A. K. BRAUER, DEC'D.
S. D. BRAUER, EXECUTRIX.
SPRINKLING NOZZLE.
APPLICATION FILED APR. 30, 1917.

1,430,620. Patented Oct. 3, 1922.

Fig. 1

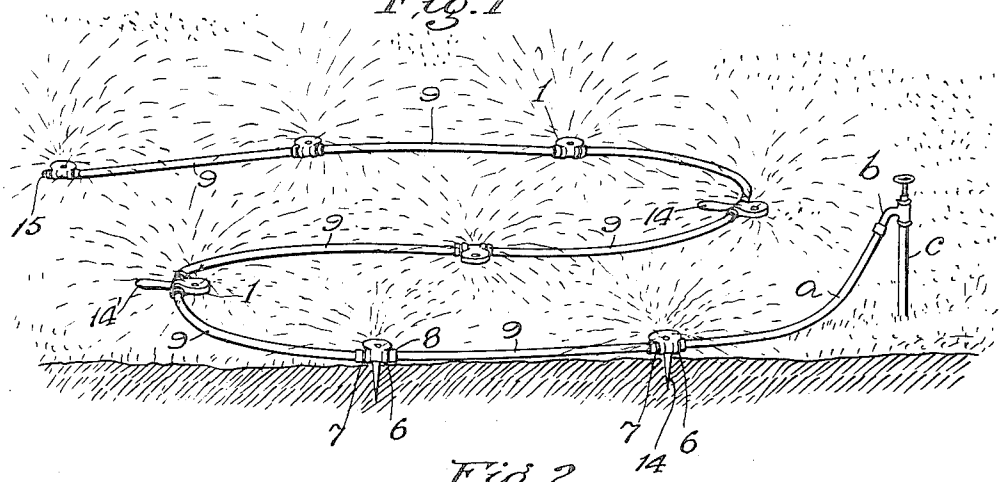


Fig. 2

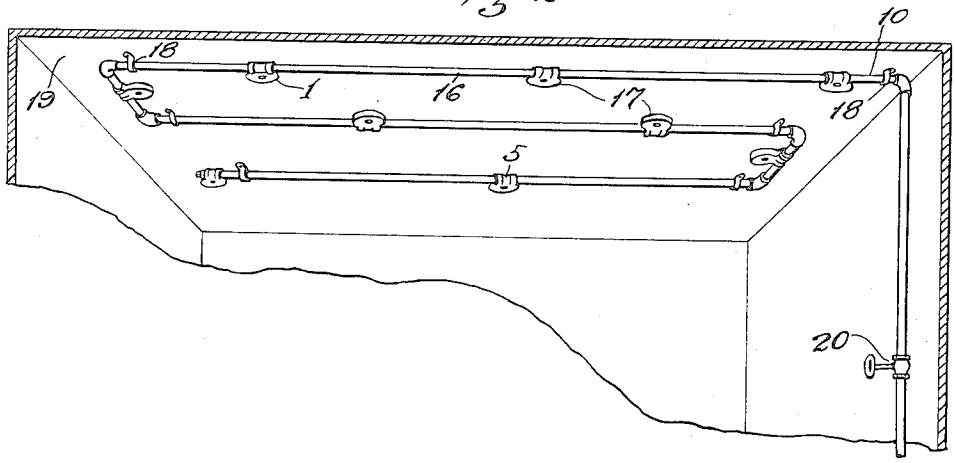


Fig. 3

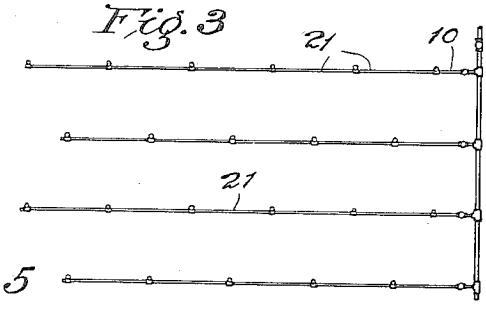


Fig. 4

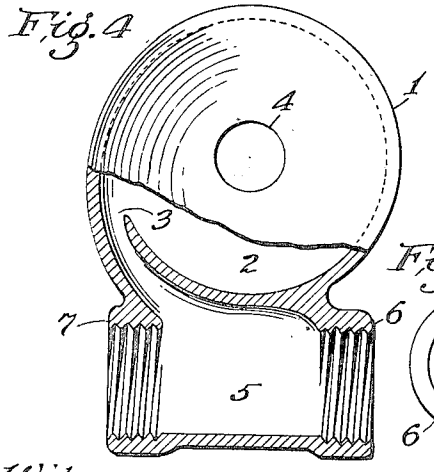
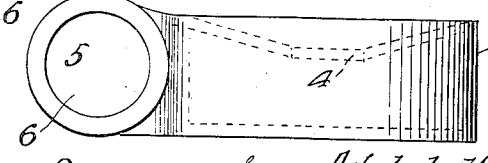


Fig. 5



Witness
C. C. Holly

Inventor
Adolph K. Brauer
by James R. Townsend
his attorney

Patented Oct. 3, 1922. 1,430,620

UNITED STATES PATENT OFFICE.

ADOLPH K. BRAUER, OF LOS ANGELES, CALIFORNIA; SERENA DORATHEA BRAUER, EXECUTRIX OF SAID ADOLPH K. BRAUER, DECEASED, ASSIGNOR TO SERENA DORATHEA BRAUER, OF LOS ANGELES, CALIFORNIA.

SPRINKLING NOZZLE.

Application filed April 30, 1917. Serial No. 165,632.

To all whom it may concern:

Be it known that I, ADOLPH K. BRAUER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Sprinkling Nozzle, of which the following is a specification.

This invention relates to nozzles adapted for sprinkling lawns, for irrigating gardens, fields and other tracts of land, and for sprinkling systems installed for fire protection in stores, warehouses and other buildings.

An object of this invention is to provide cheap, convenient and easily-installed nozzles whereby lawns and other grounds may be irrigated by surface sprinkling, and also to provide a cheaper construction for fire extinguishing sprinkler systems.

An object of this invention is to provide a nozzle adapted for use in a sprinkling system whereby all the nozzles will receive the same water pressure and thereby produce an even sprinkling of water on all portions covered by the sprinkling system.

Another object of this invention is to provide a sprinkling nozzle which will have an even spray of water emitted therefrom at every point on the periphery of the orifice.

The new construction of sprinkler nozzle may be made in different forms and it will only be necessary to illustrate the invention by showing one or two of such forms, it being understood that the nozzle may be made with or without a spike and with or without a stabilizing lug.

Other objects and advantages may appear from the accompanying drawings, the subjoined detail description and the appended claim.

The accompanying drawings illustrate the invention.

Figure 1 is a perspective view of an irrigating sprinkler system for use in a lawn, field or garden, and being equipped with sprinkling nozzles embodying this invention.

Fig. 2 is a perspective view of a fire extinguishing sprinkler system equipped with nozzles constructed in accordance with features of this invention.

Fig. 3 is a fragmental plan of a stationary irrigating sprinkler system equipped with nozzles constructed in accordance with features of this invention.

Fig. 4 is a plan, partly in section, of a sprinkler of the centrifugal type, constructed in accordance with this invention.

Fig. 5 is an elevation of the intake side of the sprinkler shown in Fig. 4.

The sprinkler comprises a body 1 having a practically circular chamber 2, a tangential duct 3 opening thereinto and a centrally arranged sprinkler orifice 4.

The sprinkler body is flat and the intake and outlet are coaxially arranged at one edge of such body at the same side of the body with the tangential duct 3. This construction is considered preferable for both the irrigating system and the fire extinguishing system because the flat form and radial distribution adapt themselves most readily to the conditions involved.

On one side of the body 1, and tangential to the outer periphery of the circular chamber 2, there is provided a straight-nipple constituting a supply chamber 5 having a threaded intake 6 at the end opposite the tangential duct or passageway 3, and a threaded outlet 7 at the end adjacent to said tangential duct. The duct or passageway 3 which leads from the supply chamber 5 to the circular vortical chamber 2 is tangential to the outer periphery of said vortical chamber 2, and narrows inwardly toward said vortical chamber which vortical chamber has a concave top and an orifice 4. The intake 6 is adapted for connection with a coupling 8 of a flexible pipe or hose 9 in Fig. 1, or with a piece of rigid metal pipe as at 10 in Figs. 2 or 3, and the outlet 7 leading from the sprinkler is adapted for like connections. Each connecting pipe 9 is connected at one end with the outlet of one sprinkler and at the other end with the intake of a succeeding sprinkler.

In practice with the form of sprinkler system shown in Fig. 1, the sprinklers may or may not be provided with spikes and lugs 14, 14′, or with either. Sections 9 of hose of appropriate length will be respectively screwed into intake 6 of one sprinkler and outlet 7 of another.

To construct the system shown in Fig. 1, a section of hose *a*, adapted to be attached to the garden valve or hose-bib *b* at the

hydrant *c* will be connected to the intake 6 of the first sprinkler. A hose section 9 corresponding to the section *a* will be screwed into the outlets 7 of said sprinkler at one end and into an intake 6 of a second sprinkler at the other end. Other sections 9 of hose are in like manner attached to other sprinklers in the same manner until at the last sprinkler a plug 15 will be inserted into the outlet to close the system.

When it is desired to install and use the connected irrigating sprinkler system shown in Fig. 1, the hose section *a* is attached to the valve *b* and the sprinklers are disposed upon the lawn as desired. The spikes being inserted into, and the lugs being laid on, the ground to stabilize the sprinklers, the water is turned on and the sprinkling proceeds. If it is found that any sprinkler of the system is not throwing the spray as desired, said sprinkler may be shifted so that all of the ground may be properly sprinkled.

The arrangement shown in Fig. 2 is of substantially the same character as that shown in Fig. 1; the only difference being that the sprinklers are inverted and sections of metal pipe 16 connect the sprinklers 17, and the system is held in place on the ceiling by suitable loops 18 fastened to the ceiling 19.

Water may be automatically turned on by any usual thermostatic device not shown, or by a valve 20.

In the form shown in Fig. 3, the rigid pieces of pipe 21 correspond in function to the pipe connections formed by the hose sections 9, except that said hose sections are flexible and are applied to use on the surface of the ground while the pipe sections 21 are rigid and may be buried in the ground.

By arranging the threaded intake 6 and outlet 7 coaxially as shown, the sprinkler is especially adapted for use as a part of the connected sprinkler system, and by arranging the vortical chamber tangentially to the straight nipple thereby leaving said nipple free from obstructions each nozzle will receive the same amount of pressure from the water of the water line and thereby an equal sprinkling will be obtained from all the nozzles of the sprinkler system, and the water line of which may thus be extended to cover an area of any length. The area covered by sprinklers controlled by one valve may thus be indefinitely extended.

By having the passageway 3 offset or tangential to the outer periphery of the vortical chamber a true circular and vortical action of the water is set up in the vortical chamber and thus produces an even spray of water at all sides of the opening.

I claim:

In a sprinkling nozzle, a nipple having an alined inlet and outlet; a flat circular vortical chamber formed outside of said nipple and tangential thereto and having a concave upper face provided with a central opening; and a curved passageway leading from the interior of said nipple into the vortical chamber, said passageway narrowing inwardly toward said vortical chamber and the orifice thereof and being formed opposite to the inlet and adjacent to the outlet of said nipple and tangential to the outer periphery of said chamber.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 24th day of April, 1917.

ADOLPH K. BRAUER.

Witness:
JAMES R. TOWNSEND.