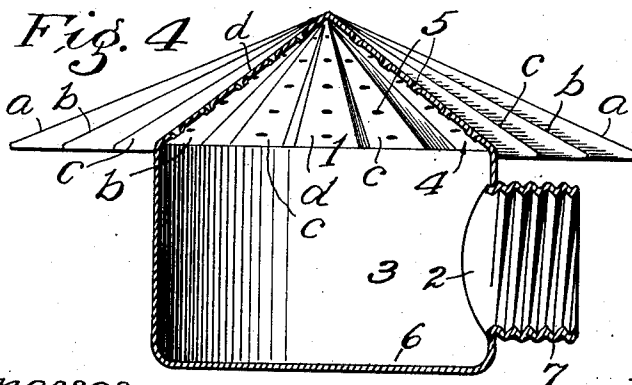
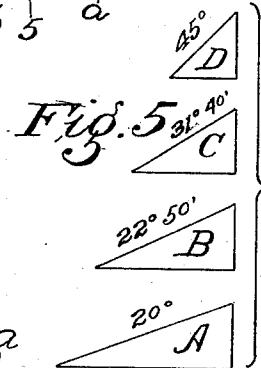
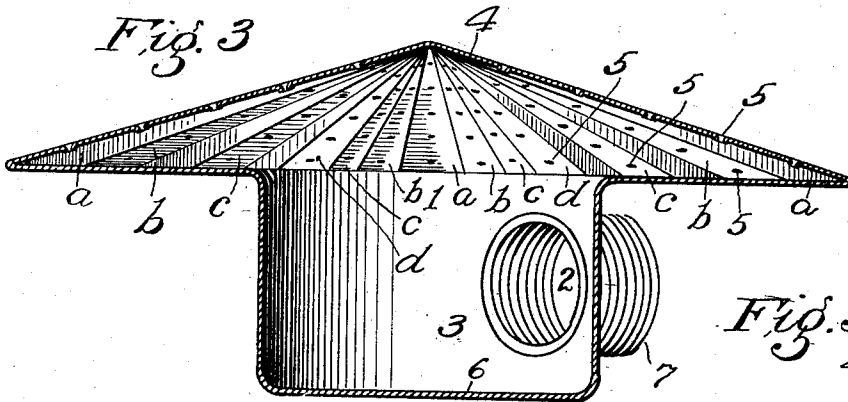
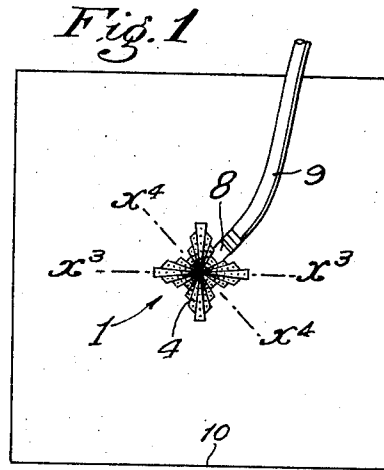
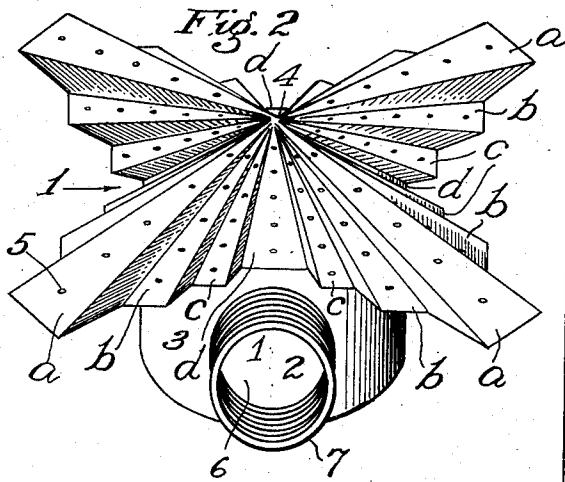


G. H. HUNTER.
 SPRINKLER FOR SPRAYING AREAS OF DEFINITE SHAPE.
 APPLICATION FILED SEPT. 3, 1910.

1,016,632.

Patented Feb. 6, 1912.



Witnesses

b. c. Holly

Olive Diffenderfer

Inventor

George Higgins Hunter

James R. Townsend
 his atty.

UNITED STATES PATENT OFFICE.

GEORGE HIGGINS HUNTER, OF REDLANDS, CALIFORNIA.

SPRINKLER FOR SPRAYING AREAS OF DEFINITE SHAPE.

1,016,632.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed September 3, 1910. Serial No. 580,437.

To all whom it may concern:

Be it known that I, GEORGE HIGGINS HUNTER, a citizen of the United States, residing at Redlands, in the county of San Bernardino and State of California, have invented a new and useful Sprinkler for Spraying Areas of Definite Shape, of which the following is a specification.

The objects of this invention are: to provide means to sprinkle a square or other polygon of definite shape evenly from center to edge without sprinkling beyond the edge of such area; to provide a cheap and simple sprinkler which will evenly sprinkle a square area; to provide a sprinkler of this kind which can be readily made from stamped sheet metal.

The invention is capable of being constructed both in cast and in sheet metal, and it is only necessary to show one of these forms in the drawings as the manner of constructing other forms will be understood by those skilled in the art without further illustration.

The accompanying drawings illustrate the invention as constructed for the purpose of sprinkling square areas.

Figure 1 is a plan view of a sprinkler constructed in accordance with this invention for sprinkling a square area the edges of which are shown in outline. Fig. 2 is a perspective view of the sprinkler as constructed of sheet metal in accordance with this invention. Fig. 3 is an elevation of the sprinkler in section on line x^3 , Fig. 1. Fig. 4 is an elevation in section on line x^4 , Fig. 1.

The sprinkler comprises a chamber 1 having an inlet 2 through a base 3 which forms the bottom of the chamber and also forms the support for the sprinkler. The top 4 of the chamber is stepped, being formed with sets of slanting step-like facets a , b , c , and d , each of which facets is provided with perforations 5 arranged in a row. The step-like surfaces or facets are radially arranged and slope from the apex in different angular planes, the angle of the surfaces a , b , c and d being all different from each other. Any desired number of perforations may be provided in each facet.

A principle of this invention is that the sprinkler has perforations arranged on a broken surface comprising the perforated sprinkler facets radially arranged thus adapted to spray a polygon of definite shape when liquid under pressure is equally ap-

plied to the inner sides of the facets so as to pass through the perforations.

In the drawings five perforations are shown in each facet and the top of the sprinkler has four long facets a extending at an angle A of 20° with the flat bottom 6; and on each side of each of said long facets are shorter facets b of an angle B of 22° , $50'$; on each side between every two of the facets b are two intermediate facets c arranged at an angle C of $31^\circ 40'$ and between each two of the intermediate facets c is an inner facet d arranged at an angle D of 45° ; all of said angles being measured from the horizontal base or bottom 6. It is thus seen that the sprinklers may be formed with four points or arms as shown in Fig. 1 and that the facets are triangular and radiate and widen from a common center, the facets of low degree constituting the top steps forming the ridges and tips of the arms, and facets of higher degree constituting successive lower steps occupying the spaces between said ridges.

The inlet 2 is provided with a screw-threaded socket 7 into which the nozzle of the coupling 8 of a hose 9 may be screwed.

In practical use the water or other liquid entering the chamber under pressure will discharge through the various perforations in the form of sprays that are variously located and have various trajectories depending upon the angle of the facet and location of the perforation from which they flow.

In the form shown in the drawings the sprays from the upper perforations of any one facet will overlap the sprays from the perforations below and the sprays from the facets having a slight angle will be thrown a shorter distance as compared with the sprays having greater angles and it will be found that the sprays from the innermost facets d will be thrown to the corners of a square and those from the ridge-like facets a will be thrown to the middle of the sides of the squares and that as a result of the arrangement shown the sprays from the intermediate facets will be thrown to intermediate points and consequently a square area at the center of which the sprinkler is stationed will be evenly sprinkled without sprinkling beyond the margin of the square.

The form of the base 3 and the configuration of the top and bottom, and the num-

ber of facets and arrangement of the perforations may all be changed with the result of changing the figure of the area that will be sprinkled. The size of such area will depend upon the pressure of the liquid in the sprinkler.

The top and base may be pressed from two separate pieces of sheet metal and the threaded socket or nipple 7 may be spun from another piece of sheet metal and all the pieces may then be assembled and soldered together.

Thus it is seen that a cruciform sprinkler body having an inlet and a stepped pyramidal top provided with sloping radiating rows of outlets, is provided, the angles of the rows with the bottom of the body being various and that the rows of perforations *a* at the corners of the pyramidal top are longer than the side rows *b*, *c*, *d* and that the perforations are most densely arranged in the shorter and steeper rows midway between the longer, more slanting corner rows and become gradually sparse toward the corners of the top, although each row contains the same number of perforations and the perforations of each row are equally spaced apart.

In manufacturing the sprinkler with sheet metal top the perforations may be punched from above or below before soldering the top onto the base, and the base may be of cast metal or of sheet metal regardless of the character of the top; and the base may be of any approved form.

In the sprinklers designed to sprinkle an exact square the rows radiate from a common apex and are arranged in diametrically opposite pairs of corresponding rows, and there are four rows sloping at an angle of 20°, eight rows sloping at an angle of 22° 50', eight rows sloping at an angle of 31° 40' and four rows sloping at an angle of 45° all of said angles being with a horizontal plane and each row having the same number of perforations, all perforations being of the same size and the perforations of each row being equally spaced apart.

I claim:—

1. A sprinkler having a chamber with inlet therinto, and a top formed in perforated radial step-like facets of different angles.

2. A sprinkler having a chamber with inlet therinto, and a top formed in perforated facets of different angles, the perforations being more densely arranged in the shorter than in the longer facets.

3. A sprinkler having a cruciform py-

ramidal top and provided with perforations sparsely arranged at the corners and increasingly denser toward the middle of its sides.

4. A sprinkler having a stepped top provided with perforations arranged symmetrically at various altitudes in the steps around an apex, said steps being radially arranged.

5. A sprinkler having a stepped top provided with perforations arranged symmetrically at various altitudes in the steps around an apex; the arrangement of the perforations on diametrically opposite sides of the apex being alike upon each step as to altitudes and distances from the apex, said steps being radially arranged.

6. A sprinkler provided with a top having perforated step-like surfaces in the form of planes radiating and sloping downward from an apex.

7. A sprinkler provided with a sheet metal top having perforated step-like plane surfaces radiating and sloping downward at different angles from an apex.

8. A sprinkler provided with a sheet metal top having perforated step-like surfaces radiating and sloping in different angular planes downward from an apex and a base to which said top is fastened in any effective manner, said base being provided with an inlet.

9. A sprinkler provided with a stepped top having rows of perforations in steps that slant from a common apex and that are of various lengths and slants.

10. A sprinkler provided with a top having rows of perforations arranged in pairs of diametrically opposite rows, all sloping from a common apex and of various lengths and slants, there being four rows sloping at an angle of 20°; eight rows sloping at an angle of 22° 50'; eight rows sloping at an angle of 31° 40' and four rows sloping at an angle of 45°, substantially as and for the purpose set forth.

11. A sprinkler having a chamber with inlet therinto, and a top formed in perforated step-like facets of different angles, adapted to spray a polygon of definite shape.

In testimony whereof, I have hereunto set my hand at Redlands, California, this 27 day of August, 1910.

GEORGE HIGGINS HUNTER.

In presence of—

E. C. HAMMEN,
M. A. HALLABAUGH.