B, passes up through pipe c^1 into distributing-pipe D, and out through the holes into the oil.

The shaft c^2 may be carried to any convenient distance away from the tank, and the handle *b'* placed on the end. The handle, being turned, imparts a rotary motion, by means of the bevel-gears *a*, to the distributing-pipe D, and the gas issuing from the perforations while the pipe D is turning around distributes the gas regularly and evenly, which, rising to the surface, extinguishes the fire. The force of the gas escaping through the perforations in the distributing-pipe D from opposite sides of each end of the pipe will cause the pipe to revolve without the use of crank, although the crank may be put in place to work the pipe in case the pressure of the gas should be too light to cause the rapid revolution of the pipe.

Fig. 5 represents an oil-tank with another form of gas-distributing device. Fig. 6 is an enlarged side view, and Fig. 7 an enlarged end view, of the cone-shaped distributing device.

This apparatus is designed to utilize the draw-off pipe, to be generally found in oil-tanks, and forms a very economical and easily-adjusted apparatus for the same purposes as previously described.

B', Fig. 5, is a pipe for drawing off the oil. This pipe is connected just inside the tank by means of a swivel-joint with the adjustable pipe P. c^3 is a cone-shaped device, connected to a sleeve, D, by means of the pivots *a'*. This sleeve is slipped over the end of the pipe P and held by means of a band and bolt. The weights W tend to keep the bottom of the distributing-cone c^3 always level, no matter what is the position of the pipe P. Thus, when the oil in the tank, and also the pipe P, is lowered, as shown in Fig. 5 in dotted lines P', the cone assumes the position shown,

and the same for any variation of the pipe. R represents a series of storage-tanks for carbonic-acid gas, connecting with pipe P, as shown by the arrow.

The reservoirs for the storage of carbonic-acid gas may be either portable or stationary, as most convenient for the purpose desired.

I claim as my invention—

The combination of gas-reservoir R, the pipe B, central pipe c^1, with crank c^2, gearing *a*, and perforated distributing-pipe D, Figs. 2 and 3, all substantially as described, for the purpose of delivering gas into a tank of oil, naphtha, or other combustible fluid, for the purpose of preventing the ignition of the oil or naphtha, or for the purpose of extinguishing fire.

In testimony whereof I have hereunto set my hand.

JOSEPH H. CONNELLY.

Witnesses:
T. E. CONNELLY,
BENJ. WILDE.