

(No Model.)

F. GRAY.

SPRINKLER SYSTEM FOR EXTINGUISHING AND PREVENTING
SPREADING OF FIRES IN LUMBER YARDS, &c.

No. 561,311.

Patented June 2, 1896.

FIG. 1.

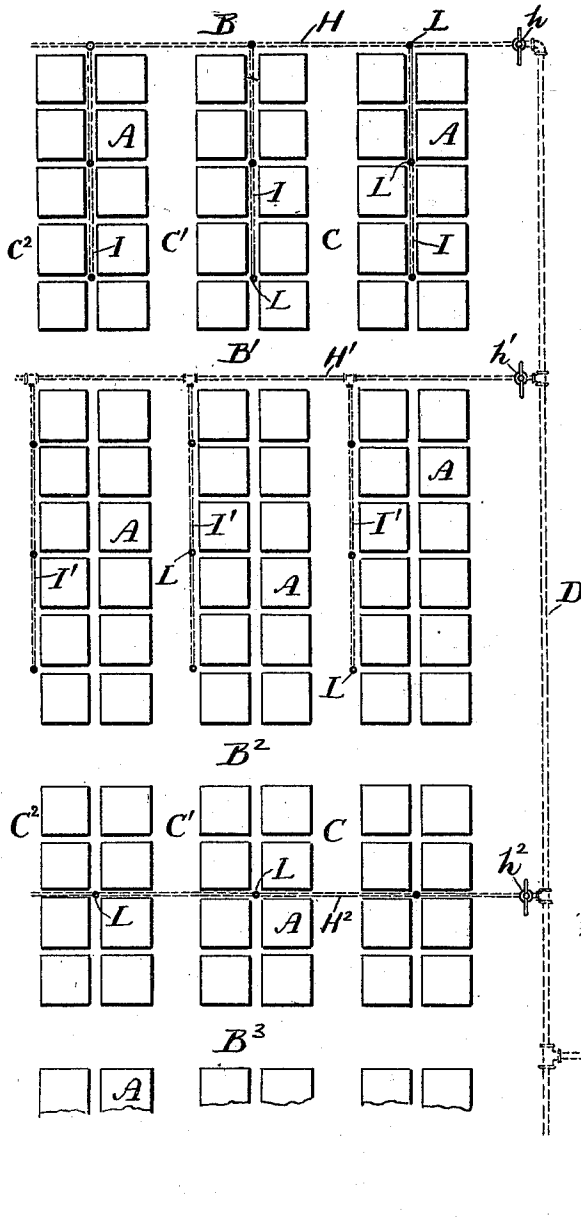


FIG. 2.

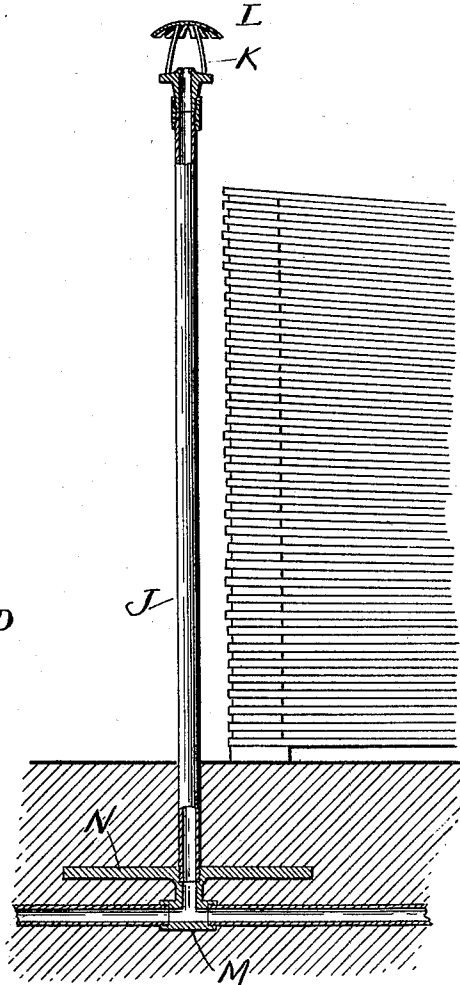
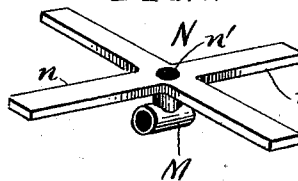


FIG. 3.



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SPRINKLER SYSTEM FOR EXTINGUISHING AND PREVENTING SPREADING OF FIRES IN LUMBER-YARDS, &c.

SPECIFICATION forming part of Letters Patent No. 561,311, dated June 2, 1896.

Application filed October 22, 1894. Serial No. 526,662. (No model.)

To all whom it may concern:

Be it known that I, FRANK GRAY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Sprinkler Systems for Extinguishing and Preventing the Spreading of Fires in Lumber-Yards and Similar Places and for Irrigating Land, of which the following is a
10 specification.

The principal object of the present invention is to provide a sprinkler system which is adapted to be arranged in lumber-yards for the purpose of extinguishing and preventing
15 the spreading of fires; but a system which embodies the said invention is equally adapted for the purpose of irrigating lands, and I therefore desire to have it understood that the use of said system for this latter purpose or
20 for any other purpose for which it is adapted is within the scope of my invention, although this specification will be confined to a description of it as applied to a lumber or other yard where goods are stored.

25 The invention consists in the features of novelty that are particularly pointed out in the claim hereinafter, and in order that it may be fully understood I will describe it with reference to the accompanying drawings, which
30 are made a part hereof, and in which—

Figure 1 is a plan view of a portion of a lumber-yard and a portion of a sprinkler system embodying the invention arranged therein. Fig. 2 is an elevation of a portion of one
35 of the pipes of the system, an elevation of one of the risers, the upper end of which is shown in section, a section of the foot or brace for sustaining said riser against lateral displacement, and a section of the ground in which the pipe and foot are buried. Fig. 3 is a perspective view of said foot or brace.

A represents piles of lumber arranged, as is customary, in rows with intersecting alleys B B' B², &c., and C C' C², &c., between them.

45 D represents a pipe which is buried underground to a sufficient depth to prevent water within it from freezing, and which may be regarded either as the main of my improved system or as a portion of the water system of
50 the place where the yard is located. I prefer to regard it as the main of my system and as

having connection by means of a pipe E with the water system of the place and by a second pipe F with a second source of water supply—as, for example, a reservoir or tank from
55 which the water is taken and forced by a pump G into the system. Two sources of supply are suggested, for the reason that underwriters frequently refuse risks where the sprinkler system depends upon a single source for its
60 supply of water. The present invention is not, however, limited to the character of the water supply, nor is it even concerned with it beyond requiring a supply suitable for the accomplishment of the results aimed at. In
65 the pipes E and F are check-valves *e* and *f*, respectively, the purpose of which is to prevent the backflow of water through said pipes.

H H' H², &c., are pipes buried underground (preferably below the frost-line) branching
70 from the main D. Each of them is provided with a valve (*h h' h²*, &c.) which normally closes it and excludes water, but which may be moved by hand to admit water. Any desired number of these pipes from one up may
75 be used, the number depending upon the area of ground to be protected, &c.

I I', &c., are a number of pipes buried underground (preferably below the frost-line) branching from the pipes H H', &c.
80

Preferably the pipes H H', &c., follow the alleys B B', &c., because when the lumber is already piled this is the most convenient place to locate them; but this is not essential. They may take any direction with reference to the
85 main D, and may, if desired, pass under the piles of lumber, as does the pipe H², as shown in the drawings. Preferably also, and for the same reason, the pipes I I', &c., follow the alleys C C', &c.; but this is not essential, and
90 the pipes I are shown differently located. The requirements of the invention are satisfied if these pipes H H', &c., I I', &c., are so located that risers J may be carried upward from them at sufficiently close intervals to afford
95 the desired protection, as hereinafter described, whether said risers be located in the alleys (as are the risers of the pipes lettered H and I') or in the spaces between the several
100 piles of lumber, (as are the risers of the pipes lettered H² and I.)

The risers extend above the tops of the piles

of lumber. Each of them is open at top and is provided with a suitable yoke K, that supports a deflector L, against which the escaping stream strikes and by which it is deflected and scattered in all directions. Any or all of the pipes H H', &c., I I', &c., may be provided with these risers, this being a matter which must be left entirely to the discretion of the constructing engineer. As shown in the drawings, all of the pipes I and I' have them and the pipes H and H² have them, this latter pipe being similar to the pipes H and H' except that it is differently located with relation to the lumber-piles and is without any lateral branches. These various arrangements of pipes are illustrated solely for the purpose of showing that the invention is not limited in respect to their number or location. I prefer, however, to divide the yard up into sections and have for each section a pipe (with or without branches, as may be found most desirable) leading from the main and provided with a valve for controlling the admission of water to it and with the necessary number of risers properly located, so that when a fire occurs in any given section of the yard the water may be turned into the corresponding section of the system and that section of the yard sprinkled without unnecessarily sprinkling other sections. For example, should fire occur in that section of the yard located between the alleys B and B', as shown in the drawings, by opening the valve *h* water can be admitted to the pipe H and its branches and the whole of that section of

the yard sprinkled without sprinkling other sections, and so on.

In order to connect the bottom of the riser with the underground pipe, a T, such as shown at M, is incorporated in said pipe with its lateral branch or stem projecting upward, and into this lateral branch or stem the lower end of the riser is screwed, and in order to brace the riser laterally and prevent it from falling over this T has cast with it a number of radial arms *m*, the arrangement being such that when the parts are secured together said arms constitute lateral braces.

What I claim as new, and desire to secure by Letters Patent, is—

In a sprinkler system, the combination of a pipe buried underground, and having suitable connection with a source of water supply, said pipe including a number of T's having their lateral branches arranged to project upward vertically, said lateral branches having, beneath the ground, laterally-projecting arms or braces, a valve for controlling the admission of water to said pipe, a number of vertical risers having their lower ends screwed into the vertical branches of the T's and extending to a suitable height above the surface of the ground, said risers being open at their upper ends and there provided with means for distributing the water discharged from them, substantially as set forth.

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Witnesses:

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